



**UNIVERSITY *of*
WORCESTER**

**INTEGRATING ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG)
MEASURES IN REAL ESTATE DEVELOPMENT PROJECTS:
CONTEXT GERMAN REAL ESTATE SECTOR**

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ABSTRACT

ESG measures are gaining importance in German real estate development due to growing ESG-related challenges and evolving legislation. Investors and financiers now view ESG measures as a key decision criterion in real estate projects. However, despite numerous drivers, a standardised approach to ESG measures integration has yet to be established. Although research on ESG and real estate is growing, the project-level integration of ESG measures in real estate development remains underexplored. This study addresses this gap by investigating ESG measures integration from a developer-focussed and practitioner-focussed perspective. It aims to identify key ESG measures, examine their perceived benefits and establish how they can be integrated into the development process to enhance project success.

To achieve this, a multi-method qualitative approach was adopted, departing from the predominantly quantitative methods common in ESG and real estate. Guided by an interpretivist philosophy, the study draws on a literature-derived conceptual framework, 20 semi-structured interviews with senior practitioners and three focus groups with ten participants to verify and refine the proposed ESG measures integration framework.

The findings show that ESG remains conceptually ambiguous in both literature and practice. ESG measures focussed on energy efficiency were identified as key in the environmental pillar. However, no dominant measures emerged for the social or governance pillars. ESG measures are more likely to gain practical relevance when they are linked to identifiable tangible or intangible benefits, such as improved competitiveness. Although the literature highlights additional benefits, they appear less familiar to practitioners. Several integration challenges and integration factors at both company-level and project-level were identified.

The study contributes to ESG research by shifting attention from company-level and portfolio-level ESG analysis towards project-level and practitioner-focussed ESG integration. It contributes to real estate development theory by extending existing process-based models through ESG measures, benefits and integration factors. The proposed framework provides a developer-focussed and practice-oriented approach for integrating ESG measures into German real estate development and linking them to project success.

Keywords: Real Estate Development, ESG Measures, Sustainability, Qualitative Research

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to my family

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LIST OF ABBREVIATIONS

BIM	Building Information Modelling
BREEAM	Building Research Establishment Environmental Assessment Methodology
CG	Corporate Governance
CR	Corporate Responsibility
CRE	Counsellors of Real Estate
CRREM	Carbon Risk Real Estate Monitor
CSR	Corporate Social Responsibility
DGNB	Deutsche Gesellschaft für Nachhaltiges Bauen
DNSH	Do no significant harm
EA	Economic activity in the context of the EU Taxonomy
EFFAS	European Federation of Financial Analysts Societies
EnEG	Energieeinsparungsgesetz
EPI	Environmental Performance Index
EPRA	European Public Real Estate Association
ESG	Environmental, Social and Governance
GEG	Gebäudeenergiegesetz
GRESB	Global Real Estate Sustainability Benchmark
GRI	Global Reporting Initiative
HOAI	Honorarordnung für Architekten und Ingenieure
ICG	Institut für Corporate Governance in der deutschen Immobilienwirtschaft
LCA	Life Cycle Assessment
LEED	Leadership in Energy and Environmental Design
MEP	Mechanical, Electrical, Plumbing (Systems)
SDG	Sustainable Development Goals
SIII	Social Impact Investing Initiative

CHAPTER ONE: INTRODUCTION TO THE RESEARCH

1.1 Introduction

The research project presented here is a doctoral thesis within the Doctor of Business Administration (DBA) programme at the University of Worcester, UK. The research project is situated within the German real estate industry and focuses on the intersection of environmental, social, and governance (ESG) and real estate development. This research aims to contribute to a deeper understanding of the intersection between ESG and the real estate development sector.

This chapter serves to establish the foundation for the research project by describing the background of the study and outlining the problem statement. Furthermore, the chapter details the research aim, objectives, and questions. Finally, an explanation of the structure of the thesis is provided.

1.2 Context of the study

This section discusses the contextual setting of this research project. Germany and the German real estate development market serve as the study's practical context, while it will be discussed that the intersection of ESG and real estate development research serves as the theoretical context. After the contextual setting has been outlined, the research problem of this study will be stated.

1.2.1 Practical context

The following sections outline the key characteristics of the German real estate development market, with particular emphasis on its relevance to the research project. In addition, ESG-related challenges associated with the German development context are discussed in order to further substantiate the study's relevance. Finally, the implications of the EU Taxonomy for the German development market and, thereby, for the research topic are examined.

1.2.1.1 Germany and the German real estate market

The context for this research project is the German real estate development sector. The Federal Republic of Germany (Germany) had a population of 84,669,326 in 2023 (Destatis, 2023), and is therefore the most populous country in the European Union (EU). Germany is the largest economy in the EU and the third-largest economy in the world by nominal Gross Domestic Product (GDP) (World Bank, 2023).

Germany and the German real estate development market constitute a particularly compelling empirical context for a research project at the intersection of ESG and real estate, as Germany is Europe's largest economy and one of the world's most significant market economies (World Bank, 2023). The real estate industry is of significant importance for the German economy as it accounts for around one-fifth of Germany's total gross value added, comprises more than a quarter of all firms, and employs approximately one in ten workers (Gondring, 2004; Breuer and Steininger, 2020; ZIA, 2022). Of the 794,000 companies classified as part of the real estate industry, only an estimated 3,550 are real estate developers. In 2025, these developers had around 6,600 projects under development. The share of trader-developers is approximately 40% (ZIA, 2022; bulwiengesa AG, 2025).

Real estate development is pivotal for achieving core political and societal objectives in Germany because it operationalises policy goals in the built environment. The real estate development sector is responsible for the provision of new housing and achieving climate goals of the building sector (BMWSB, 2025; UBA, 2025). The German real estate industry faces distinct development and transformation pressures that make ESG integration practically consequential rather than merely theoretical. In many regions, substantial development activity is required to expand and modernise housing supply (Destatis, 2025). In parallel, parts of the commercial building stock no longer align with evolving occupier requirements and must be repositioned, refurbished, or redeveloped (Neuhaus, 2022; Rodeck, 2022). All of these processes require ESG considerations and directly shape feasibility, design choices, and value creation logics across the development cycle. Germany's decarbonisation agenda is tightly institutionalised and places the built environment at the centre of implementation. Legally anchored emissions reduction pathways and the national objective of net greenhouse-gas neutrality by 2045 create a clear macro-level direction of travel for the sector. This is reinforced by the revised Buildings

Energy Act (GEG), effective 1 January 2024, which introduces stricter requirements—most notably the 65% renewable energy requirement for newly installed heating systems in relevant contexts (KSG - Bundes-Klimaschutzgesetz, 2019, BVerfG, 2021).

Real estate is the most important real asset class in Germany as over 80% of gross invested capital is invested in real assets (Just *et al.*, 2017). Germany provides a deep and institutionally stable environment for both residential and commercial real assets. It functions as a major and comparatively resilient investment hub, attracting domestic and international capital (Wijburg and Aalbers, 2017; Glunz *et al.*, 2022). However, after years of growth, the German real estate development market has faced a sharp downturn since 2022. Post-pandemic effects, rising credit and construction costs, geopolitical risks, and economic stagnation have caused a steep decline in construction activity, building permits, and overall market performance. Real estate developers central to this study are under heavy pressure, with many forced into bankruptcy (Ryan *et al.*, 2023; Feld *et al.*, 2024).

Germany offers a strong setting to study the interaction between regulatory definitions of sustainability and project-level practice. The EU Taxonomy provides a formalised classification of what counts as environmentally sustainable economic activity (Humphreys, 2020), materially affecting how real estate projects are justified to capital providers and how performance is reported in portfolios (Deloitte, 2021; MSCI, 2021; GRESB, 2022). At the same time, Germany already shows substantial engagement with sustainability across regulatory, practitioner, and institutional spheres with energy standards tightening, sustainability ratings and certification approaches are widely used (Stellmacher *et al.*, 2023; Weinfeld *et al.*, 2023), and public support programmes increasingly prioritise resource efficiency and energy savings (KfW, 2026). Taken together, these features make Germany an analytically rich and policy-relevant case for examining how ESG requirements are translated into measures within real estate development.

1.2.1.2 ESG challenges for real estate development

Real estate development is shaped by a wide range of challenges, including cyclical and macroeconomic dynamics (Rottke and Wernecke, 2002; Nayar *et al.*, 2024), user behaviour (Van Nieuwerburgh, 2023), stakeholder complexity (Caputo, 2013; Martinez and Olander, 2015), cost inflation (Ma *et al.*, 2021; Lederer *et al.*, 2024), technological change (Ocampo

and Schneckenberg, 2022; Naeem *et al.*, 2023; Al-haimi *et al.*, 2025) or demographic shifts (Eichholtz and Lindenthal, 2014; Blaszkke *et al.*, 2024). While these challenges matter for the real estate sector and project delivery, they are often cyclical, largely instrumental, or manageable through established approaches to cost, time, quality, and risk control. Further, these challenges are mostly well-researched. ESG challenges in real estate development, by contrast, are systemic, cross-cutting and under-researched (Li *et al.*, 2021; Drago *et al.*, 2025; Yoo, 2025). They shape both the risk–return profile and the legitimacy of the project itself. They increasingly influence stakeholder expectations and financing conditions because of the sector’s close link to capital markets (Cloutier, 2020; Akomea-Frimpong *et al.*, 2024). Therefore, the growing importance of ESG implies a fundamental, sector-wide transformation that is relevant across all project phases.

The following section discusses selected exemplary challenges within the environmental, social, and governance dimensions to demonstrate the close link between ESG challenges and real estate development. It specifically highlights that real estate development is not only a contributor to ESG issues, but is itself substantially challenged by these ESG issues.

Environmental

Global climate change is described by the Intergovernmental Panel on Climate Change (IPCC) as one of the greatest challenges of the 21st century because it will bring profound changes to the daily lives of all humankind (IPCC, 2007). In the context of the built environment, urban regions are particularly problematic and vulnerable to extreme weather events, as areas of high building density are especially susceptible to the expected increase in heat events, more frequent periods of heavy rainfall, and periodic dry spells (Reusswig *et al.*, 2016). As indicated in **Section 1.2.1**, German policymakers announced the climate goal of carbon dioxide equivalent emissions to be at net zero by 2045 (KSG - Bundes-Klimaschutzgesetz, 2019, BVerfG, 2021). Energy consumption of the German built environment currently accounts for around 35 % of Germany's total energy consumption (dena, 2022). Substantial investments into the built environment are necessary to reduce energy consumption and carbon dioxide equivalent emissions but also have negative effects on the environment. The German real estate sector is responsible for 55.4% of waste production, which is currently neither recycled nor reused in a high-quality manner (Destatis,

2021). The carbon footprint of construction material amounts to 250 million tons of carbon dioxide equivalent emissions per year (Material Economics, 2021).

Social

However, it is not only environmental issues that pose challenges to the real estate industry and underline the need for considering ESG measures, but also social issues that relate to income, health, and well-being. For example, exposure to toxic materials during construction leads to illnesses (Takala, 2016). Furthermore, the construction sector has the highest share of work-related accidents in Germany (Lampert and Ziese, 2005; Dieterich *et al.*, 2020). Discrimination is another point in which the real estate industry can contribute to the social dimension of ESG, as people experience discrimination in the housing market through their ethnicity, gender, religion, disability, age, or sexual identity (FADA, 2020). Even if poverty in developed countries like Germany must be seen in a different light than that in less developed countries, the discussion about poverty plays a role in the public debate (Raddatz, 2022). The unemployed, single people, students, and women are specific groups that are living in relative poverty in Germany (bpb, 2022). The inner cities of the major metropolitan areas have developed into attractive residential locations and as a result the demand for inner-city residential spaces has increased (Gornig and Michelsen, 2015). A supply shortage particularly in urban areas leads to rising rents and prices (Gischer and Weiß, 2007; Koch *et al.*, 2017; Krieger *et al.*, 2021). In many households, the rent burden exceeds the proportion that is considered reasonable for housing costs in Germany (Lebhuhn *et al.*, 2017). Particularly in Germany's urban regions, it is not just pure affordability that is an issue in the housing market, but also the fact that housing is not designed to meet the needs of people with physical disabilities (Dullien and Krebs, 2021; Krieger *et al.*, 2021). Also, for commercial buildings it can be concluded that the available spaces do not meet market demand. Existing commercial buildings, such as offices, hotels, or retail buildings, do not address the needs of tenants and users in terms of digitalisation, innovation, and sustainability (Neuhaus, 2022; Rodeck, 2022). This leads to a further increase in structural vacancy of spaces on the one side and increasing demand for modern and sustainable spaces on the other side (Eisele *et al.*, 2020; Wagner *et al.*, 2022; Young *et al.*, 2023).

Governance

The demand for more residential space and modern commercial buildings that meet the budgets and needs of people and users can also face resistance. In densely populated areas, owners, neighbours, environmental associations, and the entire urban society are affected by these real estate developments – or at least feel affected. This results in increasing resistance to structural changes brought about by the development of new buildings (Hölzel and Krön, 2019). The resistance of external stakeholders to these developments can lead to time delays, cost increases or even the failure of the project in rare cases (Martinez and Olander, 2015; Di Maddolini, 2018). Good governance at the project-level is described as having major influence on the engagement of stakeholders and their trust in projects (Müller *et al.*, 2016). Also, at company-level there is a high need for effective governance of the real estate industry due to its macroeconomic relevance. According to the OECD (2004), corporate governance has implications for company behaviour towards shareholders, stakeholders, and financiers and plays a vital role in underpinning the integrity and efficiency of financial markets. Some control and governance systems are institutionalised by state regulation, some by voluntary associations and institutes (Bienert and Ansari, 2017). Corporate governance has played a subordinate role in the real estate industry for some time, but a rethink has recently taken place. Corporate governance is now regarded in large parts of the industry as a method for efficient corporate management and its monitoring. In the competition for investors, this has become a key factor in recent years (Bienert and Ansari, 2017).

ESG challenges are central to real estate development and therefore to this research project because they reshape what buildings are expected to deliver, not only in environmental performance but also in social outcomes and governance standards across all development phases. ESG challenges cannot usually be addressed with minor upgrades as they require fundamental transformation of the built environment. As a result, ESG challenges change established approaches to projects and directly affect how developments are conceived, designed, financed, delivered, and operated (Fastenrath and Braun, 2018; Pfnür and Wagner, 2018). They also expose shortcomings in the sector's ability to address user- and target-group-specific needs, highlighting mismatches between existing building stock and evolving societal demands. Consequently, integrating ESG measures into the real estate development

process is not an optional add-on but a core requirement for ensuring long-term viability and legitimacy of real estate projects and the built environment.

1.2.1.3 Implications of European ESG legislation for the real estate development sector

ESG gained attention following the publication of the 2005 UN report “Who Cares Wins”. The idea behind the report was to achieve stronger and more resilient financial markets, contribute to sustainable development, raise awareness and mutual understanding of involved stakeholders, and improve trust in financial institutions (UN Global Compact, 2005). As the real estate market is deeply interwoven with the financial market, ESG also has far-reaching implications for the real estate market (Nastansky, 2012; Cloutier, 2020; Cloutier *et al.*, 2021). In the report, ESG was presented less as a concept with measurable criteria but more as a common understanding of guidelines and recommendations on how to integrate ESG-related objectives in corporate activity (UN Global Compact, 2005). Although the UN report identified ESG-related issues, which differed across regions and sectors, there appears to be no consensus on the exact list of issues and their materiality in the context of ESG investing (Matos, 2020).

To achieve climate neutrality by 2050 and decouple economic growth from resource use without negative effects on society and regional development, the EU has established a series of policies known as the European Green Deal. A variety of programmes are included in the plan to lower emissions, support renewable energy, safeguard workplaces, and provide energy-efficient buildings as well as affordable housing (EC, 2020, 2021c). The EU regulations are designed so that companies can support the promotion of sustainability and moral behaviour in the EU by putting the European Green Deal's policies into effect (Pike, 2020; Sabato and Fronteddu, 2020; Dănilă *et al.*, 2022). The EU Taxonomy is considered to be the most comprehensive policy agenda on sustainability within the finance and investment market, making the EU a first mover and forerunner in establishing global ESG standards for market participants (Buchetti *et al.*, 2022; Sipiczki, 2022). As real estate is an important investment vehicle and public real estate investment funds are a main investor for residential and commercial real assets, EU regulations have a major impact on the real estate investment market, according to key market participants (Deloitte, 2021; MSCI, 2021; GRESB, 2022).

