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What drives institutional investors' climate adaptation decisions in commercial real estate?

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303

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Abstract

Purpose – Institutional investors play a critical role in adapting the built environment to the unavoidable impacts of climate change. However, little is known about their decision-making behaviours and the factors driving climate adaptation (CA) investments. Drawing on institutional theory, this study aims to examine how organisational and institutional contexts influence CA decision-making.

Design/methodology/approach – This study employs a qualitative approach, drawing on nine semi-structured interviews with senior managers at different management levels in Dutch real estate investment organisations.

Findings – Although coercive, normative and mimetic pressures drive CA, their capacity to generate action remains limited by low legitimacy perceptions for taking CA actions, lack of prioritisation of CA goals, partial enforcement of regulatory or policy frameworks, divergent views on climate uncertainty and low environmental interconnectedness. These limitations point to a prevailing institutional pattern of sustainable finance 2.0 that positions CA as a risk management tool rather than a systemic response.

Practical implications – This study highlights structural institutional constraints that can limit stronger CA adaptation approaches and provides insights for policymakers and industry practitioners seeking to promote or engage in more coordinated, collective and systemic adaptation responses in real estate investment.

Originality/value – The study contributes to a limited but growing body of knowledge on CA in institutional real estate investment by empirically enquiring about the drivers and institutional factors shaping CA decision-making. Grounded in theory, it contributes to the sustainable finance debate by providing new explanatory insights into why growing awareness does not consistently translate into CA actions, pointing to a structural lock-in that constrains CA.

Keywords Institutional investors, Climate adaptation, Real estate investment, Institutional theory, Property investment, Decision-making, Sustainable finance

Paper type Academic Paper

1. Introduction

Climate change will continue to pose significant risks to the built environment, even with deep Greenhouse Gas emissions cuts (Liyanage *et al.*, 2024). Because mitigation efforts alone can no longer address the magnitude of the expected impacts, adapting the existing building stock to physical climate risks has become increasingly urgent. This is especially relevant in regions with a mature building stock, such as Europe, where approximately 85–95% of existing buildings are expected to remain in use by 2050 (European Commission (COM (2020) 662 final), 2020).

Adapting the existing building stock will require active involvement from the private sector, as public finance alone has proven insufficient to meet climate adaptation goals (Barrett and Chaitanya, 2023). Particularly, institutional real estate investors, who hold approximately 80% of European long-term investments and are important players in the commercial real



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estate market (INREV, 2020), play a critical role in addressing this challenge. Failure from these organisations to adapt their real estate to the physical risks of climate change may expose portfolios to increasing climate-related losses, threaten local and national economies, and ultimately disrupt building and urban services that are vital for community recovery (Keenan, 2015; Lamond *et al.*, 2019).

Despite the growing recognition that climate change poses material financial risks, empirical evidence suggests that institutional investors continue to prioritise regulatory and transition-related risks over physical climate risks in the short term (Krueger *et al.*, 2020; Stroebe and Wurgler, 2021). Consequently, most climate-related real estate efforts have focused on mitigation actions, such as energy efficiency and Net-zero strategies (Christensen *et al.*, 2018; Petkov *et al.*, 2021), whereas Climate Adaptation (CA) actions aimed at reducing exposure and vulnerability to physical climate risks remain comparatively overlooked (Warren-Myers and Hurlimann, 2022).

This imbalance is also further embedded within the broader and evolving field of sustainable finance, where finance is expected to contribute to achieving the Sustainable Development Goals. Schoenmaker (2018) described the emergence of this field in three distinct stages that separate different ways to include non-financial aspects in investment decision-making, ranging from finance-as-usual subject to minimum environmental and social standards while optimising for shareholder value (stage 1), followed by a shift to stakeholder value wherein social and environmental externalities are treated equal to finance in the investment decision (stage 2), and finally a system-perspective to prioritise societal values subject to minimal economic conditions (Schoenmaker, 2018). These different evolutionary stages influence how investors interpret, prioritise, and respond to climate challenges in practice, including climate adaptation, and are revisited in the discussion to further interpret the findings.

Understanding why CA actions remain limited, therefore, requires examining the drivers behind institutional investors' decision-making, particularly in relation to the organisational and current institutional environment that shapes them. Some studies have adopted this perspective. For example, Nyoni *et al.* (2023) showed that sustainability actions are significantly shaped by institutional pressures related to economic incentives, reporting obligations, competitiveness, societal expectations, and professional norms. Similarly, Bolomope *et al.* (2022), in their study of listed property trusts in New Zealand, highlighted the complementary role that institutional contexts play in explaining how organisations make investment decisions beyond rational and traditional frameworks. However, while these studies demonstrate the relevance of institutional and organisational contexts in shaping investment decisions in real estate, these contributions do not address the specific case of climate adaptation in institutional real estate investment. To fill this gap, this study examines the following research question: "*What are the drivers and the institutional factors shaping climate adaptation decisions by real estate institutional investors?*"

To answer the research question, we build on the work of DiMaggio and Powell (1983) and Oliver (1991) by arguing that CA responses by institutional investors are dependent on organisational and institutional factors, including climate-related values, norms, and expectations. We analyse empirical findings through the theoretical lens of isomorphic pressures (DiMaggio and Powell, 1983) to understand what drives organisations to take CA decisions, and employ the predictive dimensions of strategic responses (Oliver, 1991) to understand how the current institutional context influences CA responses. We define CA as the actions taken to respond to experienced or anticipated climate stimuli or stress by increasing its adaptive capacity (Nelson *et al.*, 2007).

Based on semi-structured interviews on climate adaptation efforts, this study develops a theory-informed analysis of how real estate institutional investors' climate adaptation decision-making is shaped by the institutional environment in which they operate, making various contributions to existing literature and practice. First, it deepens the understanding of real estate institutional investor decision-making in the context of climate adaptation, an actor,

sector, and topic that remains underexplored in existing literature. Second, by adopting an institutional theory perspective, the study grounds the findings theoretically by elucidating how existing pressures and institutional conditions simultaneously enable and constrain climate adaptation responses. Third, the study mobilises Schoenmaker's (2018) Sustainable Finance Evolution framework to point to a deeper institutional pattern, conceptualising a sustainable finance 2.0 lock-in around CA. This latter contribution offers analytical insights to scholars and practitioners on the limitations of firm-centric approaches and the conditions under which collective and systemic adaptation responses may emerge.

2. Literature review: the role of institutional pressures and institutional factors in real estate decision-making

Understanding how institutional investors make climate adaptation decisions requires attention to the organisational and institutional environment in which these decisions unfold. The following subsections elaborate on the organisational context in which institutional investor decision-making occurs, the drivers of climate adaptation through institutional pressures, and the factors in the institutional environment that shape organisations' responses to these pressures. Figure 1 portrays how these concepts influence institutional investor decision-making.