The EU Taxonomy prescribes six precise environmental objectives, namely climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control and protection and restoration of biodiversity and ecosystems (EU 2020/852). For real estate development, the EU Taxonomy operationalises these objectives through technical screening criteria that directly shape development, refurbishment, and investment decision-making. In practice, the climate objectives are particularly salient through the activities of construction, renovation as well as acquisition and ownership of buildings. The technical screening criteria translate into measurable energy-saving thresholds depending on the activity. To date, the technical screening criteria focus on the objective of climate change mitigation, while it is requested that no significant harm (DNSH – Do no significant harm) should be caused to any of the other five objectives (EC, 2021a). **Table 1.1** visualises the EU Taxonomy’s focus, in the context of real estate activities, on the environmental objective of climate change mitigation. It becomes apparent that this objective is prioritised across all areas of the real estate sector, whereas the other five objectives are addressed only secondarily as DNSH requirements. It also shows that the DNSH criteria are not relevant to all activities within real estate development.

Table 1. 1: Environmental objectives of the EU Taxonomy for the real estate industry

Activity	Objective	DNSH				
		Climate change adaptation	Sustainable use and protection of water and marine resources	Transition to circular economy	Pollution prevention and control	Protection and restoration of biodiversity and ecosystems
Construction	Climate change mitigation	x	x	x	x	x
Renovation	Climate change mitigation	x	x	x	x	
Acquisition & Ownership	Climate change mitigation	x				

Source: Own illustration based on EC (2021a)

1.2.2 Theoretical context

This study is located academically at the intersection of real estate development research and ESG research, and project-oriented research on implementation and project success. It is therefore positioned within a multidisciplinary field of research. This positioning is

important because the subject of ESG integration in real estate development cannot be adequately understood through one disciplinary lens alone. Real estate development itself has been described as both an independent field of inquiry and a practice-oriented business process that draws on insights from project management, finance, investment, construction, stakeholder management, and urban development (Miles and Wurtzebach, 1977; Healey, 1991; Peiser and Hamilton, 2012).

Within this broad field, the present study is primarily anchored in real estate development research because it focuses on the development process and the perspective of the developers. This anchor is important because the real estate developer occupies a central role in shaping the economic, social, and environmental characteristics of projects through choices made during acquisition, conception, planning, delivery, and market positioning (Robin, 2022; Meijer and Buitelaar, 2023). At the same time, the study goes beyond real estate development research, as it additionally focuses on ESG integration, a field of research that has been mostly debated in finance, investment and organisational practice (Eccles and Viviers, 2011; Cloutier, 2020; Cloutier *et al.*, 2021; Kempeneer *et al.*, 2021). The theoretical context of this study is therefore best understood as interdisciplinary but anchored in the field of real estate development research.

This theoretical positioning helps to clarify why the present study is needed. Although these related fields of research offer relevant insights, they do not yet combine sufficiently to explain how ESG measures can be integrated into the real estate development process from the perspective of German developers and in ways that enhance project success. Existing work has tended to emphasise investment, performance, regulation, or broad sustainability discourse, while the project-level integration of ESG within development practice has remained less clearly articulated. For this reason, the present study adopts an interdisciplinary but process-centric and practitioner-focussed perspective in order to investigate ESG measures in the real estate development process. This positioning provides the basis for the research gap set out in the following section.

1.3 Problem statement

The increasing global focus on ESG factors has garnered significant attention in the real estate development industry and investors are increasingly seeking investment opportunities

that meet their ESG requirements (Ooi and Dung, 2019; Cloutier, 2020; Cloutier *et al.*, 2021). Although the importance of ESG for long-term profitability, resource conservation, and community well-being is increasingly recognised, ESG adoption in German real estate development remains fragmented due to the absence of a standardised and consistent framework for project- and practitioner-focussed integration (Kinzinger and Ouvarova, 2022; Weinfeld *et al.*, 2023; Henger and Voigtländer, 2024; Kadel *et al.*, 2024).

This deficit is reinforced by the absence of a shared conceptual understanding of ESG and its individual dimensions, which leads to divergent interpretations across organisations and sub-markets (Li *et al.*, 2021; Lee *et al.*, 2024; Salzberger *et al.*, 2024). At the project-level in particular, these ambiguities translate into substantial operational complexity. There is no generally applicable ESG objective that can be uniformly applied across projects and development contexts, which complicates the derivation of concrete ESG measures and confuses the mechanisms through which ESG-related benefits are expected to materialise (Kempeneer *et al.*, 2021; Pollman, 2022; ZIA, 2023). This creates uncertainty regarding which ESG measures should be prioritised, how they relate to project success, and how they can be integrated into the development process (Keeris and Langbroek, 2019; Daugaard, 2020; Robinson and McIntosh, 2022). Research is therefore necessary to provide a more in-depth and practice-relevant basis for understanding how ESG measures can be identified, prioritised, and integrated within real estate development projects. Such research is particularly important in the German context, not only because of the significance of the German real estate market within the national and European economy and as a major asset class, but also because ambitious national and European legislative requirements have so far not been translated sufficiently into overarching ESG frameworks for development practice, thereby creating considerable operational uncertainty.

Despite growing research, current literature does not sufficiently answer how ESG should be considered in real estate development. The research problem addressed in this thesis is therefore not only that ESG integration is important in real estate practice, but that the current body of knowledge does not yet explain how ESG measures can be integrated into the real estate development process in ways that enhance project success in the German context. In this context, especially the combination of a process-centric and practitioner perspective appears to not have been sufficiently considered in existing literature. At the theoretical

level, ESG research largely focusses on financial performance and portfolio or company-level integration (Cajias *et al.*, 2014; Hayar *et al.*, 2025; Zheng and Lee, 2025), less on the project-level and the developer perspective. In terms of real estate development however, research tends to focus more on the description of the development process, project delivery and a broad sustainability discourse (Healey, 1991; Peiser and Hamilton, 2012; Türgen, 2015; Meinen and Franz, 2025). Consequently, there remains limited understanding of how ESG measures can be integrated into real estate development projects so that intended ESG benefits are realised, and project success is enhanced.

By proposing a framework for the integration of ESG measures into the real estate development process, this study addresses the identified lack of knowledge that constitutes its central research problem. In doing so, it responds to the theoretical need for a more coherent, context-sensitive, and process-oriented explanation of ESG integration at project-level in German real estate development. Such research is necessary not only to connect currently separated strands of ESG and real estate development literature, but also to provide a stronger conceptual basis for explaining how ESG measures, ESG benefits, and project success are related within the development process. This aligns with the call made by Newell (2023b) urging the real estate sector to transition “*from doing ESG to doing ESG well*” (p. 457).

1.4 Scope of the study

This study focuses on Germany as the empirical context in which ESG-related pressures, regulatory developments, and market conditions shape real estate development practice as outlined in **Section 1.2.1**. From a sector perspective, this research project is concerned specifically with real estate development rather than with the real estate industry as a whole. Broader issues relating to investment and asset management, portfolio performance or construction project management were excluded unless they are directly relevant to real estate development projects. In terms of actor perspective, the study adopts the viewpoint of real estate developers, with particular relevance to trader-developers. While this type of developer is particularly closely intertwined with the ESG-driven finance and investment market and therefore holds special relevance for this research project, other developer types were not considered in this study.

At the analytical level, the study examines ESG integration at the project-level, focusing on how ESG measures can be incorporated into the real estate development process, rather than on the investigation of ESG reporting, valuation, or performance at the company or portfolio level, as has more commonly been the focus of recent research. The outcome focus of the study is project success, specifically the extent to which ESG measures and the resulting ESG benefits can contribute to successful real estate projects. Methodologically, the study is designed as a context-specific qualitative inquiry intended to generate in-depth and practice-relevant understanding within the German real estate development context. Accordingly, it does not seek universal, law-like generalisations, but rather aims to develop analytically grounded insights and a framework with contextual relevance and potential transferability to comparable settings.

1.5 Research aim

The research aims to identify key ESG measures and benefits for German real estate development projects and to establish how the integration of ESG measures into the development process can be achieved. The research will propose a framework comprising ESG measures and recommend how to integrate these measures into the development process to enhance the success of German real estate development projects.

1.6 Research questions

The research questions that arise are:

1. What are the key ESG measures applied to real estate development projects in Germany?
2. What are the key benefits of ESG measures that can be adopted by project practitioners delivering real estate development projects in Germany?
3. How can ESG measures be effectively integrated into the development process of German real estate development projects to enhance project success?

1.7 Research objectives

The specific objectives developed to achieve the aim of the research are:

- To identify key ESG measures that are used in real estate development projects.
- To explore key ESG benefits that can be adopted by project practitioners delivering real estate development projects in Germany.
- To investigate how ESG measures can be integrated into the development process to enhance project success of German real estate development projects.
- To propose and to verify a process-centric and developer-focussed framework for integrating ESG measures into German real estate development projects that enhances project success by linking ESG measures to ESG benefits.

1.8 Structure of the thesis

This chapter outlines the structure of the thesis. *Figure 1. 1* gives a visual representation of the structure.

Chapter One introduces the research project. The chapter comprises an introduction to the research field and the contextual background to the study. The problem statement, research aim, research objectives and research questions are presented. Finally, the chapter outlines the structure of the thesis.

Chapter Two provides a detailed overview of the current literature and is divided into five parts.

Part I discusses the current research on real estate development including the positioning, current scope and methodological debates of the real estate development research. Furthermore, current research on the development process, sustainable real estate development and ESG in the project and construction research is discussed. Finally, an overview of research on project success in terms of ESG is presented.

Part II gives a detailed description of the current research on ESG within the real estate industry. First, ESG in the context of this study is established, then the current scope of research on ESG is presented. Further, the relevance of ESG measures for the real estate

development industry is presented. Current research on ESG integration activities is presented as well.

Part III contains a detailed discussion of ESG measures relevant in the real estate industry.

Part IV discusses key ESG benefits in the real estate development market.

Part V presents the conceptual framework that was built from the findings of the literature.

Chapter Three gives a detailed description of the research methodology. The chapter contains a discussion and presentation of the philosophical underpinnings, research philosophy, respectively paradigm, approach to theory development, research strategy, and finally research design. Methodologically, this thesis adopts a mostly interpretivist, qualitative research design to address the three research questions by first establishing what ESG measures and benefits are perceived as relevant in German real estate development and then determining how these can be integrated to enhance project success. Insights from the literature review informed the study design and data collection. Semi-structured interviews with 20 senior practitioners generated rich, practice-based evidence on ESG measures, ESG benefits and integration, and thematic analysis structured these insights into an initial developer-focussed integration framework, which was subsequently verified and refined through focus groups to confirm the findings and strengthen the framework's practical applicability.

Chapter Four analyses the qualitative findings from the conducted interviews in relation to the research questions of this study. The findings are presented in four themes with subsequent sub-themes and primary codes.

Chapter Five contains a discussion of the four identified themes in connection with the insights from the reviewed literature and interpretation of research findings. The chapter contrasts the research findings with current research and identifies overlaps and new insights to answer the research questions.

Chapter Six contains the development, verification and refinement of an ESG measures integration framework. The chapter outlines the process of the framework development

including the discussion of focus group findings to verify the ESG framework. The chapter gives a detailed description of the proposed framework.

Chapter Seven concludes the main aspects of the research project in light of the research aim. The chapter contains a detailed answer to the research questions. Limitations, conclusion, and contributions are presented along with suggestions for further research in this field.

As shown in the visualisation of the thesis structure below, it becomes clear that the individual chapters of this thesis build upon one another and are logically interconnected (bold line). It also shows that the insights gained from the literature review (*see Chapter Two*) feed into the conceptual framework, which is then taken up again in the research findings (*see Chapter Four*), the discussion chapter (*see Chapter Five*), and the framework development and verification chapter (*see Chapter Six*) (dotted line). Furthermore, it illustrates how the two stages of data collection were developed and justified in the methodology chapter (*see Chapter Three*), namely the semi-structured interviews and the focus groups, are embedded within this study. Additionally, the figure shows how the data-derived themes were used to answer the three research questions of this doctoral thesis.

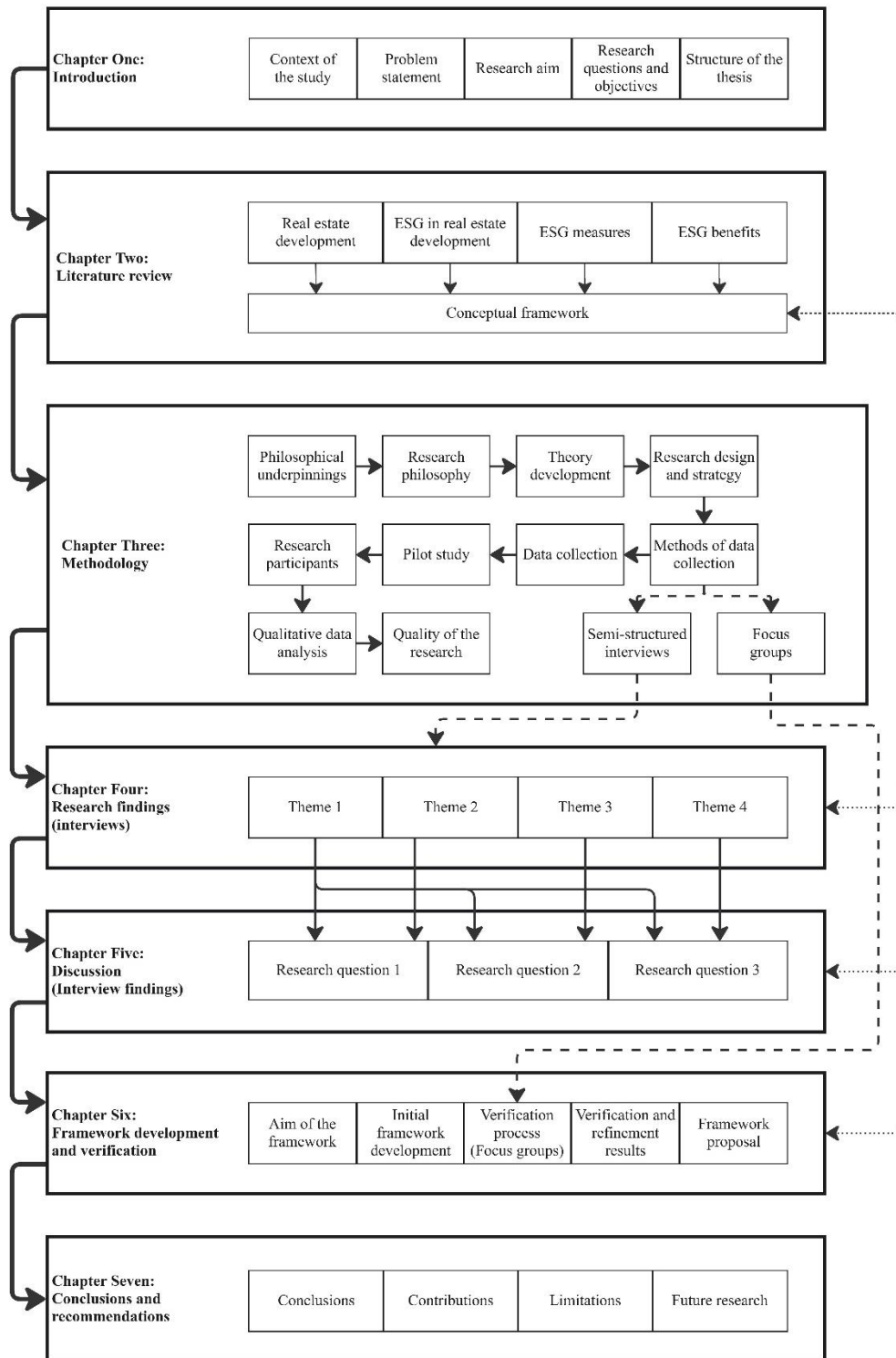


Figure 1. 1: Structure of the thesis

Source: Researcher (2026)

1.9 Chapter summary

This chapter provided an introductory overview of the research project. Its purpose was to introduce the reader to the topic and outline the background of the study in the context of ESG and the real estate industry. Additionally, the problem statement was discussed, highlighting the lack of scientific insight into how ESG measures can be integrated into the real estate development process. Subsequently, the research aim, objectives, and questions of this study were described. The structure of the thesis was outlined and presented visually. The next chapter of this thesis contains the review of current literature on ESG and real estate development.

CHAPTER TWO: LITERATURE REVIEW

This chapter contains a critical analysis of the literature that develops a clear argument about what the published literature indicates is known and not known about the research questions, as suggested by Wallace and Wray (2016). The aim of the literature review is to show understanding of the research field of ESG and real estate development in Germany and their key theories, concepts and ideas, as well as the major issues and debates about these topics (Denyer and Tranfield, 2009). Unlike other academic disciplines, business and management research makes use of a wide range of literature (Saunders *et al.*, 2019). This statement is also valid for research on ESG and real estate development. This is the reason why other research fields such as project management, finance, investment and construction are considered. Following Labaree (2013), the corpus of current theory that has been accumulated regarding the researched issue will be examined. It will be established what theories about the topic of ESG, and real estate development already exist and the relationships between them will be investigated. The key insights identified in the literature review will be presented in a conceptual framework at the end of this chapter. The conceptual framework will illustrate literature-derived themes and the connections among the themes and the research questions. The research questions to be addressed through the literature review are as follows:

1. What are the key ESG measures applied to real estate development projects in Germany?
2. What are the key benefits of ESG measures that can be adopted by project practitioners delivering real estate development projects in Germany?
3. How can ESG measures be effectively integrated into the development process of German real estate development projects to enhance project success?

Part I: Review of Real Estate Development

The first part of the literature review discusses current literature on real estate development. First, the research field will be located, and the current scope of research presented. Next, a detailed overview of current research on real estate development, the real estate development process and related research fields in light of sustainability and ESG will be given. Finally, challenges of ESG and sustainability integration and project success in terms of real estate development will be discussed. The aim of the first part of the literature review is, on the one hand, to develop a foundational and conceptual understanding of real estate development in the context of ESG measures integration and, on the other hand, to generate relevant insights related to the research questions, particularly with regard to the specific characteristics of real estate developers in connection with ESG integration factors and project success. The literature-derived themes developed in this chapter are incorporated into the conceptual framework at the end of the chapter, thereby illustrating both the interrelationships among them and their connection to the research questions.

2.1.1 Real estate development in the context of this study

This section explains the research context relevant to this study, namely real estate development, in relation to the study's research aim. In particular, it seeks to examine how real estate development is defined and viewed in the context of ESG and which themes can be derived in connection with the research questions.

The term real estate development is not defined by law and has been discussed in different ways by several scholars of the field of real estate research. Miles *et al.* (2007) see real estate development as the continual reconfiguration of the built environment to meet society's needs. Leaning on the notes of Medineckien *et al.* (2010) who emphasise the environmental impact of real estate developments and Chau *et al.* (2010) who focussed on the effect of sustainable development projects, Raslanas *et al.* (2012) further point out in their definition the ever-increasing impact of buildings on the environment. Diederichs (1996), however, focusses on the production factors of the development process when defining real estate development and describing how the factors of location, project idea and capital are to be combined with each other in a way that competitive, job-creating and job-securing as well as socially and environmentally compatible real estate objects are created and made usable

on a long-term profitable basis. Other scholars tend to incorporate aspects such as the iterative process (Peiser and Frej, 2008), the multidisciplinary nature, the need for flexibility (Olsson *et al.*, 2015), interactivity (Miles and Wurtzebach, 1977), or life-cycle aspects (Kohlhepp, 2012). It becomes clear that the concept of real estate development can be defined differently depending on the perspective adopted, as well as the situation and context under consideration. Building on Diederichs' (1996) definition—which is widely used, particularly in the German literature (Zimmermann, 2006; Pommer and Herten, 2014; Eberhardt and Klaubetz, 2022), and explicitly incorporates environmental and social aspects alongside a core focus on real estate development—it appears appropriate to place these dimensions at the centre of the present study's conceptualisation. To reflect ESG in a holistic manner in the context of this study, however, the governance dimension must also be added. Moreover, given the research aim of this study, it is equally important to consider real estate development from a process-oriented perspective, including its key processes and stages. Accordingly, in the context of this thesis, real estate development under consideration of ESG aspects and a processual view is defined as follows:

“Real estate development is the interdisciplinary, multi-stage, dynamic and iterative process of combining the factors of location, project idea and capital under consideration of ESG aspects in such a way that competitive, job-creating and job-securing real estate objects are created and made usable on a long-term profitable basis.”

Although real estate development is a significant factor in shaping and planning the built environment (Squires and Heurkens, 2016), it is striking that the nature of real estate development has remained comparatively under-researched (Bushnell and McAllister, 2012) and that knowledge about how real estate developers operate is still limited (Meijer and Buitelaar, 2023). Contrary to common assumptions, real estate developers do not constitute a homogeneous group; rather, they differ substantially in their operational logics and business models (Meijer and Buitelaar, 2023; Mwando *et al.*, 2024). When developer business models are analysed through the lens of revenue generation, three archetypal earning logics can be distinguished: service-developers, trader-developers, and investor-developers (Rottke and Wernecke, 2002).

Service-developers act as agents on behalf of a client—typically an investor—without committing substantial own equity to the development. In contrast, trader-developers

correspond to the classical speculative development actor. They act as interim investors, allocate their own capital to the development process, and realise returns predominantly through the subsequent sale of the completed project to an end-investor. For trader-developers, the post-completion life-cycle performance of the asset is not the primary determinant of success. Investor-developers are best understood as end investors who internalise the development function in order to retain completed projects within their own portfolio. Value creation is thus captured through long-term ownership and operation rather than through an exit at completion (Rottke and Wernecke, 2002; Moorhead *et al.*, 2023; Wyrwoll and Beusker, 2025).

Given that business models and decision criteria differ substantially across developer types (Moorhead *et al.*, 2021), it is methodologically appropriate to focus the analysis on a single developer type when examining the real estate developer perspective. Accordingly, this study concentrates exclusively on the trader-developer model. This focus is justified, first, by market relevance, as trader-developers account for a substantial share of development activity in the German real estate market (Pfnür and Wagner, 2018; bulwiengesa AG, 2025). Second, the trader-developer business model constitutes a critical context for ESG integration research because it structurally separates those who make early design and capital expenditure decisions from those who realise operational ESG outcomes after handover. In the trader model, development success is realised through sale rather than long-run performance, and the post-completion life cycle is not directly success-determining for the developer (Rottke and Wernecke, 2002). Additionally, ESG is frequently operationalised through market pressure making the trader model a particularly revealing setting to study how ESG is translated into development decisions (Fuerst and McAllister, 2009; Qian *et al.*, 2015).

2.1.2 Locating real estate development research

This section discusses the positioning of real estate development within the broader research landscape. In particular, it aims to develop an understanding of where real estate development is situated, which overlaps exist with other research disciplines, and what insights can be derived from this in relation to the research questions.

The development of the built environment and its influence on urban economic and property development is a complex, widely debated subject (Guy and Henneberry, 2000) and is anchored in various research disciplines (Drane, 2012). The research on real estate development has definitional challenges that hinder the delineation of the scope of the research discipline. The undefined body of knowledge, inadequate classification of real estate uses, and weak economic sector positioning among others are aspects that lead to misconceptions of the true boundary of knowledge in society and in academia within the field of real estate research (K'Akumu, 2023). While it remains unclear whether real estate development constitutes an independent research discipline, there is broad agreement that real estate development as such has received limited scholarly attention. Recent research indicates that the developer perspective has been largely understudied, and that key elements of the development process have long remained insufficiently examined (Newell and Steglick, 2006; Geva and Rosen, 2018; Meijer and Buitelaar, 2023).

There are differing views as to whether real estate development is a component of project management, should be equated with project management, or merely draws on project management principles and tools. Because the ideal-typical phases of project management, including initiation, planning, execution, and monitoring and control, closely resemble the phases of the real estate development process, it has often been investigated through a project management lens (Olsson *et al.*, 2015; Tuerger, 2015; Szreder *et al.*, 2019). However, a substantial body of scholarship conceptualises real estate development not merely as a subfield of project management or as equivalent to it, but rather as an independent field of research. Miles and Wurtzebach (1977) argue that real estate development constitutes an interdisciplinary research field, pointing to the close interconnections between financial and valuation literatures as well as to the distinctiveness of the development process. Fisher (2005) takes a similar position by characterising the theory of real estate development as a complex process shaped by multiple drivers and stakeholders, and by emphasising its contributions to numerous academic disciplines. Likewise, the work of Gore and Nicholson (1991), Drane (2013) and Botha *et al.* (2014) provide clear arguments in support of real estate development as a distinct research discipline. At the same time, Botha *et al.* (2014) highlight two complementary perspectives on real estate development: on the one hand, they offer an explicit indication of its disciplinary autonomy and on the other hand, they underline that real estate development is a business process. This perspective appears particularly relevant for the present study, as ESG integration is not intended to be examined solely from

a theoretical standpoint. Rather, the analysis explicitly adopts the practitioner perspective of the developer.

Additionally, the literature provides evidence that, although real estate development can be understood as an independent research discipline, it draws on project management techniques in several key areas—such as stakeholder management (Caputo, 2013), risk management (Fisher and Robson, 2006; Moorhead *et al.*, 2021), the management of uncertainties (Blokpoel *et al.*, 2005; Reymen *et al.*, 2008) and agile project management (Klotschke *et al.*, 2022). In this context, Olsson *et al.* (2015) argue that real estate development is deeply connected to project management because it makes use of its components. Some authors contend, however, that project management is primarily concerned with technical or business-management aspects directly related to the planning and execution of construction works and, therefore, is not necessarily a component of real estate development. Schäfer and Conzen (2007) for instance, suggest that essential components of the real estate development process—such as the generation of a project idea, land acquisition, as well as marketing, letting, and exit—are not considered well enough in project management research. Diederichs (1996, 2003) as well as Schulte and Bone-Winkel (2008), explicitly incorporate project management into their descriptions of the development process, positioning it within the execution or construction phase of a real estate project. Against this background, it appears appropriate for this study to treat real estate development as an independent research discipline, while remaining attentive to its close links with the adjacent fields of finance, investment, and project management. These interdependencies also become evident at the practitioner-level, where real estate development manifests as an interdisciplinary and iterative process involving multiple stakeholders.

2.1.3 Current scope of real estate development research

To understand which debates currently shape research on real estate and what insights can be drawn from them for the present study, this section analyses the current scope of real estate development research.

The process of German real estate development is well researched and investigated from different perspectives. Scholars have different views on the scope of the real estate development process, with some including the entire real estate life cycle, while others

consider only specific phases (Diederichs, 1996, 2006; Schäfer and Conzen, 2007; Kinateder, 2011). While several models of the development process exist, the exact delineation of phases varies among scholars (Kaiser and Weiss, 1970; Barrett *et al.*, 1978; Goodchild and Munton, 1985; Costello and Preller, 2010; Peiser and Hamilton, 2012; Bone-Winkel *et al.*, 2016). A broad consensus could be identified on the project phases including project initiation, project conception, project concretisation, project management, and project marketing (Fisher, 2005; Costello and Preller, 2010; Bone-Winkel *et al.*, 2016).

While the aforementioned scholars have dealt with the research and delineation of the real estate development process, there are other research areas that are currently in the scope of research of the development process. One important area of research, for example, deals with technological innovations that could have an impact on the development process, such as digitalisation, big data, lean management or Building Information Modelling (BIM) (Lapinski *et al.*, 2006; Sun *et al.*, 2015; Ruan *et al.*, 2018). Due to the close link between real estate development and the financial and investment market, it is not surprising that research is also concerned with financing models and instruments that can help improve the financeability of real estate projects (Newell and Sieracki, 2009; Dorfleitner *et al.*, 2017; Montgomery *et al.*, 2018). However, since residential real estate in particular is not only land and building, but also social good, research on the housing market and the regulation of the market to create affordable housing also plays a role in applied research (Aliyu *et al.*, 2015; Baldenius *et al.*, 2020; Kotulla, 2020).

The interactions and relationships between the various internal and external stakeholders in the development process are a further subject of research (Christensen, 2012; Martinez and Olander, 2015; Chan and Oppong, 2017). In this field, stakeholder theory is often used in real estate research to identify relevant actors, classify their interests and power, and explain why development outcomes depend on the interconnected collaboration of stakeholders (Greenley and Foxall, 1997; Agyemang *et al.*, 2025). In real estate these stakeholder groups are developers, designers, contractors, clients, users, suppliers, authorities and the public (Li *et al.*, 2022).

A meta-analysis identified that the topics valuation, housing, and investment and portfolio management are the most researched topics in publications in real estate research.

Remarkably, sustainability played a subordinated role in real estate research publications and ESG research was not even investigated (Hoesli, 2016), although the market for real estate projects aligned with ESG has never been more active (Selch, 2021). Certainly, the different publication dates of these publications need to be taken into account in a relativising manner.

Drane (2012) conducted a literature review on real estate development models and found few studies grounded in direct interaction with developers and related actors. The author concludes that, while development is shaped by conflicting theoretical perspectives, it lacks empirical engagement with practitioners and calls for deeper insight into developer practice. In a follow-up paper, Drane (2013) notes that real estate development has been explored through various theories, often favouring high-level conceptual analysis, while empirical engagement remains underrepresented. As a result, research on real estate development is highly “non-integrated” and fragmented across disciplines such as economics, marketing, finance, and operations. This view is echoed by D’Arcy (2006) and Newell (2023a), who argue that current research has limited practical relevance for the real estate industry. Drane (2013) concludes that, while existing theories draw from standard business models, a distinct, contemporary model incorporating developer engagement is lacking. This reveals a gap: real estate development research inadequately addresses both sustainability and practitioner-level perspectives, with limited practical application overall.

2.1.4 Methodological debates in real estate research

With regard to addressing the research questions of this study, it is important to analyse current methodological approaches used in real estate research. Doing so allows conclusions to be drawn regarding the methodology most appropriate for this research project.

Real estate research is methodologically diverse in principle, but the published record shows a long-standing concentration around positivist paradigms and quantitative designs (Guy and Henneberry, 2000; Levy and Henry, 2003; Tembo and Akintola, 2021; Newell, 2023a). Evidence for methodological concentration is especially clear in journal content analyses. Levy and Henry’s (2003) comparative audit of a sample of leading property journals. They identified that most papers adopted a positivist paradigm. Further they establish that econometric modelling and statistical analyses have been the most conducted methods in

real estate research. This pattern matters because it shapes what is treated as evidence, rigour and contribution within the field. Levy and Henry (2003) explicitly frame the historical shift towards rigorous quantitative analysis as potentially occurring alongside a dearth of qualitative work, and they note that in real estate research quantitative approaches are commonly perceived as objective whereas qualitative approaches are perceived as subjective. In other words, qualitative methods have been less common not because they are inherently unsuitable, but because dominant norms, training pathways, and evaluative standards have strongly privileged variable-based explanation and quantification. More recent evidence suggests increasing pluralism, but still with a quantitative dominance. Tembo and Akintola (2022) find that quantitative approaches dominate overall, yet only a third of publications did not adopt quantitative approaches. They further identify that qualitative and mixed methods become more prominent when in-depth understanding is needed and emphasise that purpose drives methodological choices, indicating that method selection should be justified by the research objective rather than disciplinary habit. Levy's (2006) argument aligns with this point, stating that qualitative inquiry is particularly appropriate when the research aim is to investigate the underlying factors of a phenomenon. Levy (2006) further highlights the limitations of quantitative research, which may fail to capture the complexities of practitioners' perspectives. It is also argued that qualitative methods are especially relevant for theory building around a phenomenon and for bringing research closer to the experiences and interpretations of research participants.

2.1.5 The real estate development process

The real estate development process lies at the centre of this research project. It is therefore necessary to place particular emphasis on the individual project phases and to investigate them with regard to aspects relevant to ESG integration. Especially in relation to the third research question and the research objective of proposing a process-centric and developer-focussed framework, it also appears necessary to examine current visual models of the development process and to assess the extent to which these are suitable for ESG integration.

2.1.5.1 Phases of the real estate development process

The real estate development process and its phases have been discussed widely among scholars from several disciplines. Several models and descriptions of the process have been developed over time. Kaiser and Weiss (1970) described the development process with a

five-stage model that focussed on the land conversion process starting from evaluating the development potential and ending with selling the property. Goodchild and Munton (1985) add the steps of financing and occupancy in their seven-step model to describe the land conversion process. Barrett *et al.* (1978) focus on three main stages with various sub-activities in their process model and name development pressure and prospects, development feasibility and finally, implementation as stages for property development. Bone-Winkel (1994) used the phase model of Barret *et al.* (1978) to develop a cross-situational and strategic model consisting of four main phases. The delineation of the phases of project initiation, project conception, project concretisation and project management has become widespread (Bone-Winkel *et al.*, 2016). The project initiation, sometimes referred as idea inception, is followed by the project conception phase (Miles *et al.*, 2007; Schäfer and Conzen, 2007; Kinatader, 2011). In this phase the project that has been roughly outlined in the project initiation phase is now subjected to an analysis, which enables the project developer to verify the project's feasibility on the basis of detailed data and forecasts. For this purpose, several analyses have to be carried out, including location and market analyses, analysis of the utilisation concept, competition analysis, risk analysis and profit analysis (Miles *et al.*, 2007; Peca, 2009; Bone-Winkel *et al.*, 2016). This phase is also described as feasibility stage or analysis (Fisher, 2005; Costello and Preller, 2010; Peiser and Hamilton, 2012). The successful feasibility study is followed by the first negotiations and decisions in the project concretisation phase. At this point, all actors enter the development process. During the project concretisation phase, the land is secured, the architectural design is conceived, the building permission is obtained, construction services are awarded, negotiations are held with potential tenants, financing is finalised, and other contractual commitments are made. The decision on the realisation of the project is made depending on parameters to be defined, such as financing commitment, occupancy status and award of construction work (Bone-Winkel *et al.*, 2016; Moorhead *et al.*, 2023). This phase of the process is particularly critical because the developer has to deal with enormous costs even before realisation. The conception of a property is fee-intensive but is usually in the final stage before construction of the property has begun (Weiss, 2007).