2.1 Institutional real estate investor decision-making

Institutional investors are organisations that professionally manage portfolios of financial and real assets, including real estate, on behalf of beneficiaries or clients (Basile and Ferrari, 2016). These include pension funds, insurance companies, private equity firms, sovereign wealth funds, and investment managers (Çelik and Isaksson, 2013). This study focuses on investment management organisations, since institutional investors often delegate the management of alternative investments, such as real estate, to specialised firms (Braun and Christophers, 2024). In real estate, investment management organisations are commonly referred to as Real

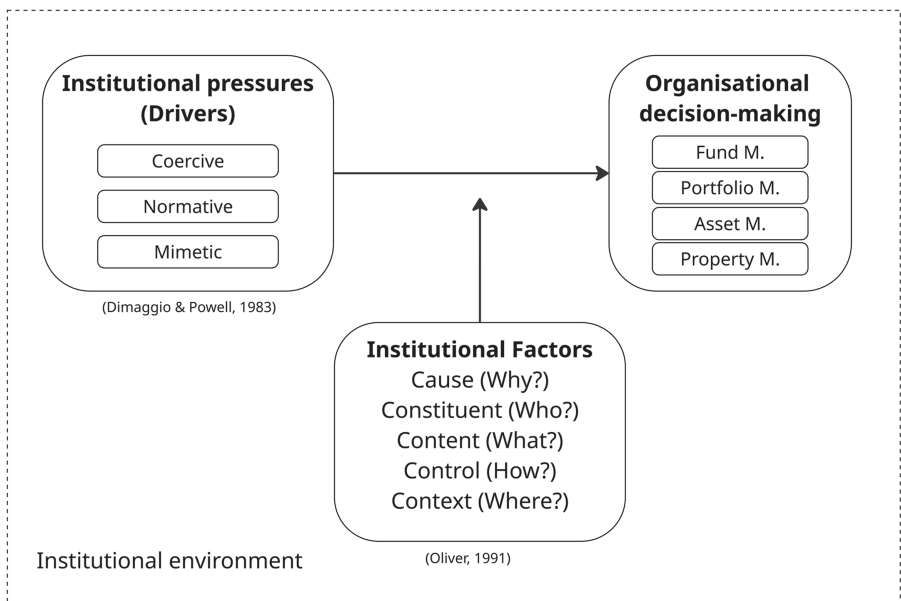


Figure 1. Conceptual framework. Source: Authors' own work

Estate Investment Managers (REIM) (Teichmann, 2007). REIMs are responsible for implementing owners' mandates into investment decisions (INREV, 2025), guided by internal structures and strategies across the four levels of the real estate management pyramid: Fund/investment, portfolio, asset, and property management (Van Loon and Aalbers, 2017).

At the fund level, decision-making focuses on setting top-down strategic and economic targets that guide all investment activities, including defining the risk appetite, return expectations, liquidity objectives, and ESG strategy (Muczyński, 2015; Petkov *et al.*, 2021). These targets, particularly in relation to risk and return, are operationalised through the funds' investment style, commonly categorised as Core, Value-add, or Opportunistic. Core emphasises low-risk, long-term income streams and little volatility; Value-add focuses on short-term value creation through renovation, reconfiguration, or tenant engineering; and Opportunistic involves high-risk (re)development of empty or new buildings in the short term to increase exit value (Basile and Ferrari, 2016).

At the portfolio management level, decision-making concerns the strategic management of bundled assets to achieve returns consistent with the owners' "risk appetite" (Muczyński, 2015; Redlein and Stopajnišk, 2020). It operationalises upper-level strategies by allocating and tailoring the mix of assets, defining building types and investment regions, evaluating and monitoring portfolio performance, and steering the asset management level (Muczyński, 2015).

At the asset management level, decision-making focuses on the strategic management of individual assets, ensuring that each property aligns with portfolio objectives and identifying value growth opportunities throughout the property lifecycle, from acquisition to disposal (Muczyński, 2015). These value growth opportunities may include the development of new properties or the redevelopment of existing ones to remain competitive and increase returns (Van Loon and Aalbers, 2017). Finally, at the property management level, decision-making is often outsourced, focused on operational day-to-day management services (Teichmann, 2007), including facility management, commercial and tenant mix optimisation, and user and tenant relationship management (Redlein and Stopajnišk, 2020).

2.2 Institutional theory and climate adaptation decision-making

Although REIMs' decision-making is guided by internal structures and strategies, it is also shaped by the institutional context in which they operate (DiMaggio and Powell, 1983). To analyse this context, we draw on two perspectives within neo-institutional theory: institutional pressures by DiMaggio and Powell (1983) and the strategic responses by Oliver (1991). Institutional pressures emphasise conformity, suggesting that organisations tend to adopt similar responses to maintain legitimacy (DiMaggio and Powell, 1983). In contrast, Strategic responses emphasise organisational agency, recognising that organisations can choose different ways to respond to these pressures, ranging from full compliance to active resistance (Oliver, 1991). While these perspectives may seem contradictory, we adopt a complementary perspective using DiMaggio and Powell to explain the institutional pressures (the drivers), and Oliver's framework to understand the conditions under which these drivers play out (the institutional factors).

2.2.1 Institutional drivers influencing climate adaptation. Building on the theoretical framework of Figure 1, this section focuses on the drivers of climate adaptation, conceptualised as institutional pressures. In line with DiMaggio and Powell (1983), institutional pressures refer to the coercive, normative, and mimetic forces within the institutional environment that steer the adoption of new organisational practices.

Coercive pressures are exerted by authorities or dependent organisations and may manifest through both formal or informal mechanisms (DiMaggio and Powell, 1983). In the context of CA, these are often identified as primary drivers of CA actions (Zhang, 2023). Institutional investors face direct coercive pressures related to compliance with climate-related regulatory and market risks, as well as indirect pressures stemming from clients' and shareholders' demands (Bolomope *et al.*, 2022; Kolasa and Sautner, 2024).

Normative pressures derive from professional standards that dictate appropriate behaviour or best practices (DiMaggio and Powell, 1983). In real estate investment, these include adherence to ESG investment principles to safeguard corporate reputation (Krueger *et al.*, 2019), compliance with voluntary reporting standards (Nyoni *et al.*, 2023), the pursuit of green building certifications such as BREEAM and LEED, and broader ethical or moral commitments towards the environment (Krueger *et al.*, 2019).

Mimetic tendencies arise from mimicking leading organisations in uncertain environments (DiMaggio and Powell, 1983). For example, climate policy and climate change itself, due to the unknown timing and scale of weather events, can complicate investment decisions (Truong and Trück, 2010), often prompting organisations to benchmark against competitors and follow industry leaders in sustainability (Krueger *et al.*, 2019).

2.2.2 Institutional factors shaping climate adaptation responses. Oliver (1991) posited that organisations don't simply conform to the institutional pressures that affect them but have active agency in the way they choose to respond to them. She argued that organisational responses are shaped by five institutional factors in their environment, namely the cause, constituents, content, control, and context of the pressures. Each factor has its own set of predictive dimensions that capture key variations in how pressures are experienced. Depending on how these predictive dimensions combine, organisations may adopt different strategic responses, ranging from passive conformity to the pressure to increasing active resistance: acquiescence, compromise, avoidance, defiance, and manipulation (Table 1).

Cause factors relate to the perceived degree of economic gain and social fitness from conformity (Oliver, 1991). The lower the perceived gains, the more likely an organisation is to resist change. This poses a challenge for CA, as studies emphasise that adaptation efforts often

Table 1. Antecedents of strategic responses to pressures

Institutional factor	Question	Predictive dimension	Strategic responses				
			Acquiesce	Compromise	Avoid	Defy	Manipulate
Cause	Why are these pressures being	Economic fitness	High	Low	Low	Low	Low
		Social fitness/ Legitimacy	High	Low	Low	Low	Low
Constituents	Who is exerting the pressures?	Multiplicity of constituents demands	Low	High	High	High	High
		Dependency on constituents	High	High	Low	Low	Low
Content	What are these pressures?	Consistency with organisational goals	High	Moderate	Moderate	Low	Low
		Constraints/loss of autonomy	Low	Moderate	High	High	High
Control	How are these pressures being exerted?	Legal coercion or enforcement	High	Moderate	Moderate	Low	Low
		Voluntary diffusion of norms	High	High	Moderate	Low	Low
Context	Where do these pressures occur?	Environmental uncertainty	High	High	High	Low	Low
		Environmental interconnectedness	High	High	Moderate	Low	Low

Source(s): Adapted from Oliver (1991)

yield intangible benefits, such as improvements in health and wellbeing (Joseph *et al.*, 2012), that are difficult to quantify or capture in private financial returns (Asplund and Hjerpe, 2020).

Constituent factors concern the stakeholders exerting the pressures (Oliver, 1991). The greater the number of stakeholders with conflicting views (multiplicity), the less likely an organisation is to conform to the pressure. Conversely, the greater a stakeholder’s dependency on exerting pressure, the greater the conformity. On this note, studies have highlighted investors’ dependence on end-users and shareholders, as they require them to address climate risks to conform to this pressure (Kolasa and Sautner, 2024).

Content factors relate to the consistency of the pressures with organisational goals and the degree to which they limit autonomy (Oliver, 1991). In real estate, the growing importance of ESG investments (Biasin *et al.*, 2024), including climate risks and resilience, reflects the alignment of CA with organisational goals. However, the current prioritisation of transition risks over physical climate risks (Stroebe and Wurgler, 2021), combined with short corporate decision-horizons relative to climate change timelines, can hinder long-term climate action, a dynamic also known as “tragedy of the horizon” (Hennes *et al.*, 2024).

Control factors refer to how pressures are enforced, emphasising that legal coercion and voluntary diffusion can enhance conformity (Oliver, 1991). Nyoni *et al.* (2023) identified increasing institutional pressures stemming from the Sustainable Development Goals, government actions (e.g. the EU Strategy on Adaptation to Climate Change), financiers (e.g. the EU Taxonomy, SFDR, and the CSRD), and stakeholders’ demands (e.g. clients or tenants).

Context factors concern environmental uncertainty and interconnectedness (Oliver, 1991). In CA, this relates not only to the uncertainty of weather events but also to the need for environmental interconnectedness, as synergies between public and private sectors are needed to enhance urban resilience (Wieteska-Rosiak, 2020). Although investor coalitions have supported collective climate action, recent withdrawals by major institutions (e.g. JP Morgan Asset Managers’ withdrawal from Climate Action 100+ in the U.S.) threaten this interconnectedness (Kolasa and Sautner, 2024).

3. Methods

This study used a qualitative research method approach. This method was selected because qualitative methods help understand complex, dynamic, and multidimensional processes (Sofaer, 1999), as is decision-making in REIMs. Qualitative research also enables the examination of the context in which a phenomenon occurs, providing an in-depth understanding of the patterns and interactions that shape the experiences of those involved (Sofaer, 1999).

Data collection and analysis followed a three-step process, as illustrated in Figure 2. The first step (1) involved selecting research participants and designing a data collection guide. Participants were selected based on a sampling criteria matrix (Table 2). This matrix was developed based on a mixed purposive sampling strategy, combining criteria sampling and

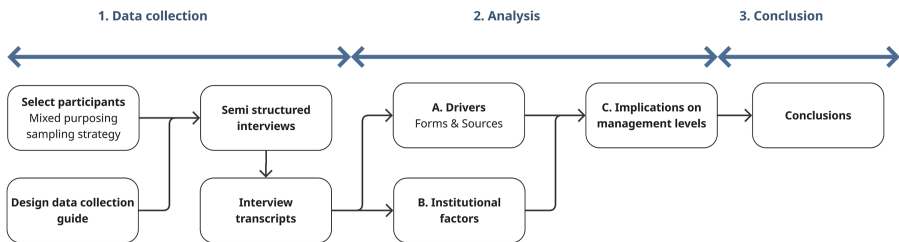


Figure 2. Data collection and analysis. Source: Authors’ own work

Table 2. Sampling criteria matrix

Sampling type	Criteria	FM1	FM2	PM1	PM2	PM3	AM1	AM2	SM1	SM2
Criterion sampling	Senior level position	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Linked to Institutional Investor mandates	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Involved in commercial real estate	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Management of properties in the Netherlands	✓	✓	✓	✓	✓	✓	✓	✓	✓
	<i>Management level</i>									
Maximum variation sampling	Across management levels								✓	✓
	Fund	✓	✓							
	Portfolio	✓		✓	✓	✓				
	Asset management						✓	✓		

Source(s): Authors' own work

maximum variation sampling. Mandatory criteria for inclusion included seniority of the professional in the role, a link to institutional investor mandates, and having assets under management in the Netherlands. The maximum variation sampling criteria aimed to capture a diverse range of experiences, enabling analytical comparison and deeper insights from different perspectives, including those of professionals at various management levels.

The value of the sample lay in its positional relevance for decision-making rather than quantity. Based on the selected criteria, a total of nine real estate professionals from different real estate investment management organisations were interviewed. The diversity within the sample enabled an in-depth understanding of how climate adaptation decision-making is perceived and navigated across different management levels. All interviews were conducted online via Microsoft Teams, following a pre-established interview guide, from May to July 2025. Following the data collection, interviews were transcribed and anonymised.

The second step (2) was analysing the data, which was conducted iteratively and in parallel with data collection. Each transcript was reviewed multiple times and analysed using thematic analysis, a methodology commonly used to identify patterns of meaning in qualitative data (Clarke and Braun, 2014). The transcripts were analysed in two thematic areas using Atlas TI: (a) the drivers of CA according to institutional pressures and (b) the institutional factors that influence climate adaptation decisions.

- (1) Drivers: During coding, assigning each driver to a single institutional pressure was not straightforward. To avoid confusion, the analysis required a distinction between *the form* and *the source* of the driver. *Forms* refer to how a driver manifests in practice, while the *source* indicates where the driver originates, which can be classified as coercive, normative, or mimetic. For example, ESG was frequently named as a key driver of CA decisions. However, depending on the context, it could stem from different sources reflecting on institutional pressures: coercive from a legal obligation to the client and its embeddedness in internal strategies; normative when emerging from internal organisational values, an industry norm of what makes a good investment, or a good professional practice; or mimetic when pursued to gain a competitive advantage.

Forms of drivers were first coded inductively through open coding, allowing categories and themes to emerge from the data (e.g. INREV, BIZ, and IVBN were coded as *forms* and later grouped into the “Industry Network” theme). Afterwards, each *Form* was linked to its *Source*. *Source* codes emerged inductively and were subsequently classified deductively into the three types of institutional pressures.