Simultaneously with the decision to realise the project, project management comes to the fore. This phase of the development process includes the execution of the concept. In concrete terms, this means that the previously prepared plans are executed through the construction of the property (Goodchild and Munton, 1985; Peca, 2009). The developer

changes from initiator to builder of the property. During the project management phase, the developer assumes the role of the active and influential builder, who makes decisions, continues to negotiate contracts and concludes them. Changes to the concept and progress of the project are the responsibility of the developer (Bone-Winkel *et al.*, 2016). It is during this phase of the real estate development process that the main costs are incurred (Kinateder, 2011).

The project marketing phase should not be regarded as the final chronological phase. Rather, it is to be considered and tracked over the entire course of a real estate development. The first steps towards project marketing are already taken at the start of the project, when the project idea, which is always related to an economic exit, is drafted (Miles *et al.*, 2007; Peca, 2009; Kinateder, 2011). A real estate project is completed when the construction of the property has been completed, the use has been transferred to the end user, the entire property has been sold and the financing has been settled (Isenhöfer, 1999; Bone-Winkel *et al.*, 2016).

After having discussed the phases of the development process, it becomes evident that the development of real estate projects is a complex task that requires interdisciplinary skills and the legwork of several professions. Further, it becomes apparent that real estate development extends well beyond a narrow project-management logic. The development process spans upstream and downstream activities—from site acquisition and project conception through financing and marketing to delivery—such that it is more appropriately conceptualised as an end-to-end value creation process rather than merely the management of project execution (Roulac *et al.*, 2006; Gehner and Peek, 2009; Bulloch and Sullivan, 2010).

However, it also becomes clear that, in the classical description of the development process, the consideration of sustainability or even ESG objectives plays no role, as can also be observed in the work of Silvius and Schipper (2014) and Martens and Carvalho (2017).

2.1.5.2 Visualisation of the real estate development process

To systematise and describe the complex processes of real estate project development, various phase models are used (Kurzrock, 2011). Both scholars, and practitioners have found it natural and useful to produce diagrams for the development process (Fisher *et al.*, 1999).

While several types of models exist (Goodchild and Munton, 1985; Healey, 1991), the complexity of the development process can be best unpacked into its constituent events with event-sequence-models, as these models take a pragmatic approach to characterising the development process. In general, these are descriptive models that break down the processes of real estate development into individual ideal-typical phases. They are very close to the traditional flow charts of production and service processes, in which the production of a product or the creation of a service takes place in several successive steps (Bone-Winkel *et al.*, 2016).

A typical event-sequence models that shows analogy to a fee structuring system of architects and engineers is the model of Diederichs (2003) (see **Figure 2. 1**). It presents six phases of property development starting from the project kick-off ending with the kick-off for a new project. Interestingly, this model covers the usage phase, which is not directly covered by the business model of the trader-developer. However, incorporating this phase highlights the developers' indirect responsibility for the operational phase.

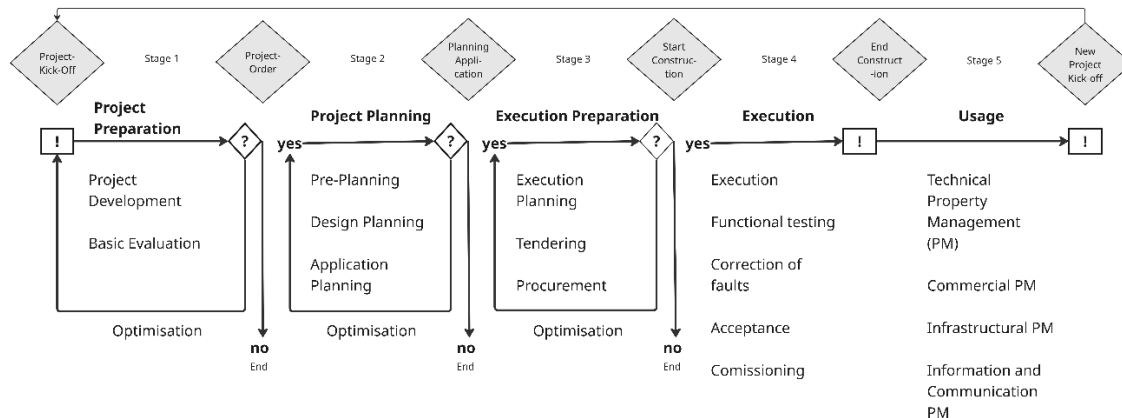


Figure 2. 1: Real estate development process and construction-project management

Source: Translated from Diederichs (2003)

Another explicit event-sequence model is the one proposed by Schulte and Bone-Winkel (2008) as presented in **Figure 2. 2**. It is particularly well suited in the context of this study because it shifts attention away from the operational execution of planning and construction and instead places the developer and the core decision points of the development process at the centre. Notably, the model incorporates cross-phase activities such as project and plot securing and project marketing, thereby responding to the critique in the literature that real

estate development is not a strictly linear sequence of discrete steps. In practice the process is rather less linear and more often an iterative and multi-layered process that requires overlapping activities, parallel coordination across phase and continuous re-definitions (Olsson *et al.*, 2015).

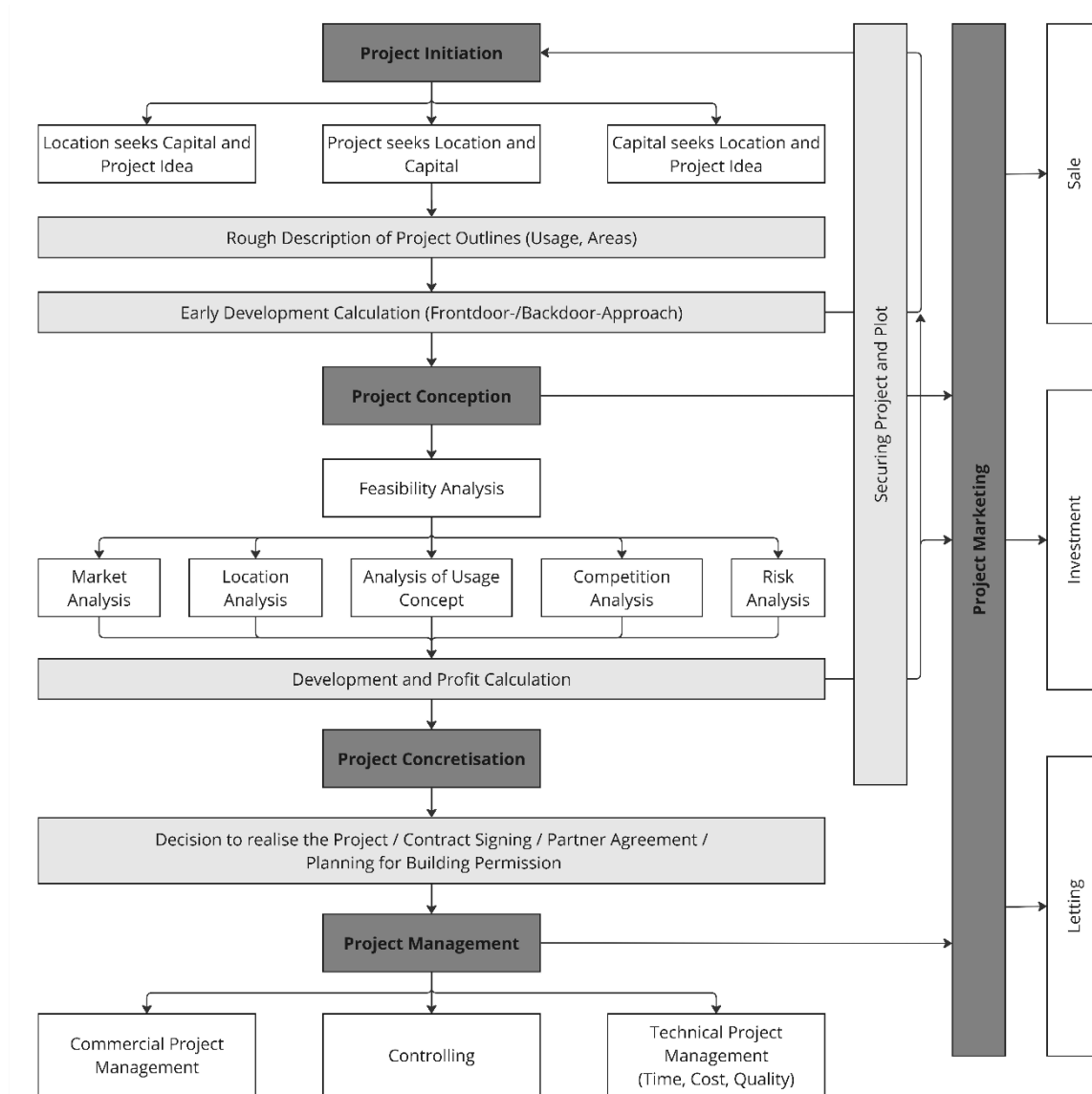


Figure 2. 2: Event-sequence model of the development process

Source: Translated from Schulte and Bone-Winkel (2008)

2.1.6 Sustainable real estate development

Now that the fundamentals of real estate development in the context of the present study have been analysed, this section aims to derive insights from the research on sustainable real estate development with regard to ESG measures integration.

Current theory on real estate development is considered outdated and in need of revision to reflect contemporary industry dynamics, including emerging factors like ESG (Drane, 2012; Newell, 2023a). However, recent years have seen studies aiming to modernise development practices. Rivière *et al.* (2013) analyse the development process of a sustainable town, examining networks among developers, contractors, and asset managers. Their findings suggest aligning urban objectives with environmental issues is key to sustainability. Yet, the relevance to the general development process is limited due to the specificity of the context. Li *et al.* (2009) propose a method for evaluating sustainable urban development in a Chinese city, using indicators that partially overlap with ESG. However, their focus is on predicting urban sustainability levels, not development processes. Similarly, Yan *et al.* (2018) offer a framework for assessing sustainable urban performance in China, focusing on resource use and welfare. While relevant for sustainability, its conclusions are not easily transferable to the German real estate market. Nonetheless, they highlight the importance of balancing natural resources, environmental concerns, and stakeholder interests. Song (2011) provides theoretical insights on sustainable development via the Triple Bottom Line, emphasising ecological city construction, though with limited relevance for real estate development processes. To address the discussion of value effects through sustainability incorporation of real estate, Zavadskas *et al.* (2017) present a value assessment tool for determining market values of sustainable real estate. Albeit this study does not deal with real estate development, the inclusion of sustainability aspects in the valuation is a precious insight into the identification of ESG measures. Regarding decarbonisation targets within the European commercial real estate sector, Hirsch *et al.* (2019) propose a framework for decarbonising and reducing taxonomy-risk of real assets. Even though decarbonisation is a crucial component in achieving climate targets and holds significance for ESG considerations in the real estate industry, this framework does not encompass a comprehensive ESG assessment of real estate assets. Furthermore, the application of this framework is more related to portfolio and company-level, and it pertains less to real estate projects or even the development process. In their research on ESG in real estate management, Keeris and Langbroek (2019) propose benchmarking to be a useful tool for improving the performance of real estate organisations in terms of ESG. They argue that the best operationalisation of ESG performance improvements is still undiscovered and go on to state that this lack is a burden for the implementation of ESG in organisational processes – a gap possibly linked to Drane’s (2012) observation that development models often lack practitioner input.

To understand why real estate organisations, adopt sustainability practices in their business operations, often institutional theory is used. The key concept of this academic theory in the context of real estate development is that developers respond not just to market prices, but also to coercive, normative and mimetic pressures (DiMaggio and Powell, 1983; Remoy *et al.*, 2025). Coercive pressure arises when powerful stakeholders, particularly governments or regulatory authorities, possess the capacity to impose rules, requirements, or sanctions, for instance in relation to sustainability practices (Berrone *et al.*, 2013). By contrast, normative pressure stems from socially constructed obligations, expectations, norms, and standards that shape appropriate organisational behaviour (Scott, 2013). This form of pressure is often reinforced through professionalisation processes within specific occupations, including formal education, training, and professional networks (DiMaggio and Powell, 1983). Mimetic pressure occurs when organisations imitate dominant practices or norms within their institutional field. When firms face uncertainty or have limited understanding of their environment, they frequently model themselves on perceived successful peers, assuming these organisations possess superior knowledge or capabilities (Colwell and Joshi, 2013). Organisations may also engage in imitation for competitive reasons, such as adopting sustainability initiatives or seeking to improve efficiency and reduce operational costs (Latif *et al.*, 2020). Perera and Mensah (2019) argue that sustainability in the real estate development process should be conceptualised through an institutionalist lens, according to which sustainability is socially constructed, problem-driven, and shaped by agency, values, power relations, and contextual uncertainties. On this basis, they contend that sustainable real estate development cannot be operationalised through fixed criteria alone, but requires stakeholder participation, consensus building, and continuous social learning across the development process, making it an incremental rather than a one-off outcome.

Although only a fragment of sustainability research in real estate development has been discussed, it is clear that Drane's (2012) critique of outdated models holds only partially true. Over the past decade, the development process has increasingly adapted to market dynamics, especially sustainability. Recent studies underline the importance of aligning project goals with environmental priorities and integrating sustainability early. Still, academic focus remains on business models, urban sustainability, and construction, with

limited attention to the development process itself (Nosratabadi *et al.*, 2019). Winch *et al.* (2023) reinforce this, noting significant research on sustainability in projects but limited work on managing it to support sustainability transitions.

In the further course of this study, the discussion on sustainability will be extended to the related research fields of project and construction management.

2.1.7 Sustainability and ESG in project and construction management

As ESG in real estate – particularly in real estate development research – remains understudied (Kempeneer *et al.*, 2021), it is crucial to expand the focus to include project and construction management, both key elements of the development process, as has been outlined.

Project management has long been recognised as essential to project success (Munns and Bjeirmi, 1996), and integrating sustainability into it marks an evolution in practice (Kyriakogkonas *et al.*, 2022). Yet, effectively managing sustainability in projects remains at an early stage (Armenia *et al.*, 2019; de la Cruz López *et al.*, 2021), despite growing academic interest (Chawla *et al.*, 2018; Armenia *et al.*, 2019). Research in sustainable project management focuses largely on environmental factors, while social and governance dimensions are underexplored (Marcelino-Sádaba *et al.*, 2015). Marcelino-Sádaba *et al.* (2015) also note that criteria for defining sustainable projects and processes remain unspecified. They call for further research into integrating sustainability into project processes, such as the life cycle. Kim and Chang (2022) highlight the underperformance of ESG at the project-level and propose a construction project-level ESG model to enhance ESG practices in the construction industry. Their approach emphasises integrating ESG from the outset to achieve sustainability. However, this research overlooks the real estate developer's perspective. In their study on ESG metrics in architecture, engineering, and construction firms, Zhang *et al.* (2024) also differentiate between ESG measures at the organisational level and those applied at the project-level. They emphasise that ESG systems at the organisational level have limited applicability to the project-based context. Therefore, this study examines ESG metrics to assess ESG requirements and contractor performance in architecture, engineering, and construction projects. Although this study focuses solely on the Chinese context and is very specific to the fields of architecture, engineering, and

construction, several important insights can be drawn, as the authors argue that little is known about how to assess practices that implement ESG in projects and that current measures tend to refer more to other areas such as sustainability and corporate social responsibility at the organisational level but not specifically to ESG at the project-level. The indicators identified by Zhang *et al.* (2024) will be further examined in the subsequent sections of this work (*see Sections 2.3.4-2.3.6*).

Moreover, with regard to construction, a guideline for the construction of climate-adapted buildings has been formulated at the federal level in Germany (Fahrion *et al.*, 2019). The study provides practical application guidelines for climate-adapted construction in Germany. However, the manner in which the actionable recommendations highlighted in the study are to be integrated into the development process is not delineated. Sabini *et al.* (2019) identified that, through the increase of theoretical work in the field of sustainable project management, the field has become fragmented, leading to undermining a steady and consistent development. Therefore, they suggested answering why sustainable business practices should be adopted in projects, what impacts sustainability has on traditional project practices and, lastly, how sustainability is embedded in project practices. They conclude that sustainability is a value-based concept and therefore values held by practitioners will be influential in achieving sustainable project management. To create a framework for integrating ESG into development, it is essential to consider both these overarching questions and the value orientation of practitioners, as suggested by Sabini *et al.* (2019).

2.1.8 EU Taxonomy and real estate development

In recent years the implications of the EU Taxonomy to the construction and project management industry gathered significant attention in scholarly debates (Norang *et al.*, 2023; Brabec and Macháč, 2025). The EU Taxonomy shifts sustainability from a largely voluntary ambition into a matter of finance, legitimacy, and project governance. In real estate, the taxonomy is increasingly shaping how firms present projects to investors and how they justify whether developments can be considered environmentally sustainable. The environmental objective of climate change mitigation has the strongest influence on the real estate and construction industry (Cheema-Fox *et al.*, 2025), which is not surprising given that this objective was also prioritised within the taxonomy in the context of the real estate sector as already outlined in *Section 1.2.1.3*. Koch *et al.* (2023) show that the taxonomy is

already prompting firms in the building and real estate sector to formalise climate targets, document environmental performance more systematically, and adapt business practices to external expectations. Similarly, Norang *et al.* (2023) find that stakeholders in construction and property expect the taxonomy to affect the sector significantly, while also reporting high levels of uncertainty and confusion around its practical interpretation and implementation.

A further major implication is the growing technical and organisational burden placed on developers. The screening criteria of the EU Taxonomy require stronger internal coordination, more reliable project data and robust reporting processes. This also strengthens the role of life-cycle thinking in project design, since whole-life environmental assessment and embodied-carbon measurement are becoming more central to demonstrating taxonomy aligned sustainability performance in buildings (Lützkendorf and Balouktsi, 2022; De Wolf *et al.*, 2023).

The circular economy, as one of the five DNSH criteria of the EU Taxonomy, is of particular importance in the economic context of the real estate and construction sector. This sector is regarded as a top priority in the transition to circular economy due to its significant ecological footprint (Wuni, 2022; Yu *et al.*, 2022). Recent research suggests that, in the built environment circularity should be understood not merely as improved waste management, but as a project-based and life-cycle-oriented approach to circular construction in which buildings are conceived as temporary repositories of materials whose components can later be recovered, reused, repaired, or repurposed (Ambituuni *et al.*, 2025). To achieve circularity objectives, the integration of certain circular economy principles throughout the development process is required. At the same time, implementation remains constrained by limited practical understanding among stakeholders, complex supply chains, financial and organisational barriers, insufficient expertise in circular materials and methods, and fragmented regulatory standards. This explains why circularity in construction is not yet widely implemented (Rao *et al.*, 2025) and have so far failed to gain broader traction (Cruz Rios *et al.*, 2021).

2.1.9 Challenges in ESG and sustainability integration

Now that the key insights regarding ESG and sustainability in relation to real estate development have been established, this section proceeds with an analysis of the challenges

associated with these topics. This is particularly relevant addressing the third research question for this research project, as key insights into ESG measures integration can be derived.

Besides recognising that the attainment of sustainability is impeded by research ambiguity, project-specific factors also pose obstacles to its successful implementation and integration, as sustainability considerations in projects can be seen as counter-objective to conventional project management in terms of achieving short-term economic profitability (Marcelino-Sádaba *et al.*, 2015). In the project management literature, sustainability is a transversal aspect to be incorporated into the traditional project management functions (de la Cruz López *et al.*, 2021). Carvalho and Rabechini (2017) add to this point by stating that sustainability objectives such as social and environmental considerations are competing objectives to the economic objective of projects. Not only can project objectives and ESG objectives conflict, but the ESG pillars can also be in conflict with one another. Not only can project objectives and ESG objectives conflict, but the ESG pillars themselves may also conflict with one another. In a study that also examines the real estate industry in depth, Yusifzada *et al.* (2025) describe trade-offs within ESG itself and find that environmental and social factors often cannot be fully reconciled. From a paradox theory perspective, traditional project objectives and ESG objectives are not simply complementary, but often simultaneously desirable, interdependent, and conflicting. It is argued that progress in one domain may undermine another, so organisations face persistent tensions rather than problems that can be permanently solved. Paradox theory suggests that real estate developers should accept and work through these tensions in a manner, balancing competing demands over time. In this view, the conflicting objectives of ESG are a normal and enduring feature of responsible management, and long-term success depends on continuously engaging with these contradictions rather than denying them (Hahn *et al.*, 2018; Luo *et al.*, 2020).

While increased costs are the leading barrier for sustainable project management (Walker and Brammer, 2009), lack of expertise, communication, interest, and government support (Hwang and Tan, 2012), and pre-construction constraints, managerial constraints, and legislative constraints, as well as financial and planning constraints (Karji *et al.*, 2020) are further hindering sustainable project management in real estate development. Ochieng *et al.* (2014) add to this point from the perspective of sustainable construction as they identify key

barriers to sustainability integration. They argue that costs are the main barrier for the implementation of sustainable construction. Further, a lack of considerations from client and stakeholders, insufficient knowledge and skills relating to sustainability, insufficient regulations, resistance to change, and cost benefit for sustainable building have been identified as key barriers.

One argument that is used in particular in practice to argue against the integration of sustainability measures is the additional expenditure required for exploiting the benefits of sustainability in projects. The lower operating costs made possible by sustainability and ESG measures are offset by higher project planning costs. The additional costs vary depending on the requirements and the market and are estimated by different researchers and companies to be between 1.4% and 8% in real estate projects (Kats *et al.*, 2003; Lucuik *et al.*, 2012; Drees & Sommer, 2013; Steven Winter Associates, 2014). According to Bienert (2016), regulatory environment and energetic building quality must be taken into account when comparing additional costs of sustainability measures in real estate projects in Germany. The costs of sustainable measures are considered to be the main potential barrier for the implementation of sustainability. In particular, the increase of first costs associated with sustainable building is a major barrier for developers to pursue sustainability objectives (Lapinski *et al.*, 2006). At this point, a paradox emerges in the current research concerning sustainability in project and construction management. While concerns about incorporating sustainability objectives due to cost-related factors persist, there is a counterargument suggesting that sustainability can lead to improved project delivery (Ochieng *et al.*, 2014).

2.1.10 Real estate development project success in terms of ESG

The third research question of this study is fundamentally concerned with how project success can be enhanced through the integration of ESG measures. To answer this question, however, it is first necessary to establish what project success means in the context of real estate development and ESG. The theme derived from this section constitutes a key insight for addressing the overall research aim.

Cost, time, and quality have long formed the “iron triangle” of project success (Atkinson, 1999). However, the definition has expanded to include factors such as client satisfaction, value generation, customer objectives, and stakeholder engagement (Baccarini, 1999;

Mohamed, 2009; Keeys and Huemann, 2017; Rani *et al.*, 2021). Aside from criteria that can be crucial for project success in general, scholars also emphasise that each project must be considered individually, and project success criteria should be tailored to the specific characteristics of each project (Kothandath, 2018). In this manner, a successful project can be described as a project that has attained success in meeting the overall financial or development objectives set by the project's developer or stakeholders (Satankar and Jain, 2015). To achieve this, these objectives should be identified and determined by stakeholders at the project's initiation. Similarly, the involvement of stakeholders in the assessment of project success is essential, as the definition of project success may vary among different individuals, groups or organisations (Shenhar *et al.*, 2001). From a paradox theory perspective, these differing stakeholder conceptions of project success reflect performing paradoxes, in which multiple legitimate but competing expectations of project success must be pursued simultaneously (Shi *et al.*, 2016). In real estate development, financial return, delivery performance, ESG outcomes, user value, and broader stakeholder legitimacy may all represent valid success dimensions, even though prioritising one may undermine another (Smith and Lewis, 2011; Hahn *et al.*, 2014).

While extant research on project success has primarily centred on construction and project management (Chan *et al.*, 2004; Satankar and Jain, 2015; Rani *et al.*, 2021), it appears inadequate for the purposes of this study, as key project phases, such as financing, letting, and exit strategies, have been notably excluded from the perspective of construction and project management deliberations. Focusing solely on construction limits the understanding of success in real estate development. Fisher and Robson (2006) identify risks to success in areas like letting markets, rents, investment yields, procurement costs, site conditions, planning permissions, and financing – underscoring that real estate project success extends beyond construction. It depends on all development phases. Considering both short-term and long-term performance of project success, Erdem and Ozorhon (2015) identify attractiveness of project location, level of contribution to business value, accuracy of cost estimation, level of innovativeness, and effectiveness of cost control as the most important determinants for real estate project success. Flyvbjerg (2009, 2014, 2017) argues that project success is typically defined as projects being delivered on budget, on time, and with the promised benefits. When looking at project benefits from the perspective of the real estate developer, profit maximisation (Laning, 1978), economic growth (van der Krabben and Boekema, 1994), urban renewal and conservation (Lai and Lorne, 2019), and meeting housing demands

(Gruis and Nieboer, 2004), among others, are benefits associated with the project success of real estate development.

After having established that the project success of real estate projects relies on the entire real estate development process, the research aim of this study prompts the inquiry into the extent to which considerations of ESG and sustainability play a role in project success. In this context, Kyriakogkonas *et al.* (2022) assert that traditional characteristics of project success fall short in considering sustainability or ESG issues. This is also emphasised by de la Cruz *et al.* (2021) with their statement that merely adding sustainability aspects to existing project management processes such as integration, scope, time, and costs must be abandoned. They call for sustainability to be a key management function in order to achieve sustainable projects. Again, from a paradox theory perspective, it can be argued that rather than treating sustainability as an additional criterion added to existing project success evaluations, that project success must be conceptualised as the ongoing management of tensions that persist in a real estate project across stakeholder groups, temporal horizons, and performance domains. So ESG can be perceived as an additional objective in terms of project success (Hahn *et al.*, 2014; Van der Byl and Slawinski, 2015).

Based on Flyvbjerg's (2009, 2014, 2017) conceptualisation of project success, it can be argued that success in real estate development entails not only the delivery of promised ESG benefits, but also the capability to manage the paradoxes through which such benefits are pursued. In this sense, project success involves sustaining attention to economic and ESG objectives simultaneously, even where immediate business benefits are uncertain or where these objectives cannot be fully aligned (Smith and Lewis, 2011; Hahn *et al.*, 2014; Sabini and Alderman, 2021).

Part II: Review of ESG in the real estate development sector

The second part of the theoretical literature review discusses relevant research in the field of ESG in the real estate development sector. First, the current scope of ESG research and the relevance of ESG integration will be discussed. Then, current research on real estate considerations in the real estate development sector will be presented and current knowledge on ESG integration to business process will be outlined. The aim of the second part of the literature review is to develop a foundational and conceptual understanding of ESG in the context of real estate development. In particular, this section seeks to elaborate on the nature of ESG within the research context and to identify the ESG integration factors most relevant to the real estate industry. The literature-derived themes developed in this chapter are incorporated into a conceptual framework at the end of the chapter, thereby illustrating both their interrelationships and their connection to the research questions.

2.2.1 ESG in the context of this study

In this section, the second research field, namely ESG, is established in the context of this research project. In particular, the aim is to develop a definitional understanding of ESG in real estate, which will serve as the foundation for the subsequent discussion.

The term sustainability dates back over 300 years and was first described in 1713 by von Carlowitz in the work “*Sylvicultura Oeconomica*” in the context of forest management. On the political level, the term “sustainable” was first introduced by Meadows *et al.* (1972). Elkington proposed the triple bottom line concept in 1998. The concept indicated that the results of a business should be measured in terms of environmental, economic, and social considerations (Elkington, 1998). When it comes to a definition of ESG, a debate in both practitioner and academic spheres is ongoing. However, the search for a uniform definition of the term is superfluous as argued by Pollman (2022) because the ESG was coined without precise definition and cannot be viewed as fixed concept. This view is supported by further scholarly work (Eccles and Viviers, 2011; Hill, 2020; Billio *et al.*, 2021; Li *et al.*, 2021). Schanzenbach and Sitkoff (2020) even argue that “*ESG investing resists precise definition*” (2020, p. 42) while others remain vague defining ESG “*as an investment concept for evaluating the sustainable development of enterprises [...]*” (Li *et al.*, 2021, p. 1). Eccles *et al.* (2020) hold that ESG, like sustainability more generally, is a socially constructed phenomenon and thereby provide an argument for the different use of ESG. This is supported

by Schanzenbach and Sitkoff (2020) and Hayat and Orsagh (2015) referring to the subjectivity of ESG and pointing out the contextual nature of ESG factors, which is also emphasised by Bassen and Kovács (2008). Schanzenbach and Sitkoff (2020) point out the ambiguity of the term ESG, as it refers to collateral benefits on the one hand and to the improvement of risk-adjusted returns on the other hand. ESG investing for moral or ethical reasons or to benefit third parties is considered as collateral benefits ESG, whereas ESG investing for risk and return benefits is risk-return ESG.

Although it is argued that both business and academic literature lag behind a definitional attempt (Bassen and Kovács, 2008), some approaches to a definition have been made (Harper Ho, 2016; Boffo and Patalano, 2020; Cloutier, 2020; Matos, 2020). In all these explanations, ESG is understood as a risk-mitigation strategy that focuses on achieving long-term financial returns or long-term value creation, regardless of the research profession from which ESG is viewed. When it comes to real estate development, Oebbecke (2021) considers ESG in relation to the EU regulations. Oebbecke (2021) describes ESG as superstructure of EU regulations with the aim to increase low-emission and emission-free buildings and infrastructure by 2050. In the work on measuring ESG criteria, Lakenbrink (2021) also refers to the EU regulations when describing ESG in the German real estate industry. Norang *et al.* (2023) support this view in pointing to the close link between the EU regulations and ESG by highlighting that the EU Taxonomy takes voluntary ESG disclosure a step further.

The preceding discussion on the various definitional attempts to delimit the concept of ESG provides essential insights that lead to a working definition of ESG in the context of this scientific work. Following the original idea of ESG in the UN report, it can be stated that ESG and the real estate industry are closely connected, not only because the real estate industry is interwoven with the financial and investment market, but also because the real estate industry makes a significant contribution to ESG-related issues and is also affected by them. When developing a working definition of ESG for German real estate project development, the environmental objectives of the EU regulations and the identified economic activities should be considered, as these define the scope of application of the EU regulations for the European, and thereby German, real estate industry. But delivering real estate projects that consider ESG factors goes beyond mandatory measures. It is more about delivering real estate projects that can generate sustainable and long-term values for the

developer and involved stakeholders through incorporating ESG measures. Based on these insights, ESG in the context of this study is defined as follows:

“ESG in German real estate development refers to the integration of environmental, social, and governance considerations into the development of real estate projects in order to ensure regulatory alignment and to create sustainable, long-term value for developers and stakeholders.”

2.2.2 Current scope of ESG research

After establishing the definitional framework, this section aims to analyse how ESG has been examined in previous research and what insights can be derived from it in relation to the integration of ESG measures in real estate development.

Despite increasing attention from academia and practice, ESG research in real estate – particularly development – is still in its early stages, even as the number of sustainable buildings rises (Lee *et al.*, 2024). Regulatory and investor pressure has shifted corporate attitudes, leading more firms to adopt sustainability strategies and disclose ESG data (Xie *et al.*, 2019; Aldowaish *et al.*, 2022). Once voluntary, ESG implementation is moving towards regulatory enforcement (Robinson and McIntosh, 2022).

While sustainability research increasingly includes all three ESG pillars, the environmental aspect still dominates (Da Cunha Bezerra *et al.*, 2019). This focus is seen among investors and practitioners alike (Kady, 2021; Global Data, 2022). There is a consensus among scholars that environmental aspects have received the most attention from both the real estate industry and ESG research (Lee *et al.*, 2024). Yet, some studies point to growing attention on social criteria (Henisz *et al.*, 2019) contradicting others that report limited inclusion of social aspects (Marcelino-Sádaba *et al.*, 2015; de la Cruz López *et al.*, 2021; Dumrose *et al.*, 2022). Also, Zheng and Lee (2025) and Hayar *et al.* (2025) found a positive influence of social and environmental measures on the performance of real estate investment trusts or real estate equities. However, such findings – largely at fund or company-level – cannot be directly translated to project-level dynamics. In the German context, ESG is acknowledged in real estate, but the social dimension remains underrepresented, as argued in a study of

HTW Berlin and CC PMRE (2023). Homagk *et al.* (2023) addressed this gap by developing a toolbox for integrating social criteria into residential real estate projects, while a full ESG consideration was not aimed at.