- (2) Institutional factors: the analysis of the institutional factors influencing CA provided an in-depth understanding of how the institutional environment shapes organisational responses. Factors were coded according to [Oliver’s \(1991\)](#) categories of antecedents of strategic responses (cause, constituents, content, context, and control) and their associated predictive dimensions. Each predictive dimension was then assessed and categorised into three levels (high, medium, and low) based on interview data.

Finally, the third step involved drawing conclusions from the analysis, providing insights into the factors of the institutional environment that require attention, and where further research is needed.

4. Results

4.1 Institutional drivers for climate adaptation

Findings on the drivers of CA are presented according to their *form* and *source*. This distinction reflects on the two dimensions, explained in the methodology section, through which drivers were identified during the analysis. *Forms* of drivers refer to the mechanisms through which drivers for CA manifest ([Table 3](#)) and the *source* of drivers indicates where *forms* originate ([Table 4](#)).

4.1.1 *Forms of drivers*. All *forms* of drivers mentioned by the participants were listed and grouped into eight themes [Table 3](#). This table does not indicate whether a given *form* of driver results in CA action, nor whether it is systematically used by an organisation. Instead, it indicates what each participant identifies as a relevant driver of CA decisions. Moreover, while some of the identified forms do not necessarily relate to CA specifically, such as EPC label and CREEM pathways, these were retained as indicative of how investors perceive and interpret mechanisms that shape sustainability-related action. Below, we describe each theme individually:

Certification: Refers to any observation made where an interviewee purported the view that Green building certifications act as mechanisms that drive climate adaptation actions. These were also named by some participants as a way of demonstrating ESG compliance.

Climate risk assessment and financial implications: Refers to CA responses stemming from climate risk assessments and their associated financial implications. Participants mentioned that these assessments are conducted at the portfolio and asset level. While portfolio-level assessments identify gross-risk, by classifying each property into a risk level, asset-level assessments evaluate the net-risk, based on specific building attributes, and are mainly conducted in high or medium-risk properties. Additionally, participants mentioned some financial considerations stemming from these assessments, including: balancing risk and return, safeguarding long-term asset performance, managing insurance costs, mitigating marketability and stranding asset risk, and integrating climate risks in the underwriting through both discount rates, from aggregated climate risks scores, and impact functions, by quantifying the expected average damage for every hazard.

Industry assessment tools or guidelines: Several industry assessment tools and guidelines were named as relevant mechanisms influencing CA decisions. The majority of participants named the Dutch Green Building Council (DGBC) framework as a common guideline for assessing climate risks in the Netherlands, and as a way of complying with EU regulations. Other *forms* in this theme include tools offered by the Climate Adaptation Service (e.g. climate risk maps), recommendations from the TCFD, and other industry tools, such as GPR Gebouw and NL-Green Label, that collect data to feed buildings’ dashboards to keep track of climate risks.

Table 3. Forms of drivers for CA actions according to interview participants

Theme	Form of driver	F-01	F-02	P-01	P-02	P-03	A-01	A-02	S-01	S-02
Certification	BREEAM		✓							
	EPC Label	✓								
Climate risk assessment and financial implications	Climate Risk Assessment	✓		✓			✓	✓	✓	✓
	Balance risk and return					✓				
	Impact on investment long-term performance			✓						✓
	Increase in insurance cost			✓						
	Integration of climate risk into underwriting			✓						
	Marketability risk/Fear of stranded asset	✓								✓
Industry assessment tools/ guides	Climate Adaptation Services				✓					
	CRREM	✓	✓							
	DGBG framework			✓	✓	✓	✓			✓
	GPR Gebouw								✓	
	TCFD			✓						
Industry network	NL-Green Label								✓	
	BIZ (Business Investment Zones)							✓		
	INREV (SDDS)	✓		✓						✓
	IVBN	✓					✓			
Organisation sustainability strategy and tools	Corporate sustainability ambitions	✓	✓			✓			✓	
	ESG alignment	✓	✓	✓	✓			✓		✓
	Impact strategy								✓	✓
	Internal sustainability tools			✓		✓			✓	
Regulatory and policy frameworks	Climate risk assessment and reporting compliance	✓	✓					✓		
	EU Taxonomy						✓		✓	✓
	Guidelines from DNB			✓						
	Policies/regulations	✓			✓		✓	✓		
	SFDR – Article 8	✓	✓		✓					
Benchmarking frameworks	GRESB	✓	✓					✓	✓	
	Tenant happiness benchmark (Customeyes)								✓	
Stakeholder influence	Fiduciary responsibility		✓	✓					✓	✓
	Type of investor		✓		✓		✓	✓		
	Mandate/client criteria	✓	✓		✓		✓			✓
	Ownership leverage			✓						
	Tenant negotiation									✓
	Tenant satisfaction				✓	✓	✓		✓	
	Tenant sustainability commitments	✓	✓					✓		

Source(s): Authors' own work

Industry Network: Industry networks, such as the European Association for Investors in Non-Listed Real Estate Vehicles (INREV) and the trade union association for institutional and professional real estate investors in the Netherlands (IVBN), were also mentioned to influence CA decisions. These networks not only appear to serve as platforms for sharing and discussing

Table 4. Classification of source-drivers influencing CA decisions

Institutional pressure	Themes	Source
Coercive	Contractual and legal obligations	Client demand/requirements Legal obligation
	Obligations from authority	Governance rights from shareholding Parent company demand Internal strategic processes
Mimetic	Market positioning Peer comparison and learning	Competitive advantage Peer comparison Peer learning
Normative	Industry standards and guidance	Industry guidelines Industry norms Industry standard
	Professional standards and duties	Internal risk management Professional expectation Professional norm
	Stakeholder values	Collective benefits Developer initiative House organisational values Tenant values
Source(s): Authors' own work		

ideas about current challenges, but also provide ESG data benchmarks. Participants mentioned that while historically discussions have focused on climate mitigation, they are increasingly addressing CA topics. Moreover, BIZ (Investment Business Zones) were identified as key platforms for stakeholder collaboration in various themes, including CA, especially within retail areas.

Organisation sustainability strategy and tools: Refer to internal organisational mechanisms that steer CA decisions. Some participants reported that addressing CA is part of their ESG alignment and their internal corporate sustainability ambitions. Others highlighted that CA plays a part in their impact strategy, either because of its social impact (e.g. creating a healthy environment for residents by protecting them from heat stress) or its environmental impact (e.g. implementing measures for water management and drought resistance). Other forms mentioned by participants included internal sustainability tools to track sustainability in projects, internal frameworks to assess climate risks and expected loss at the asset level, individual KPIs for CA, and surveys to track changes in clients' and tenants' preferences.

Regulatory and policy frameworks: Participants reported that compliance with climate risk assessment and disclosure requirements, as well as existing policies and regulatory frameworks, strongly influences CA decisions. While some referred to these frameworks in general terms, many specifically identified the EU Taxonomy and the SFDR-Article 8 as key drivers of CA adaptation decisions. The EU Taxonomy was seen as a baseline for CA strategies, while institutional clients' preference for Article 8-classified funds further motivates REIMs to align with this standard, often leading them to classify voluntarily other funds at this level.