Similarly, the governance dimension of ESG is not fully assessed in corporate activity and real estate projects, as suggested by Henisz *et al.* (2019), de la Cruz López *et al.* (2021) and Robinson and McIntosh (2022). Henisz *et al.* (2019) argue that ESG components are intertwined and must be addressed holistically – particularly in frameworks aimed at German real estate development. Both scholars and practitioners prioritise different ESG aspects, with social and governance issues still underemphasised. Lee *et al.* (2024) conclude that social and governance aspects are not given equal research attention in the real estate market. They call for increased awareness and integration of these aspects to industry practices.

Financial performance remains a core focus in ESG research across banking, finance, and real estate (Cajias *et al.*, 2014; Zhao *et al.*, 2018; Bătae *et al.*, 2020). Meta-analyses confirm positive links between ESG factors and financial outcomes, especially on investment and portfolio level (Hayar *et al.*, 2025; Zheng and Lee, 2025). Widyawati (2020) highlights ESG as a sustainability proxy in socially responsible investment but points to a lack of transparency and consistency in ESG metrics. Daugaard (2020) stresses the importance of human factors in ESG performance, echoed by literature on corporate governance and ESG (Aluchna and Roszkowska-Menkes, 2019; Yoshikawa *et al.*, 2021; Buchetti *et al.*, 2022). Studies also show that ESG implementation is influenced by firm size and resources, as argued by Drempetic *et al.* (2020), as well as location (Prakash and Potoski, 2014; Garrido *et al.*, 2020). The importance of location is also highlighted by Arocena *et al.* (2021), as they argue that the level of environmental awareness of countries is associated with the development of social expectations, regulations, and policies that shape the arena for environmental and nonenvironmental matters and, further, the societal values influence behaviours and choices (Arocena *et al.*, 2021). They conclude that managers from countries with different degrees of environmental awareness may show differences in their commitment to addressing environmental concerns. The EPI (Environmental Performance Index) is a well-known index for measuring and comparing the environmental performance of countries through environmental indicators (Oțoiu and Grădinaru, 2018).

Following the assumption of Arocena *et al.* (2021) that a higher EPI value is associated with higher levels of environmental awareness, the environmental awareness of Germany is relatively high as the EPI ranks Germany in thirteenth place out of 180 countries, leading to a higher public demand for environmental safeguards and more intense remedies to environmental problems. Further, Arocena *et al.* (2021) conclude that companies located in countries with a higher environmental awareness obtain higher rewards from environmental behaviours in terms of achieving higher prices for sustainable products, reduced margin requirements from investors, government rewards, subsidies for environmental initiatives, and reduced operating costs. Following this argument, the benefits for adopting ESG measures in Germany can be significantly high due to the high environmental awareness in the country. But it is not only the consideration of countries that is important in understanding the ESG performance of companies. While ESG research is often conducted in cross-sector surveys, Cajias *et al.* (2014) argue, by drawing on previous work by Waddock and Graves (1998), Chand (2006) and Porter and Kramer (2006), that focusing research on a specific sector such as real estate is crucial as the sector is a key variable for ESG performance. As this present study exclusively focuses on the German real estate development market, the criticism raised by Cajias *et al.* (2014) is explicitly addressed. Additionally, it was identified that the ownership structure of organisations appears to shape ESG integration (Qasem *et al.*, 2022; Hong and Rosli, 2024).

ESG research has largely focussed on corporate-level analysis, often overlooking practitioner perspectives. This is problematic given project managers' struggles to grasp sustainability's relevance (Kyriakogkonas *et al.*, 2022). Thus, there is a notable gap in practitioner-grounded ESG research.

Newell (2023) frames ESG as a critical, overarching issue confronting the real estate industry today and emphasises the need for a broader array of research methodologies to effectively address the sector's associated challenges. Newell (2023) identified that, especially from the real estate perspective, research was conducted mostly in a limited range of methodologies from the finance paradigm, which is in line with the previous findings in this literature review. Hence, it can be stated that there is a need for improvement not only in the specific application of ESG but also that the methodological approach has thus far been predominantly limited to quantitative methods. Qualitative methods are required to gain

relevant insights into the mindset, attitudes, and decision-making processes of practitioners. In this context, Newell (2023) advocates the use of interviews as a methodological approach to contribute to the research on critical issues of the real estate industry such as ESG.

Some systematic literature reviews touch upon the real estate industry but the prevailing emphasis lies on investment and finance aspects. While most scholars emphasise the significance of ESG for businesses across several sectors, some argue that ESG is gradually becoming mainstream and that ESG has been widely examined, practised, and popularised in the practical field (Li *et al.*, 2021). Edmans (2022) even debates the end of ESG in its current form as using the specialised term implies it is niche. Meanwhile, Edmans (2022) argues that ESG investing is no different than other intangible assets that create long-term financial and social returns, so companies should not be praised for improving ESG values. Despite opinions suggesting that ESG is considered adequately researched or even mainstream, these assertions appear inaccurate in the context of the real estate industry and real estate development in particular. On the contrary, the present research scope underscores that ESG has not been comprehensively examined, and the real estate sector assumes a secondary role therein, lacking sufficient investigation.

2.2.3 Current understanding of ESG within real estate development

After it was previously established that ESG has particularly strong contextual relevance and that sector-specific aspects must also be taken into account when assessing ESG measures, it appears appropriate to examine existing research on ESG in the specific application context of the real estate development sector. The aim is to understand how ESG is perceived within this sector and what conclusions can be drawn from this with regard to the integration of ESG measures.

In the field of real estate development, the concepts of ESG and sustainability are intricately interwoven yet distinct. While ESG can be seen as a subset of sustainability, the two concepts intersect at the pursuit of responsible and forward-thinking practices that aim to create positive impacts on the environment, society, and the project's long-term viability. While incorporating ESG factors can result in contributing to sustainability and strengthening corporate sustainability performance (Alsayegh *et al.*, 2020; Widyawati, 2020; Blinova *et al.*, 2022), drawing a fully reciprocal conclusion is subject to limitations. Merely pursuing a

sustainability agenda does not inherently imply that a company or project is adhering to specific ESG criteria. This distinction becomes particularly important when viewed through the lens of institutional theory. Institutional theory suggests that organisations adopt structures and practices not only because they are technically efficient, but also because they are regarded as appropriate, legitimate, and expected within their organisational environment (Meyer and Rowan, 1977; Scott, 2014). In this sense, the growing prominence of ESG in real estate development can be understood not merely as a managerial response to sustainability challenges, but also as a response to institutional pressures exerted by regulators, investors, lenders, professional bodies, and broader societal expectations. ESG has thus increasingly emerged as an institutionalised framework through which real estate firms are expected to demonstrate responsible conduct, transparency, and alignment with accepted market norms.

Over time, there has been a growing interest among investors seeing ESG from the investment and finance perspective (Eccles *et al.*, 2020; Kempeneer *et al.*, 2021). In contemporary investment decisions, some ESG considerations have even become almost universally required from a legal standpoint (UN, 2019). Consequently, investors and their clients are now increasingly compelled to seek profitable sustainable investments, irrespective of whether their motives are altruistic or financially driven (UN, 2019; Kempeneer *et al.*, 2021). From an institutional perspective, this development reflects what DiMaggio and Powell (1983) describe as coercive pressures, that is, pressures arising from formal rules, regulatory frameworks, and the expectations of powerful external actors on whom organisations depend. In real estate development, such pressures are particularly relevant because access to finance, investment capital, and market legitimacy is increasingly shaped by ESG-related expectations.

A commonly used, though inconsistently defined, term for projects considering environmental or social aspects is sustainable building. Real estate has long engaged with this concept, while ESG has only recently gained attention – likely because the real estate industry is only indirectly pressured by investors and users to adopt ESG measures (Robinson and McIntosh, 2022). Elkington's (1998) three-pillar model of sustainability – ecology, economy, and social – is frequently used in real estate (Goh *et al.*, 2020). Based on this, sustainable buildings largely overlap with ESG, as both include ecological and social

dimensions. However, Elkington's (1998) model lacks a specific focus on governance. Some scholars equate ESG and sustainability (Rezaee, 2016; Jebe, 2019; Keeris and Langbroek, 2019), which is understandable since the Triple Bottom Line also advocates a holistic view of corporate performance beyond profit. Still, equating the two may be insufficient here. ESG can be seen as an evolved form of the Triple Bottom Line, offering measurable criteria across environmental, social, and governance dimensions, while sustainability remains broader and more conceptual. In real estate, ESG is increasingly viewed as a key framework for evaluating environmental sustainability, social responsibility, and governance in companies, investment vehicles, and development projects (Chin *et al.*, 2021; Pichola *et al.*, 2021; Newell *et al.*, 2023).

Institutional theory offers an explanation for why ESG remains inconsistently understood across the real estate development sector despite its growing importance. DiMaggio and Powell (1983) argue that in contexts of uncertainty, organisations often respond through mimetic behaviour, imitating the practices of peers perceived as legitimate or successful. At the same time, normative pressures emerge through consultants, industry guidance, certification systems, and professional communities that shape understandings of appropriate ESG practice. In a fragmented sector such as real estate development, these pressures may lead to increasing recognition of ESG without necessarily producing a uniform interpretation of what ESG should include or how it should be implemented. This is particularly relevant for the present study, as it helps explain why ESG is simultaneously gaining significance and remaining conceptually uneven across firms and projects.

There are other acronyms for the sustainability and responsibility sphere such as SDG (Sustainable Development Goals), CR (Corporate Responsibility), Corporate Governance (CG) or CSR (Corporate Social Responsibility). These concepts intersect ESG as they all aim to promote sustainability, responsible practices, and positive social and environmental outcomes (Franco *et al.*, 2021; Gillan *et al.*, 2021; Alamillos and de Mariz, 2022; Buchetti *et al.*, 2022; Robinson and McIntosh, 2022). To remain in the scope of this study, these concepts will not be discussed further.

2.2.4 Relevance of ESG integration into real estate development projects

The substantial ESG-related issues arising from the real estate industry, which at the same time also constitute challenges for the sector itself, have already been sufficiently outlined in the explanation of the contextual background of this study (see **Section 1.2.1.2**). Having established the practical relevance of ESG measures integration there, this section now turns to an examination of the academic perspective on the relevance of ESG integration into real estate development.

The buildings developed today will provide the built environment of the future and will influence the ability of future generations to meet their needs (Pitt *et al.*, 2009). It is therefore appropriate to discuss the relevance of the integration of ESG into the development process of real estate projects. While investment and asset managers are directly concerned with ESG requirements, they can only strategically contribute to ESG. In contrast, real estate developers are only indirectly concerned with ESG but can contribute to ESG on the operational level (Deloitte, 2020; Alasco, 2022). This creates an ESG delivery paradox: Those actors who are directly subject to ESG expectations cannot deliver ESG outcomes on their own, whereas those who can operationally deliver them are not directly prescribed by the same requirements. In other words, the products developed by the real estate development market enable finance and investment market participants to fulfil their ESG strategy. From the perspective of institutional theory, this uneven exposure to ESG can be explained by the different institutional pressures faced by market participants. Institutional theory argues that organisations adopt structures and practices not only because of technical efficiency, but also because they seek legitimacy, stability, and access to resources within their organisational field (Meyer and Rowan, 1977; Scott, 2013). In the context of real estate, investors and financial actors are more directly exposed to coercive pressures such as regulation, disclosure requirements, and capital-market expectations, whereas developers are often affected more indirectly through changing investor requirements, professional norms, and competitive imitation (DiMaggio and Powell, 1983). Applying institutional theory to the ESG delivery paradox helps understanding why ESG engagement is distributed asymmetrically among the market participants.

The different engagement of market participants with sustainability considerations can lead to a stalemate situation that Cadman (2000) describes as the “*vicious circle of blame*”.

Cadman (2000) defines a situation where on the one hand investors, developers, occupiers, and constructors say that there is a willingness to invest in, develop, build, and demand sustainable buildings, but on the other hand there are no sustainable investment products, rental spaces, construction projects, or investment demand. Stakeholder theory provides a useful lens for understanding this stalemate. Rather than viewing the “vicious circle of blame” merely as a market inefficiency, it can be interpreted as a stakeholder coordination problem in which multiple actors hold interdependent yet insufficiently aligned interests. Freeman (1984) argues that organisations must address the claims of all relevant stakeholders, while Mitchell *et al.* (1997) show that stakeholder claims differ in terms of power, legitimacy, and urgency. Applied to the context of this study, this means that investors, developers, occupiers, and constructors may all recognise the relevance of sustainability requirements, yet still prioritise different objectives. By adopting the concepts of stakeholder theory the viewpoint shifts from a descriptive account of blame allocation as it was described by Cadman (2000) to an understanding of why the shared adoption of ESG considerations is hindered as a result of diverging stakeholder interest. When the “vicious circle of blame” is viewed through the lens of paradox theory, a further layer of explanation can be derived. Smith and Lewis (2011) argue that organisations frequently face paradoxes that cannot be solved through either/or choices, but must be managed through both/and responses. On the one hand, the market increasingly demands sustainability. On the other hand, market actors often remain hesitant in practice due to concerns over higher upfront costs, unclear responsibility allocation, implementation risks, and uncertain end-user demand. Developers therefore operate within precisely this field of tension and must make strategic decisions under conditions of persistent contradiction (Hahn *et al.*, 2014). From a paradox theory perspective, these competing demands should not be understood as temporary trade-offs that can be fully resolved, but rather as interdependent and enduring tensions that must be continuously managed. In this sense, developers are required to balance short-term economic viability with long-term sustainability ambitions (Hahn *et al.*, 2014; Wannags and Gold, 2020). The challenge in the context of ESG integration in real estate development is therefore not simply to choose between commercial and sustainable objectives, but to navigate, accommodate, and reconcile these conflicting yet coexisting imperatives within the development process.

Keeping (2000) calls for breaking the vicious circle of blame as this is necessary for delivering sustainable projects and encourages developers to develop more sustainable

projects and investors do not see sustainability as a threat. Taylor *et al.* (2018) appeal to strategy and financial leaders to take a more proactive role in connecting sustainability considerations to corporate strategy. Following this appeal, project managers have to take the proactive role in adopting ESG considerations in their projects. To achieve this, project managers have to become key actors in translating and balancing stakeholder expectations at project-level (Freeman, 1984; Mitchell *et al.*, 1997) and balance the tensions of the real estate development market (Smith and Lewis, 2011). With regard to project management, Marcelino-Sádaba *et al.* (2015) caution that the result cannot be sustainable if sustainable processes are not applied to the project and thereby call for more sustainability considerations in project management.

There are many initiatives and approaches from both the regulatory and voluntary sides to either report, evaluate or disclose ESG aspects of firms, investments, and projects, but a holistic approach that integrates ESG considerations into the development process is still lacking. This is remarkable, as delivering real estate projects that consider ESG requirements can make a major impact to overcome climate change and can contribute to the SDGs. Regarding the achievement of sustainability in the built environment, Agyekum-Mensah *et al.* (2012) underline the importance of delivering sustainable real estate projects, as any measures that reduce the carbon dioxide equivalent emissions of the real estate industry are worthwhile and should be considered as part of the sustainability agenda. Muthers and Matzarakis (2018) agree on this point and call for increased efforts to reduce emissions on the one hand and to increase the development of adaptation measures on the other hand. They consider these measures to be imperative to reduce negative consequences of climate change. It becomes evident that the incorporation of ESG into the real estate development process cannot only contribute to breaking the vicious circle of blame, as delineated by Cadman (2000), but can also directly facilitate the formulation of real estate projects that contribute to overall sustainability.

2.2.5 ESG integration factors in real estate development

With regard to the third research question, the following section identifies ESG integration factors based on an analysis of relevant research from the real estate sector. By elaborating these factors, important themes can be developed that can subsequently be drawn upon for the development of the ESG integration framework.

The built environment faces growing challenges due to the demands and complexities of sustainability. As a result, sustainable project management, construction, and urban development have gained increasing attention in both practice and research in recent years (Brownill *et al.*, 2013; Shirazi and Keivani, 2019). Recent studies have explored how real estate development business models are adapting to these shifts, marking a resurgence in this area (Nosratabadi *et al.*, 2019). However, research on the built environment continues to focus predominantly on environmental concerns, with a full integration of all ESG dimensions still lacking. In order to facilitate the development of sustainable projects, it is imperative to incorporate sustainability considerations during real estate development. Given that the real estate developers' business model revolves around the development of real estate projects, this is the focal point for enhancing project success through the integration of ESG measures. But, especially in the field of real estate, research on the adoption of ESG is limited, as identified by Gradillas *et al.* (2021).