Scoring and benchmarking frameworks: Participants referred to scoring and industry benchmarks as mechanisms influencing CA decisions, as these included metrics on CA. In particular, they referred to GRESB as a scoring tool for ESG performance and as a platform to compare, assess, and improve asset and portfolio performance relative to the market. Outperforming GRESB benchmarks was described not only as an indicator of portfolio quality but also as a mandatory criterion in some investor mandates. Tenant satisfaction surveys were likewise reported to prompt CA actions by revealing user-level climate risk impacts, such as heat stress causing tenant discomfort, and enabling a tenant satisfaction benchmark in the market.

Stakeholder influence: This theme reflects on drivers shaped by stakeholders' preferences, responsibilities, and governance power. It includes investor demands expressed through mandates, industry-known preferences of the investor type (institutional investors) towards CA, and managers' fiduciary responsibilities to abide by the mandates and act in clients' best interests. Other *forms* include tenant negotiations about requesting measures before signing or renewing lease contracts, tenant satisfaction from temperature comfort complaints, and alignment with the tenants' own sustainability commitments or ambitions, which at times included CA requirements. Finally, ownership leverage, whereby majority shareholding in a fund or board representation also gives investors stronger governance power to shape CA practices.

4.1.2 *Source of drivers related to institutional pressures.* Sources of drivers were identified, grouped into thematic categories, and analysed according to the three types of institutional pressures (Table 4). This section presents these themes, as described by participants.

4.1.2.1 Coercive pressures. Contractual and legal obligations: Refer to coercive pressures that are either legally enforced through policies and regulations, or contractually by clients (institutional investors) through mandates or direct requests. These were identified by several participants as the most important drivers for taking CA decisions, and one of the *sources* that underpins most *forms* of drivers. As one investment manager put it, "(...) I think there are two things which influence an investment manager, one is regulations and the other one is the client" (AM-01). However, participants also emphasised the limits of these pressures, as client demands often stop at climate-risk reporting. Similarly, other participants noted that while the EU Taxonomy requires climate-risk assessment and mitigation plans, their implementation is not monitored.

Obligations from authority: Although not legally enforced, this *source* stems from obligations imposed by internal authority. Participants mentioned governance rights from having a complete or majority shareholding, whereby an investor or the REIM has a greater influence in decisions, as a source-driver of CA. Other *sources* in this category include having CA as a direct demand imposed by their parent company, as some REIMs, though legally separate, remain part of larger corporate groups. Consequently, CA requirements may reflect the parent company's ambitions and commitments. Similarly, participants mentioned that while REIMs pursue their own strategic goals and processes, these are not uniformly applied across funds, particularly when short-term value-add fund horizons conflict with long-term organisational goals.

4.1.2.2 Normative pressures. Professional standards and duties: Some participants indicated that CA decisions emerged from the professional expectation to act in their clients' best interest, and their responsibilities towards investors and tenants to manage these risks through internal risk management approaches. Furthermore, participants described CA as a professional norm in which regulations only act as a baseline but not a primary driver. As one interviewee noted, "(...) most of the time with things like this, regulations are following us more than what we are following them. So we try to stay ahead of the regulation change" (PM-03).

Industry standards and guidelines: Several interviewees highlighted the role of industry guidelines, particularly the DGBC framework for climate-adaptive buildings, as a practical tool for identifying and addressing climate risks at both the portfolio and asset levels. While some participants with properties outside the Netherlands highlighted the need for similar frameworks for other locations, other managers indicated that even when risks and measures were known through this framework, decisions about which risks to mitigate and to what extent remain largely undefined. In addition, climate adaptation, along with other sustainability criteria, is perceived by some participants as an industry norm that no longer stands as optional but as a prerequisite for remaining investable, with benchmarks, certifications, and data reporting to clients in accordance with industry standards.

Stakeholder values: Values from various stakeholders were also found to steer CA decisions. For example, tenant values, particularly those of large tenants, influence these

decisions not only because they need to be kept satisfied, but also because they can request alignment of their leased properties with their own values and ESG ambitions. Participants further recognised their own organisational values as important *source* drivers for CA, noting the embeddedness of ESG within their firms and its role in shaping CA practices. Developers were also seen as a source of initiative, as they could propose climate-related measures without an explicit investor request. Finally, one participant referred to seeking collective benefits, particularly for assets in commercial streets, where improvements in the area could benefit the whole community.

4.1.2.3 Mimetic pressures. *Market positioning*: Some interviewees expressed an interest in CA as a means to gain a competitive advantage through recognised green building certifications, high ESG scores, and industry leadership through benchmarks (e.g. GRESB). In particular, a participant mentioned the lost opportunity of viewing CA investments solely from a risk-management perspective, a distinction they perceive as common in institutional investment, rather than a commercial strategy to signal asset quality in the market. Similarly, another participant noted that CA investments were necessary to ensure low vacancy rates in a competitive environment: “(. . .) so I strongly believe that investing in good buildings and adaptive measures because, in a competitive environment, if tenants could choose between a building that’s really well designed and one that’s not, of course they will always choose the most comfortable and functional property” (PM-02).

Peer comparison and learning: Sources of drivers grouped in this category relate to peer comparison and learning. Participants expressed that benchmarking against competitors is an important practice to monitor ESG developments and to establish reference points to improve their own goals. Additionally, some participants emphasised the role of peer learning in shaping climate-adaptation practices. However, while these platforms for mutual learning exist, another participant noted that knowledge exchange is limited due to members being direct competitors.

4.2 Conditions shaping organisational responses to climate adaptation

Building on [Oliver’s \(1991\)](#) framework of institutional antecedents, this section examines the conditions of the institutional environment that shape how organisations respond to current CA pressures. Specifically, we analysed the five predictive factors and their associated dimensions to assess how these conditions influence organisational response to CA.

[Table 5](#) synthesises this analysis by (a) identifying the predictive factors and dimensions discussed by interviewees, (b) indicating at which level each dimension was observed in the empirical data, and (c) comparing these observations against the levels that [Oliver \(1991\)](#) associates with an acquiescence level response. The subsections below describe each predictive factor and dimension.

4.2.1 Cause. *Economic fitness*: A high level of economic fitness was found in relation to CA responses. These considerations are primarily driven by a risk management perspective, the fiduciary responsibility towards clients, and the adoption of climate-resilient portfolios as a commercial strategy. A PM noted when asked about the main driver for investing in CA, “(. . .) I think first it’s a financial decision because in the end my managers and colleagues are convinced that climate is a risk in terms of finance and the return we get” (PM-01).

Social fitness: Secondary to economic fitness, participants mentioned CA as a commitment towards responsible investments through ESG alignment and its inclusion in their impact funds. Participants mentioned ESG practices as “the right thing to do”, indicating a concern with broader societal outcomes rather than seeking purely financial outcomes. For example, one participant mentioned that after the economic factors, there is also a social motivation behind CA, particularly in relation to wellbeing: “There’s also a social motivation, (. . .) there’s also a social risk in floodings and in heat” (SM-02).

4.2.2 Constituents. *Multiplicity of constituent demands*: Participants noted a low level in this dimension as they considered institutional clients and REIMs having similar goals in CA,

Table 5. Predictive factors and dimensions shaping CA responses

Predictive factor	Predictive dimension	Description from empirical data (a)	Level found in interviews (b)	Benchmark to acquiescence level (c) Oliver (1991)
Cause	Economic fitness	- Impact on ROI, preventing stranding assets, climate-risk reporting compliance, and climate risk management - Commercial value opportunity of having climate resilient portfolios	High	High
	Social fitness	- Related to responsible investments through ESG alignment - Concern with impact on the social dimension of ESG	Moderate*	High
Constituents	Multiplicity of constituents demands	- Similar CA goals with other institutional investors - Conflicting goals with other types of private non-institutional investors - Larger corporate tenants might pose additional CA requirements	Low	Low
	Dependency on institutional constituents	- Dependency from stakeholders when making CA decisions - Client (investor) - Tenants - Parent company - Local governments	High	High
Content	Consistency with organisational goals	- CA is aligned with organisational goals - Priority of climate mitigation over adaptation actions	Moderate*	High
	Constraints imposed in the organisation/loss of autonomy	- CA is not a constraining factor but rather one that enhances decisions - Limitation for the pool of properties they can invest in on, or on the areas for development	Low	Low
Control	Legal coercion or enforcement	Limited to climate risk reporting with an absence for enforcement of climate risk mitigation plans	Moderate*	High
	Voluntary diffusion of norms	Participants perceive themselves as being ahead of regulations in relation to CA.	High	High

(continued)

Table 5. Continued

Predictive factor	Predictive dimension	Description from empirical data (a)	Level found in interviews (b)	Benchmark to acquiescence level (c) Oliver (1991)
Context	Environmental uncertainty	• Low perception of uncertainty around climate risks at the fund and portfolio level due to a low risk perception • Timing, severity, and impact of climate risks, especially for international investors • Impact on ROI for implementing CA measures • Changing regulations • Reliability on climate risk data	Moderate*	High
	Environmental interconnectedness	• Prevalence of CA efforts at property level • Lack of CA collective efforts aside from those in BIZ or a (re) developments • Collective CA is seen as responsibility of municipalities or developers • Interconnectedness found in data sharing but not in the actions taken to integrate climate risks internally	Low*	High

Note(s): *Indicates predictive dimensions where interview findings deviate from levels expected under [Oliver's \(1991\)](#) acquiescence response

Source(s): Authors' own work using [Oliver's \(1991\)](#) framework

and reported differences related to conflicting goals with smaller private non-institutional investors. For example, an asset manager mentioned “(. . .) *Institutional investors are more or less the same, but there are also big investors and other funds, not institutional, that have other goals and a short-term view*” (AM-02).

Dependency on institutional constituents: Participants noted a high level of dependency on their clients (the investors), tenants, and parent companies when making CA decisions. While clients were seen as the most important stakeholder, keeping tenants satisfied is crucial as they may request CA investments to address comfort issues or to align the property with their own corporate sustainability ambitions, particularly in the case of large institutional tenants. Other participants also noted dependency on parent companies or local governments, the latter due to their influence beyond property boundaries.

4.2.3 Content. Consistency with organisational goals: All participants mentioned a high alignment of investing in CA with organisational goals, although they admit that priority is given to mitigation actions. For example, a Fund Manager mentioned, “*So climate adaptation is a part of it, but the main focus is on net zero. (. . .) For every asset business plan throughout the year, we always do a climate adaptation scan. It is part of the set of data that you have to provide and to check and to act upon, but it's not the most important one*” (FM-02). Furthermore, some participants highlighted tensions between organisational ambitions and fund-level realities. For example, while some view value-add funds as difficult to align with internal CA long-term objectives, others argued that shorter periods could facilitate the implementation of CA measures, as longer holding periods do not necessarily ensure greater alignment, but may instead lead to the postponement of CA actions.

Constraints imposed on the organisation/loss of autonomy: Participants did not perceive CA as a constraining factor, but rather as one that enhances and improves their decision-making. However, some mentioned a limitation on the pool of available climate risk-free properties or areas for investment or development. For example, one noted, *“it means you can’t buy everything that’s on the market. But that’s not the goal of our client because we are a long-term investor. So most of the assets we acquire, we have in our portfolio for 20 or more years. So everything we buy today has to be future-proof”* (AM-01).

4.2.4 Control. Legal coercion or enforcement: Legal coercion or enforcement was found to be at a medium level, as it is limited to climate risk reporting, with limited evidence of enforcement regarding climate-risk adaptation plans. For example, a participant noted that the results of these risk assessments are compiled into climate risk dashboards, where exposure levels are tackled over time. However, while such monitoring mechanism exists, there is limited control to ensure the implementation of CA plans. Furthermore, another participant noted that funds classified as Article 8 under the SFDR are subject to stricter commitments and audits, highlighting less managerial flexibility. In contrast, Article 6 funds were not bound by the same requirements, allowing managers greater freedom to decide what they consider appropriate, including pursuing CA measures in ways that remain commercially viable.

Voluntary diffusion of norms: Participants reported being ahead of regulations, highlighting a high level of voluntary approach to CA. To them, regulations serve to set the minimum standards. As one participant noted, *“(.) If the regulations are changing, we have to act on it. But most of the time, with things like this, the regulation is more following us than we follow them. (. . .) Regulation will happen on some parts so that everybody has the same level playing field”* (PM-03).

Furthermore, some participants mentioned that their organisations have already embedded ESG practices within their corporate values and goals, and have developed tools, strategies, and other mechanisms to integrate climate risks and CA into their decision-making. For instance, some allocate specific budgets to enhance sustainability criteria in their portfolios, incorporate improvements in CA into their CapEx plans, or have defined trade-offs with tenants. One participant, for example, explained that if a tenant requests specific improvements, the asset manager may agree to them, provided that the tenant commits to a longer lease.

4.2.5 Context. Environmental uncertainty: This dimension was classified as moderate, as participants expressed differing perceptions of uncertainty. Some reported low uncertainty, noting that climate risks are not yet a major factor in portfolio performance. While specific assets show emerging risks from heat stress or drought, for example, these are not currently significant enough to influence overall portfolio outcomes or market location preferences. As an asset manager described: *“where people want to shop and live, are sometimes areas at risk and the risk is still not big enough to become a decisive factor”* (AM-01). Others, however, reported some uncertainty regarding the timing, severity, and impact of climate risk; the return on investment after implementing CA measures; the unpredictability of future regulations impacting income projections (e.g. Dutch rent freeze); and the unreliability of climate risk data and tooling across different data providers.

Environmental interconnectedness: Participants reported a low level of interconnectedness in CA efforts, noting that efforts are siloed at the property level. Collective CA responses were said to occur mainly in area (re)developments and rarely in standing investments, except for assets within BIZ areas, where collaboration with similar investors is more common. Furthermore, several participants also perceived collective CA measures as the responsibility of municipalities or even developers in an earlier stage of the development process. Some interconnectedness was observed through participation in industry networks, such as INREV and IVBN; however, its impact remains limited, as data interpretation and application vary across organisations.

5. Discussion

5.1 Drivers for climate adaptation

In line with neo-institutional theory (DiMaggio and Powell, 1983), the findings indicate the presence of all three types of institutional pressures driving CA responses among institutional real estate investors. However, while these pressures exist, their capacity to drive CA actions remains limited.