Baumann and Müller (2021) discuss the operationalisation of sustainability strategies and highlight the necessity of translating and cascading the overarching corporate sustainability strategy into individual projects. In their presentation, they place particular emphasis on sustainability strategy implementation and define it in terms of assignment, performance monitoring, review, and strategy adjustment in a cycle. Regarding the integration of ESG into construction projects, Kim and Chang (2022) identify the key challenge as transferring the overarching management perspective to the project-level. Therefore, they propose that ESG criteria should be designed at the project-level rather than at the overall corporate level. At this point, the perspectives of Kim and Chang (2022) and Baumann and Müller (2021) diverge. Nevertheless, it becomes evident how crucial it is to apply and integrate the ESG strategy at the project-level. Looking at project processes of construction projects, de la Cruz *et al.* (2021) propose several important steps for the consideration of sustainability: planning sustainability management, establishing a sustainability breakdown structure, defining the sustainability objective, identifying project alternatives to achieve sustainability, planning, implementing the strategy, and monitoring and control. Especially with regard to the breakdown of the sustainability strategy and its implementation, parallels can be discerned between the assertions posited by Baumann and Müller (2021) and those of de la Cruz *et al.* (2021). This underscores the significance of these facets in accentuating the integration of sustainability aspects into the real estate development process.

With regard to sustainable real estate development, Raslanas *et al.* (2012) identified performance criteria, namely (1) the economic objectives should not be maximised by breaching the environmental and social constraints, (2) the environmental benefits should not be maximised without complying with the economic and social constraints, and (3) the social benefits should not be maximised without complying with the economic and environmental constraints. With this analysis, Raslanas *et al.* (2012) call for an equal consideration of each pillar of sustainability. Similarly, Warren-Myers (2012a) underlines the importance of a holistic incorporation of sustainability in real estate to fully implement sustainability. This also raises the question of what holistic incorporation actually means, since, as already identified in **Section 2.1.9**, sustainability and ESG may sometimes involve conflicting objectives.

Next to the balanced consideration of all ESG dimensions, Deden *et al.* (2018) also emphasise the early project stages as important for sustainability considerations. In this sense, Auer (2022) advocates placing ESG in the foreground when selecting sites and looking beyond classic dimensions such as location, accessibility, and connections. Auer (2022) calls for environmental aspects to be taken into account in the choice of location, such as soil sealing, foundations, and effects on the microclimate. Auer (2022) further assumes that the project location decision will be based on the real estate developers' ESG risk assessments.

By looking at construction, Mavi *et al.* (2021) also hold that sustainability concepts should be included in projects from the early stages and propose that design and feasibility studies must be monitored throughout the project life cycle. The early consideration of ESG in the project life cycle is also emphasised by PRI (2022), indicating that ESG factors should be integrated as early in the process as possible, to have the maximum impact. For real estate development, they propose the design phase as ideal, as project team and investor can include the ESG performance of components and other sustainability features in their decision-making process. Satankar and Jain (2015) even argue that mistakes made in the initial phase of the development process are compounded and are impossible to overcome. Therefore, they argue that the initial feasibility, assessment, and planning stages are most critical for project success. Regarding the project team, it is also highlighted by Deden *et al.*

(2018) that the composition of the project team is important for achieving sustainability in real estate projects. However, it is also emphasised that not only internal stakeholders, such as the project team, constitute an important factor in ESG integration, but also external stakeholders, including contractors, consultants, operators, public authorities, and the wider community. Particularly in real estate development, which is characterised by strong interdependencies among multiple actors, stakeholders exert substantial influence on project outcomes. Consequently, the coordination of these stakeholder groups is regarded as a key factor in effective ESG integration (Gunduz and Almuajebh, 2020; Ferreira *et al.*, 2024). Also belonging to the external stakeholders are the future users of a building, why this stakeholder group also has to be included in ESG considerations. The user of a property has a significant influence on the design and consumption of data and should therefore be involved in the process (Collins *et al.*, 2019; Kempeneer *et al.*, 2021).

Further, the current literature on ESG integration in real estate indicates that the behaviour and decisions of top management are of considerable importance. It has been found that ESG integration is more likely when top management provides clear strategic direction, organisational support, and appropriate accountability structures. In this context, the reduction of organisational resistance also emerges as a central condition for effective ESG integration (Gunduz and Almuajebh, 2020; Bezerra *et al.*, 2024).

Building on the previously discussed subjective and contextual nature of ESG, it is hardly surprising that the measurability and comparability of ESG measures are widely regarded as major challenges. Accordingly, consistent measurability, the generation of accurate data, and the reliability and comparability of such data are considered key factors for effective ESG integration (Jonsdottir *et al.*, 2022; Bezerra *et al.*, 2024; Shahid *et al.*, 2024).

Against the background of the trader-developer business model examined in this study, it is also worth noting that a life-cycle perspective on real estate is regarded as an important driver of ESG integration. In contrast to short-term delivery metrics, the consideration of life-cycle costs is described as a key factor in ensuring that design, construction, operation, and end-of-life impacts are taken into account in an integrated manner (Ershadi and Goodarzi, 2021; Akbari *et al.*, 2024; Ferreira *et al.*, 2024). Against this background, a longitudinal study of real estate developers also appears particularly relevant. Van der Leer *et al.* (2026) identified

that trader-developers tend to define certain ESG requirements primarily as project objectives to be achieved by the time of handover. Long-term optimisations, for example those related to energy efficiency, are less central to the trader-developer's focus according to their findings.

Finally, the close interrelationship between ESG-related legislation and regulation has already been discussed extensively. In this context, the incorporation of such regulatory requirements into organisational practices is likewise described as a key factor for ESG integration in the real estate industry (Nyoni *et al.*, 2023; Shahid *et al.*, 2024).

2.2.6 ESG integration into business processes

Since real estate development is understood in the context of this study not only as a research discipline, but also, as suggested by Botha *et al.* (2014), as a business process, this section analyses how ESG considerations are integrated into business processes. The themes derived here provide important conclusions for the ESG measures integration framework to be developed, as they indicate which aspects require particular consideration in this context.

Autio *et al.* (2023) identified that a holistic approach in real estate management that encompasses all the themes that are relevant in the real estate business, including ESG, is lacking. Remarkably, Autio *et al.* (2023) further state that strategic management decisions regarding real estate assets are more prominent in corporate real estate management than in investor-based real estate management research. Research in real estate management has produced more frameworks to help organisations outside the real estate industry to improve the long-term performance of their real estate assets (O'Mara, 1999; Roulac, 2001; Lindholm and Nenonen, 2006; Shiem-shin Then *et al.*, 2014; Heywood and Arkesteijn, 2017). By looking at business operations, Aldowaish *et al.* (2022) argue that ESG is mostly seen from the perspective of socially responsible investment whilst there is less on the discussion of the integration of ESG factors into business operations. They further argue that a detailed explanation of how firms can fully integrate ESG, transform, or improve their business processes is still missing. In addition, they state that ESG is adopted rather reluctantly, which leads to ESG not being holistically integrated into business operations. Aldowaish *et al.* (2022) conclude by identifying a gap regarding the impact of ESG integration on business operations, especially with regard to the integration process. They note the need for a more

holistic understanding of ESG impacts on business models, among others, from the perspective of business operations.

Although the integration of ESG into the business processes of the real estate industry, and particularly within real estate development, remains inadequate, there exists notably deeper engagement with the integration of ESG, particularly within the fields of research areas such as investment and finance. This is unsurprising, given that ESG directly impacts the finance and investment market, thereby exerting significantly heightened pressure for integration. Briand *et al.* (2011) developed an integrated ESG investment process, proposing to start with a clear definition of investment objectives reflecting investment beliefs, followed by portfolio construction, risk management, compliance and reporting, and, finally, engagement and voting. Parallels to de la Cruz *et al.* (2021) can be found as they propose defining sustainability objectives as an important process stage. Crace and Gehman (2023) recommend that ESG indicators should first be deemed salient to be incorporated. Another study proposes that the main task of assessing ESG factors at the project-level is to determine the long-term priorities associated with ESG. Further, it is argued that implementation should be characterised by a systematic approach to integrate ESG factors and sustainability aspects (Fedchenko *et al.*, 2023). Again, connections to research in the field of real estate and investment can be identified here. Fedchenko *et al.* (2023) and Bauman and Müller (2021), as well as de la Cruz *et al.* (2021), emphasise the significance of sustainability implementation to business processes.

Schramade (2016) also stresses the importance of sustainability integration as a strategic decision. Schramade's (2016) paper researched the integration of ESG into investment decisions and valuation models. It is elaborated that true ESG integration means that ESG factors are systematically fed into the valuation models and investment decisions. But most ESG approaches in investment and valuation fail to do this. So, it is concluded that sustainable investing is much less an application success than a marketing success. Finally, an approach is proposed that is based on traditional valuation approaches but which links ESG issues to value drivers through their impact on the business model and competitive position. Dugaard (2020) also mentions the different approaches to ESG implementation by calling for the creation of a theory which captures the heterogeneity of ESG and the diverse forms of ESG investors to be the main challenge for future research. Again, in the

context of investment and valuation, Nielsen and Noergaard (2011) find that existing models are insufficient to capture additional value through ESG integration. They present an integrated decision model that considers both financial data and ESG factors. In contrast to Schramade's (2016) approach, Nielsen and Noergaard (2011) suggest that a model that integrates ESG should not be built on top of existing models.

Further research on ESG investing decision making was conducted by Sultana *et al.* (2018), who explored stock market investment preferences for ESG issues. They also advocate for integrating ESG aspects into the business model to improve business conduct in an ESG-friendly way. In addition, they argue that ESG integration can provide sustainable investment returns together with environmental, social, and economic balance, paving the way for sustainable development. A lack of empirical foundation in current research on ESG integration is also identified in the field of strategic planning processes in sustainable development (Lokuwaduge and Heenetigala, 2017), in the field of business operations and the creation of business model archetypes that integrate ESG (Aldowaish *et al.*, 2022), as well as in the field of ESG standard adoption in real estate (Gradillas *et al.*, 2021).

Furthermore, Park and Jang (2021) state that previous ESG models are limited in terms of applicability. On the other hand, it is also noted that internally made or privately sourced ESG models lack generalisability, comparability, and continuity. When it comes to the comprehensive consideration of sustainability and ESG aspects, parallels can once again be drawn with the preceding chapter. Cappucci (2018) argues that the best ESG strategy is the full integration of ESG factors, as an approach that is not implemented whole-heartedly can lead to return risks. Cappucci (2018) discovered an interesting paradox: only a few practitioners adopt ESG fully into their processes, but the greatest benefits of ESG are only achieved through the full integration of ESG. Again, the question arises as to what full ESG integration means, as the conflicting objectives of individual ESG measures have already been discussed.

Part III: ESG Measures in real estate development

The third part of the literature review focuses in particular on the first research question, which concerns the identification of key ESG measures in the real estate development sector. Given the absence, to the best of the researcher's knowledge, of a comprehensive list of ESG measures specifically related to the real estate development process of German real estate projects, the researcher draws upon prior research in the areas of corporate financial performance, real estate investment, and project management. Additionally, existing frameworks from building certification, legislation, and the financial sector are examined to gain an overview of current ESG measures. By developing literature-derived themes, the research question can be addressed from a theoretical perspective. The derived themes are presented at the end of the literature review in a conceptual framework.

2.3.1 ESG measures in the context of this study

To be able to answer the research question of identifying key ESG measures that could be used in the real estate development projects in Germany, first a definition of ESG measures in the context of real estate development projects has to be established. Measures refer to actions, methods, or steps to achieve particular goals or to address a specific situation. Measures can have a more qualitative or quantitative nature or be viewed as being subjective or objective. In the light of ESG especially non-financial performance parameters are associated with qualitative measures (D'Apolito and Iannuzzi, 2017). According to Li *et al.* (2021) ESG measures, both qualitative and quantitative, are connected to ESG matters that may have an impact on the financial performance or solvency of an entity, sovereign, or individual. Although some criteria such as carbon emissions, can be objectively measured, many ESG factors require subjective decisions (Matos, 2020). Following this conclusion ESG measures in the light of real estate projects can be of qualitative or quantitative nature and are connected to project-related ESG matters that have an impact on the success of the project. Given the lack of a unified definition of this term in ESG research, alternative terminologies are also used interchangeably. For instance, Xie *et al.* (2021) refer to ESG activities in their research, while Kyriakogkonas *et al.* (2022) prefer the term ESG criteria. In this study, for the sake of simplicity, the term ESG measures is predominantly employed

2.3.2 Overview of analysed ESG measures frameworks

The following sections present and summarise relevant ESG measures in the respective environmental (E), social (S), and governance (G) domains to give an overview of the direction of current research on ESG measures. To facilitate this, 16 different frameworks and research studies are examined and synthesised into three coherent matrices (*see Tables 2.2 – 2.4*). Before presenting the matrices, the analysed frameworks are briefly presented.

Xie *et al.*'s (2019) research investigates ESG activities to examine the corporate financial performance of companies disclosing ESG information. Although these ESG activities are not specifically related to real estate projects, Xie *et al.* (2019) compile a comprehensive set of ESG activities that is utilised in this study. Morgante *et al.* (2023) identify various indicators from the European and Italian regulatory frameworks in the ESG sphere and verify them through a qualitative case study. Despite the focus not being on German real estate projects, this study provides detailed and real estate-specific ESG measures. The overview of ESG indicators by DVFA and EFFAS (2010) also pertains to the real estate sector but targets the organisational level of real estate holding and development entities. Zhang *et al.* (2024) conducted a research project on the project-level ESG measures in Chinese architecture, engineering, and construction firms. Although this research does not cover the real estate development process, with planning and construction services important aspects of the development process are covered, which is why the identified ESG measures appear to be highly relevant and worth considering in the matrices below. ESG measures can also be derived from the building certification framework of DGNB (2023). Although the DGNB criteria catalogue is not explicitly oriented towards ESG, specific sustainability criteria for German real estate projects can be identified. The international building certification framework of GRESB (2023), on the other hand, specifically addresses ESG measures that can be implemented in buildings and real estate projects, providing a crucial contribution to the compilation of ESG measures. Ziolo *et al.* (2019) assemble a comprehensive list of ESG factors incorporated by financial institutions, based on the research of Escrig-Olmedo *et al.* (2019). Refinitiv's (2022) ESG matrix categorises ESG measures into various themes, utilising data points to measure the ESG performance of companies. This framework serves as the basis for research in the real estate field, such as Zanin (2022) or Di Simone *et al.* (2022), and is therefore examined in this study. Further ESG measurements could be identified from a report of the OECD (2023), which classified the most common methods of ESG assessment from the fields of sustainable finance and infrastructure initiatives.

Significant contributions also emerge from the field of project management, particularly the sustainability indicators compiled by Stanitsas *et al.* (2021) based on relevant research in the project management sphere. This is particularly relevant as it focuses on the project-level. Instead of specifically examining governance measures, Stanitsas *et al.* (2021) generally focus on economic indicators, making their research less distinct in this area compared to others that explicitly address all levels of ESG. Kyriakogkonas *et al.* (2022), on the other hand, concentrate on all ESG areas in their research on sustainable project management. Park and Jang (2021) examine ESG criteria from the perspective of institutional investors, providing a comprehensive set of ESG sub-criteria and associated measurements from which ESG measures can be derived. Akomea-Frimpong *et al.* (2024) identified ESG indicators within the construction sector on the project, firm, and industry level. Although this study is limited to the construction industry and therefore does not cover important aspects of real estate development, it provides a significant foundation for the ESG measure overviews to be created, based on these ESG indicators identified by Akomea-Frimpong *et al.* (2024).

The Statista Research Department undertook a survey among 72 real estate investors regarding their opinion on the importance of ESG measures (Statista Research Department, 2023). The ESG measures used in this survey are useful as they provide insights into the perspective of real estate investors, although these ESG measures are not designed for real estate projects. Homagk *et al.* (2023) developed a toolbox for German real estate projects, focussing mainly on social measures and few environmental measures. Governance measures are not explicitly addressed, whereas the checklist by the ICG (2023) focusses only on governance measures. Therefore, these sources were only used in the respective relevant matrices.

2.3.3 Compilation of ESG measures matrices

The frameworks analysed in the following sections are presented in **Table 2. 1**. The table gives an overview of the authors, the publication year and type of the reference. In addition, the table specifies each study's empirical context (e.g., finance, real estate, construction) and the focal construct applied (e.g., ESG, sustainability, governance). It also reports the geographic setting of the study. Where no region is indicated, either the regional context could not be clearly inferred or the study was explicitly designed with a global scope. This overview of the analysed frameworks indicates, first, that the German real estate

development market is understudied from an academic perspective. Moreover, it becomes evident that the intersection of real estate development and ESG has likewise received limited scholarly attention to date. Most of the frameworks presented here focus on areas that are essential components of real estate development—such as real estate investment or project management—yet a direct focus on real estate development itself is largely absent.