Similar to Zhang (2023), a strong influence of coercive pressures from formal and informal obligations highlights regulations, contractual obligations, and requirements from internal authorities as the main drivers for CA. However, their impact remains limited as current regulations focus on climate-risk assessment and disclosure rather than on implementing plans to address these risks. This reveals a regulatory gap in the operationalisation of CA plans at the asset level. For example, while the SFDR promotes transparency around environmental characteristics, it does not explicitly require CA action (European Parliament and Council, 2019). Therefore, the alignment of Article 8 funds with CA depends on whether a fund defines CA as part of its environmental characteristics or pursues EU taxonomy alignment, choosing CA as one of its six environmental objectives. Similarly, while interviewees also mentioned taking CA efforts in response to their contractual obligations to clients and/or internal authorities, these efforts are largely framed through a climate-risk reporting lens, rather than through the implementation of concrete measures.

Normative pressures stemming from professional standards and duties, and stakeholder values, also emerged as significant drivers for CA. However, while these drivers illustrate a normative pull towards responsible and acceptable conduct, they appear to be mainly framed within the professional responsibility of managers to safeguard clients' financial interests, manage risk exposure, and maintain asset performance. Finally, although to a lesser extent, mimetic pressures arising from peer-learning activities and industry benchmarking were also observed, the absence of in-depth knowledge sharing reinforces an individualised approach to climate risk management and limits the opportunities for collective and coordinated CA efforts across the sector. This is particularly significant given that collective action has been widely recognised as essential for climate adaptation (Wannewitz and Garschagen, 2023), and thus, represents a further constraint for scaling CA practices.

5.2 Challenges of the current institutional environment for climate adaptation

While the previous section described the limitations of existing institutional pressures for CA, this section discusses the specific conditions within the institutional environment that limit investors' CA responses. Table 5 compared the levels of each predictive dimension found to influence CA responses with those in Oliver's (1991) framework. Deviations from expected levels under an Acquiesce response highlight aspects of the institutional environment that currently hinder a stronger approach to CA, and indicate where changes may be needed. These empirically derived aspects correspond to the predictive dimensions of social fitness, consistency with organisational goals, legal coercion or enforcement, environmental uncertainty, and environmental interconnectedness. In the following paragraphs, we discuss each of these dimensions:

According to Oliver (1991), "*the lower the degree of social legitimacy perceived to be attainable from conformity to institutional pressures and the lower the consistency of the pressure with organisational goals, the greater the likelihood of organisational resistance to these pressures*". While interviewees currently acknowledge a high level of economic relevance and alignment of CA with organisational goals, a gap remains in the level of legitimacy that adaptation currently holds. The findings show that this institutional lag stems from efforts being concentrated primarily on climate mitigation, and persists even though institutional investors identify physical risks as the highest risk over the next thirty years (Stroebe and Wurgler, 2021). This suggests that risk recognition does not automatically translate into institutional legitimacy and action. In line with Oliver's hypothesis, CA must gain comparable traction to mitigation for organisations to seek legitimacy through their adaptation efforts.

Similarly, a higher degree of legal coercion or enforcement could motivate a higher level of CA responses. According to [Oliver's \(1991\)](#) hypothesis, "*The lower the degree of legal coercion behind institutional norms and requirements, the greater the likelihood of organisational resistance to institutional pressures*". While coercive pressures were the primary driver identified in this study, this pressure was limited to climate risk disclosure, leaving gaps in climate adaptation plans and their implementation. [Zhang \(2023\)](#) reports a related pattern, showing that only coercive pressures seem to motivate adaptation in the absence of disasters. Taken together, these findings indicate that moving risk assessments into action requires stronger forms of control from regulatory enforcement and client requirements that extend disclosure toward implementation.

Contextual factors pose the greatest challenge for CA, as they need to be addressed from two dimensions: low uncertainty and interconnectedness. First, [Oliver \(1991\)](#) argued that "*The lower the level of uncertainty in the organisation's environment, the greater the likelihood of organisational resistance to institutional pressures*". The results confirm this relationship: CA decisions are less likely to be taken until investors and REIMs perceive a high degree of climate uncertainty. While interviewees acknowledged some uncertainty regarding physical climate risks, they generally do not anticipate significant risks for funds or portfolios with institutional participation. This is largely because institutional investors hold diversified portfolios, often spread across multiple geographies, which dilutes risks. This firm-centric reasoning demonstrates that investors don't recognise climate risks as a systemic challenge, a condition acknowledged by multiple scholars as necessary for adapting to environmental change and building resiliency in the built environment ([Holling, 2001](#); [Nelson et al., 2007](#)).

Second, consistent with [Oliver's \(1991\)](#) hypothesis, "*The lower the degree of interconnectedness in the institutional environment, the greater the likelihood of organisational resistance to institutional pressures*", the results indicate a limited interconnected environment in relation to CA. Interconnectedness refers to the degree of interdependence and interaction within an organisational field ([Oliver, 1991](#)). The findings highlight that investors generally perceive adaptation as an individual effort, except when the assets are part of new (re)developments or located in business zones (BIZ). Considering that individual actor-centric private strategies for CA can lead to unintended consequences ([Wieteska-Rosiak, 2020](#)) and that climate resilience is about the relationship of components in a system, rather than individual actors in isolation ([Nelson et al., 2007](#)), a low interconnected environment poses a challenge for collective CA efforts.

Together, these findings suggest that climate adaptation decision-making is not only constrained by the limitations of existing institutional drivers but also by the current institutional environment that limits investors' responses. When we interpret these indications through [Schoenmaker's \(2018\)](#) typology of the evolution of sustainable finance, these conditions point to a deeper institutional pattern. The following section develops this interpretation.

5.3 An institutional lock-in: climate adaptation under sustainable finance 2.0

[Schoenmaker's \(2018\)](#) Sustainable Finance evolution framework describes a transition from a shareholder-oriented perspective (SF1.0), through a risk- and stakeholder-based approach (SF2.0), to a more systemic perspective on sustainability in finance (SF3.0). Conceptually, climate adaptation aligns most closely with SF3.0, as it requires long-term, collective, and system-level coordination ([Holling, 2001](#); [Nelson et al., 2007](#)). However, the findings indicate that current climate adaptation practices among REIMs appear largely framed as a risk-management and value preservation exercise, consistent with an SF2.0 Typology. While this framing would normally represent a transitional stage in the evolutionary process, the current configuration of institutional pressures and contextual factors suggests a broader institutional lock-in that may constrain progression towards a more systemic SF3.0 stage.

Regarding institutional drivers, coercive, normative, and mimetic pressures are present but operate mainly within a SF2.0 perspective. Coercive pressures, especially those linked to legal

and contractual obligations, operate mainly to strengthen risk assessment, disclosure and shareholder value protection, reflecting a SF2.0 risk-management orientation. Similarly, internal corporate requirements align with what [Dyllick and Muff \(2016\)](#), and later [Schoenmaker \(2018\)](#), described as an inside-out perspective focused on reducing negative environmental and societal impacts rather than actively contributing to systemic challenges. Normative and mimetic pressures further reinforce this orientation. Professional standards and stakeholder expectations frame climate adaptation as part of the fiduciary responsibilities to manage risk and maintain asset performance, while peer learning and benchmarking encourage individualised approaches to CA. Together, these drivers channel CA toward incremental and firm-centred risk management responses that do not necessarily support the development of systemic resilience or the pursuit of broader socio-ecological goals, characteristic of SF3.0.

The institutional context in which these drivers operate further consolidates this lock-in. The absence of (1) strong legitimacy for climate adaptation, (2) weak regulatory enforcement beyond disclosure, (3) limited perceived urgency at the portfolio level, and (4) low levels of inter-organisational interconnectedness may constrain the translation of climate risk recognition into coordinated adaptation action. As a result, CA approaches appear fragmented and primarily firm-centred, reinforcing a risk-based and inward-looking understanding of climate adaptation aligned with SF2.0. This configuration of institutional pressures and factors helps explain why climate mitigation efforts, considered from a cost-benefit and transition risk reduction perspective, appear easier to embed than adaptation; why interviewees did not mention SFDR Article 9 funds, which require having sustainability as a primary objective ([European Parliament and Council, 2019](#)); and why investors emphasise reducing societal and environmental impact through ESG metrics that focus on reporting, compliance, and benchmarking, reinforcing incremental improvements rather than supporting systemic CA.

A transition toward SF3.0 would require a shift in how CA is legitimised, governed, and operationalised. Stronger regulatory enforcement alone, if oriented toward disclosure and firm-level risk reduction, is unlikely to enable such a shift and may reinforce the prevailing SF2.0 typology. Therefore, the evolution of SF requires institutional arrangements and policies that encourage collective action to support a transition from firm-centric responses to more outward-looking, system-level approaches to adaptation. Impact funds signal early outward-looking investment initiatives, as they explicitly aim to achieve positive social and environmental outcomes. However, the extent to which climate adaptation is considered in these funds is beyond the scope of this study.

6. Conclusion

This study aimed to identify the drivers and institutional factors shaping Climate Adaptation (CA) decisions by real estate institutional investors through the lens of institutional theory. All three types of institutional pressures were identified as drivers of CA decisions, with coercive pressures as the most prevalent. However, while coercive, normative and mimetic pressures are all present, each operates with clear limitations in motivating CA action. Coercive pressures primarily steer risk assessment and disclosure practices rather than the implementation of concrete CA actions; normative pressures, rooted in professional standards and fiduciary responsibilities, centre in managing risk exposure and preserving asset performance; and mimetic pressures reinforce an individualised and firm-centric approach to CA, limiting coordinated and collective CA action.

Beyond these drivers, various factors in the current institutional environment were also found to hinder CA responses. These included: a limited perception of social legitimacy surrounding CA actions; a conflicting alignment of organisational goals, where interviewees claim consistency with CA yet prioritise mitigation actions; partial enforcement of policy or regulatory frameworks; divergent views regarding the level of uncertainty associated to climate risks and CA measures; and low environmental interconnectedness, where actions are mainly treated individually rather than collectively at the area level. [Figure 3](#) portrays a visual summary of these findings.

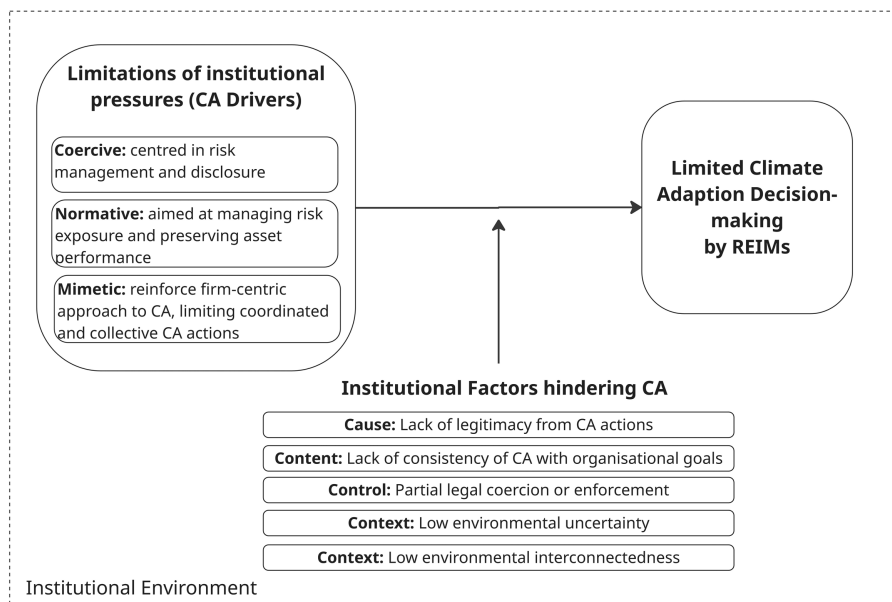


Figure 3. Limitations of drivers and institutional factors influencing CA decisions by REIMs. Source: Authors' own work

Finally, interpreted through the sustainable finance evolution framework, the findings point to a deeper institutional pattern in which CA appears locked in a SF2.0 typology. Within this context, CA is approached as a risk-management and value-preservation tool instead of a systemic response to climate change. This institutional lock-in helps interpret why, despite increasing awareness of physical risks, CA appears to lag behind climate mitigation actions, highlighting the structural challenges involved in shifting toward a more transformative and systemic climate adaptation pathway.

Based on these findings, this study identifies avenues for further research and offers insights for policymakers and industry professionals. First, the findings highlight an operationalisation gap between climate risk assessment, disclosure, and the implementation of concrete CA plans at the asset level. Although existing frameworks have supported risk awareness and reporting, future research is needed to examine how climate adaptation strategies can be implemented at the asset-level without reinforcing compliance-driven, firm-centred approaches characteristic of SF2.0. The fact that some interviewees perceived themselves as ahead of the regulations suggests that research on experimental, voluntary, or hybrid governance approaches that move beyond regulatory minimums is needed. Second, motivating CA action requires greater attention to the development of stakeholder incentives. Considering the steering capacity of corporate authorities and tenants to drive CA actions, future research could examine how incentive structures can support longer-term, collective, and system-oriented CA approaches. Third, the current individual approach to adaptation among institutional investors highlights a key challenge for scaling CA efforts. Given that effective CA requires coordinated collective efforts, further research should aim to explore institutional arrangements, trade-offs, and governance mechanisms to address this challenge. Finally, while impact investing could be associated with the SF3.0, further research should explore whether and to what extent CA is integrated into their objectives.

The limitations of this study stem from its qualitative research design and the relatively small, albeit in-depth and diverse, sample size. As such, the findings should be interpreted

as indicative rather than generalisable. The aim of this study was not to measure the prevalence of CA practices, but to generate an in-depth, theory-informed understanding of how and why climate adaptation decisions are shaped within the current institutional environment of Dutch real estate investment. By applying institutional theory, the study offers analytical insights into the mechanisms and contextual factors that shape institutional investors' decision-making, helping to interpret the persistent gap between climate risk recognition and CA action. Future research with a broader sample could further test, quantify, and refine the patterns identified.

Ethics approval

This study received ethics review board clearance from the Human Research Ethics Committee (HREC) at Delft University of Technology. All research participants provided voluntary and written informed consent.

AI disclosure

Parts of this manuscript were copy-edited using Grammarly and ChatGPT (GPT-5) to improve clarity, grammar and cohesion of the English writing, as the authors are non-native English speakers. The authors carefully reviewed, modified and approved all edits.

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