Table 2. 1: Overview of analysed ESG measures frameworks

Nr.	Author(s)	Year	Type	Empirical context	Focal construct	Region
1	Xie <i>et al.</i>	2019	Journal Article	Finance	ESG	/
2	Morgante <i>et al.</i>	2023	Journal Article	Real Estate Investment	ESG	Italy
3	DVFA and EFFAS	2010	Industry Report / Guideline	Finance (Real Estate)	ESG	Europe
4	DGNB	2023	Building Certification	Real Estate	Sustainability	Germany
5	Escrig-Olmedo <i>et al.</i>	2019	Journal Article	Rating Agencies	ESG	/
6	OECD	2023	Industry Report / Guideline	Infrastructure Finance	Sustainability	/
7	Refinitiv	2022	Industry Report / Guideline	Finance	ESG	/
8	Zhang <i>et al.</i>	2024	Journal Article	Architecture, Engineering, Construction	ESG	China
9	Stanitsas <i>et al.</i>	2021	Journal Article	Construction	Sustainability	/
10	Kyriakogkonas <i>et al.</i>	2022	Journal Article	Project Management	ESG	/
11	Park and Jang	2021	Journal Article	Investment	ESG	S. Korea
12	Akomea-Frimpong <i>et al.</i>	2024	Journal Article	Construction	ESG	/
13	GRESB	2023	Building Certification	Real Estate	ESG	/
14	Statista	2022	Industry Survey	Real Estate Investment	ESG	/
15a	Homagk <i>et al.</i>	2023	Industry Report / Guideline	Real Estate Investment	Social Sustainability	Germany
15b	ICG	2023	Industry Report / Guideline	Real Estate	Corporate Governance	Germany

Source: Researcher (2026)

The overviews created in the following three sections are based on the studies presented above. **Tables 2. 2 – 2. 4** were compiled through a structured literature review of the discussed 16 relevant sources from journal articles, certification systems, industry reports, and ESG-related frameworks in real estate, construction, project management, sustainable finance, and related fields. As no single ESG measures framework exists for German real estate development, the researcher extracted all explicitly stated ESG indicators, criteria, actions and measures from these sources and then grouped conceptually similar items into

broader analytical categories. In examining the 16 papers, it became evident that their modes of presentation varied considerably. ESG measures were presented in figures, in text, or in tables with differing structures. In order to achieve the greatest possible clarity while also providing a detailed insight into the structure and prioritisation of ESG measures, a presentation format was selected that adopts the thematic categorisation of measures used by Morgante *et al.* (2023) and Zhang *et al.* (2024), while at the same time presenting the findings in tabular form across the three dimensions of ESG. The topics were further developed through an iterative process, drawing on structural levels derived from the analysed sources. For example, the compilation of **Table 2. 2** was informed by the environmental objectives of the EU Taxonomy. The categories *Labour* and *Community* in **Table 2. 3** were adopted from Zhang *et al.* (2024), whereas *Health & Wellbeing* was informed more strongly by Morgante *et al.* (2023). As additional sources were incorporated, the topics were continuously refined and restructured in order to provide the most coherent and transparent overview possible. Accordingly, the final presentation format was inspired by the underlying sources but was progressively developed through multiple iterations and tailored specifically to the research aim of this study.

In these matrices, an “x” indicates that a source explicitly included the relevant measure or an equivalent criterion. Where a source was less granular, the broader category was coded rather than every possible sub-measure. The matrices therefore function as comparative synthesis tools rather than as weighted rankings of importance.

2.3.4 Environmental measures for German real estate development projects

The identified environmental measures from the previously discussed papers are presented in **Table 2. 2**. Climate change, protection of biodiversity and the prevention of pollution are at the forefront of environmental ESG measures in German real estate projects. The existing research on sustainability and ESG has already emphasised that the environmental aspect garners the most attention within the real estate industry. Consequently, it is not surprising that the examined frameworks in this domain place a significant focus on environmental considerations. Beyond the frameworks investigated in the matrix below, numerous other studies explicitly address environmental measures without necessarily targeting ESG as a whole. Noteworthy among these is the Carbon Risk Real Estate Monitor (CRREM), a recognised framework in the industry that concentrates on measuring carbon emissions from

existing properties (Hirsch *et al.*, 2019). Additionally, there are frameworks commissioned at the federal level that address climate adaptation in construction (Fahrion *et al.*, 2019). However, this analysis is confined to frameworks and research specifically related to ESG.

The ESG measures associated with environmental measures have been categorised into sub-sections, namely biodiversity, water, pollution prevention, energy and emissions, design and implications, and waste and materials. Within these sub-themes, various ESG measures identified and extracted from the frameworks have been organised and aggregated. Following the examination of the 15 frameworks, it is evident that measures related to emissions reduction, biodiversity protection, water conservation, and waste management take precedence. These measures have been identified as environmental ESG measures across various disciplines, including project management, real estate investment, building certification, and legislation. Measures associated with pollution minimisation are also frequently cited, encompassing light, noise, water, air, and land pollution. Frameworks specifically tailored to real estate, such as GRESB (2022), DGNB (2023), or Morgante *et al.* (2023), further describe measures related to the design, urban planning, and architecture of buildings. Notably, land use is mentioned in this context, emphasising not only how urban design is planned to minimise surface area sealing but also the early consideration of an appropriate location for a real estate project. This includes decisions on whether undeveloped, agricultural, historical, or forest land should be utilised. It becomes apparent that incorporating ESG measures into decision-making processes is crucial at the early stages of real estate development to achieve these objectives. Moreover, certain ESG measures are more relevant to the construction process after the project has been fully conceptualised. These include procurement, resource management, and planning, as well as material usage (O'Connor *et al.*, 2016). It is also evident that some frameworks propose very specific measures applicable to projects, such as the reduction of greenhouse gas emissions, the utilisation of renewable technology, or the use of sustainable and non-toxic materials (Xie *et al.*, 2019; Ziolo *et al.*, 2019; An and Pivo, 2020). On the other hand, others describe less project-specific measures, such as the existence of an environmental management plan or a corresponding policy (Refinitiv, 2022; Akomea-Frimpong *et al.*, 2024). Even though this examination is not comprehensive and draws from various research directions, a discernible trend emerges, indicating that climate change mitigation measures, such as the reduction of energy consumption and emissions, along with environmental conservation activities, hold the highest significance.

Table 2. 2: Environmental measures matrix

Topic	ESG Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bio-diversity	Habitat protection							x		x			x	x		
	Protection of surface water and aquatic ecosystems		x		x	x	x	x		x	x			x		
	Environmental compensation, restoration and preventions activities		x				x				x	x	x	x		
	Environmental management system, policy or control	x			x	x		x	x	x			x	x		
Water	Reduce water consumption (Freshwater/Groundwater)		x	x	x			x	x	x	x	x		x		
	Water efficiency measures (e.g. Reuse of water/Grey-water use)		x		x	x				x				x		
	Reduce wastewater production				x					x				x		
	Water management				x	x								x		
Pollution prevention	Minimise light pollution							x						x		
	Minimise noise pollution		x		x			x						x		x
	Minimise water pollution				x		x	x		x		x	x	x		
	Minimise air pollution	x			x		x	x				x	x	x	x	
	Minimise soil/land pollution		x		x		x	x				x		x		
	Pollution management, control and prevention		x			x	x							x		
	Exposure to fossil fuels/Reducing fossil fuels							x			x			x		
Energy & Emissions	Reduction of Energy Consumption		x	x	x	x		x	x		x	x	x	x	x	
	Energy efficiency and saving measures	x		x	x	x	x	x		x			x	x	x	
	Renewable Energy		x		x	x	x			x			x	x	x	
	Low carbon technology/Net zero carbon				x									x	x	
	Reducing Greenhouse Gas Emissions	x	x	x	x	x	x	x	x	x		x	x	x	x	
Design & Implications	Site selection (Transport impact/Travel impact/Climatic conditions/Sust. site selection criteria, e.g. existing developed areas)				x	x							x	x		x
	Land use (Undeveloped land/Agricultural land/Forest/Floodplain/Historical and heritage sites/Recovery of ex. buildings)		x		x		x	x			x	x	x	x		x
	Environmental design/Green building policy/Low environmental impact	x				x		x		x			x	x		
	Soil sealing/Draining surface/Green space availability		x		x			x					x			x
Waste & Materials	Sustainable procurement (incl. supply chain, contractor requirements, contractor ESG training)	x			x	x		x	x	x	x		x	x	x	
	Resource Management and Planning (Material sourcing, e.g. reuse materials/Materials from disposal/Local sourcing/Effective resource allocation)		x		x	x				x	x		x	x	x	
	Waste measurement and management (Hazardous waste/Waste output/Overproduction)		x	x	x	x	x		x	x	x	x	x	x	x	
	Material usage (Env. friendly material usage and measure/Recyclable, renewable, non-toxic or red list materials/ Low embodied carbon materials/Circular economy)		x		x	x		x			x		x	x	x	x
	Material disclosure (Environmental impacts/Health hazards/Certified materials/Product carbon footprint)		x		x									x	x	
	Material efficiency (Material consumption/Packaging/Paper consumption/Single-use plastic)	x			x	x			x	x		x		x		

1 = Xie *et al.* (2019), 2 = Morgante *et al.* (2023), 3 = DVFA and EFFAS (2010), 4= DGNB (2023), 5= Ziolo *et al.* (2019) based on Escrig-Olmedo *et al.* (2019), 6= OECD (2023), 7= Zhang *et al.* (2024), 8= Refinitiv (2022), 9= Stanitsas *et al.* (2021), 10= Kyriakogkonas *et al.* (2022), 11= Park and Jang (2021), 12= Akomea-Frimpong *et al.* (2024), 13= GRESB (2023), 14= Statista (2023), 15= Homagk *et al.* (2023).

Source: Researcher (2026)

2.3.5 Social measures for German real estate development projects

While the environmental pillar of ESG is already well covered by literature and regulation, the social pillar of ESG is rather vague in terms of concrete ESG measures (Missimer *et al.*, 2017; Wang and Ke, 2024; Martinsen *et al.*, 2025). Gurmu *et al.* (2022) even argue that social measures are often overlooked in the real estate degree. However, Kempeneer *et al.* (2021) claim that social criteria are becoming more and more incorporated into real estate considerations. Social ESG measures can be addressed by the real estate industry during all phases of the real estate life cycle, from initiation to operation (Hussin *et al.*, 2013). In the examined frameworks and research, social measures present a less clear picture compared to the environmental measures. In the following matrix (See **Table 2.3**) sub-categories were also formed for social measures, namely health and well-being, design and implications, human rights, labour, and services. Most of the analysed papers particularly focus on the sub-category of human rights. Within this sub-category, diversity, prevention of discrimination, whistleblower protection, and a general human rights policy were aggregated in the matrix below. The distinction between the sub-category of human rights and the ESG measures of human rights policy is not entirely clear, but it indicates that this theme seems to hold fundamental significance in both practice and research. The categorisation of ESG measures related to diversity within the social measures is not without controversy. Some of the examined papers view this aspect more as belonging to the governance domain. In this analysis, all measures related to diversity, connected to promoting diversity, equality promotion, and the rights of minorities, were assigned to the social measures. This could, for instance, refer to specific issues in the project, such as equal treatment in the rental of housing units.

Measures such as quality of working conditions, labour safety and management, and work-life balance are also challenging to distinguish based on the examined research. It is not clearly indicated whether these measures should be applied at the project-level, for example, to external service providers, or at the organisational level, encompassing the developer's staff members. In the specific context of real estate development, these measures could also be differentiated further according to project phases. In the earlier stages of the project, planners, assessors, and other service providers are typically involved, while, during the construction phase, these measures could also be applied to the workforce on the construction site. Frequently mentioned measures are those related to the community and municipality. Notably, community impact encompasses measures associated with

community health and well-being, contribution to the community, community investments, as well as support for charity and community groups (Ziolo *et al.*, 2019; Homagk *et al.*, 2023; Morgante *et al.*, 2023). Another crucial aspect is stakeholder engagement, with public acceptance towards the project, inclusion and participation of stakeholders in project planning, stakeholder rights, and community relations being frequently cited in the examined papers (Stanitsas *et al.*, 2021; Homagk *et al.*, 2023; Morgante *et al.*, 2023). However, there are also measures directly related to the project's design, such as air quality, comfort, lighting conditions, or measures for people with disabilities (DGNB, 2023; GRESB, 2023; Morgante *et al.*, 2023). Services are also mentioned, including the availability of public transport or technological infrastructure (Homagk *et al.*, 2023; Akomea-Frimpong *et al.*, 2024). In summary, social measures predominantly pertain to measures preventing the disadvantage of individuals and their health, as well as measures that could enhance the well-being and simplify the lives of individuals, including employees of the real estate developer, external workers, employees of subcontractors, and future users – both office workers and residents (Hayat and Orsagh, 2015; Gurmu *et al.*, 2022; Newell, 2023b).

Table 2. 3: Social measures matrix

Topic	ESG Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Community & Municipality	Communication (Process to address community concerns)				X			X			X		X	X		
	Community impact (Community health and well-being/Contribution to the community/Community investment/Support charities and community groups/Long-term socio-economic impact measurement/Economic attractiveness of the area)		X			X	X	X	X			X	X	X		X
	Employment creation in local communities		X							X		X	X	X		
	Education, Research and Network (ESG Education/Research and network activities)													X		
	Stakeholder engagement (Public acceptance/Share planning/Participation/Stakeholder rights/Community relations)		X			X	X		X	X	X		X	X	X	
	Public investment (Charities/Charges/Funding municipalities/Philanthropy/Enhancement of public spaces)		X			X		X		X	X	X	X	X		
Health & Well-being	Air (Natural ventilation/Indoor air quality/Thermal comfort/Humidity)		X		X								X			
	Comfort & Safety (Soundproofing/Acoustic comfort/Reduction of magnetic fields/Quality of stay/Equipment quality)		X		X								X			X
	Light (Illumination/Daylight/Visual quality/Reduction of solar radiation/Natural lighting)		X		X				X					X	X	X
	Disabilities and prevention (Inclusive design/Ergonomic workplace/Promoting design for safety)		X		X											X
	Post-construction monitoring (Occupant comfort and satisfaction)												X			
	Availability of surveillance devices		X													
Design & Implications	Diversification (Functional Mix/Different functions/Family-friendly design/Social institutions letting/Sports facilities)		X													X
	Occupant involvement (Occupant controls/Occupant education and well-being/Physical activity/Active transport)				X								X	X		X
	Design features (Active design features/Biophilic design/Green design)									X				X		X
	Affordability (Price-controlled or subsidised apartments/Upper income limit for price-controlled flats)									X			X	X		X
	Open space design (Space for common or public use/Green spaces/Pedestrian friendliness)		X											X		X
	Procedure to secure urban design quality		X		X									X		
Human rights	Diversity and equal opportunities (Promoting diversity/Promotion of equality/Rights of indigenous people)	X				X	X					X	X	X	X	X
	Prevention of discrimination, harassment, nuisance					X		X				X	X	X		
	Whistle Blower Protection													X		
	Human rights policy	X			X	X	X	X	X	X		X	X	X		
Labour	Protection of children (Incl. Child labour in procurement)				X	X						X		X		
	Safety measures (Safety personnel/Protective and lifesaving equipment/Safety information/On-site injuries)				X			X	X			X	X	X		
	Labour laws (Forced, compulsory labour/Support labour union)				X	X		X			X	X	X	X		
	Quality of working conditions, labour safety and management				X	X	X	X	X	X	X		X	X	X	
	Work-life balance/Tolerable working hours/Incentives				X	X					X		X	X		
	Human capital investments					X										
Service	Infrastructure (Proximity & accessibility to public transport/Connection to transit networks/Social and medical infrastr.)		X		X								X	X		X
	Technological infrastructure (Ultra-Broadband/Smart technologies/Remote control/Smart metering)		X	X	X									X		
	Mobility (Mobility services/Parking lots/Underground parking availability/Green mobility/Bicycle use support)		X		X											X

1 = Xie *et al.* (2019), 2 = Morgante *et al.* (2023), 3 = DVFA and EFFAS (2010), 4= DGNB (2023), 5= Ziolo *et al.* (2019) based on Escrig-Olmedo *et al.* (2019), 6= OECD (2023), 7= Zhang *et al.* (2024), 8= Refinitiv (2022), 9= Stanitsas *et al.* (2021), 10= Kyriakogkonas *et al.* (2022), 11= Park and Jang (2021), 12= Akomea-Frimpong *et al.* (2024), 13= GRESB (2023), 14= Statista (2023), 15= Homagk *et al.* (2023)

Source: Researcher (2026)

2.3.6 Governance ESG measures for German real estate development projects

Governance measures are perceived to preserve firm values and the value of the projects developed (Pivo, 2008; Bauer *et al.*, 2010; Ifediora and Igwenagu, 2024). It can be established that shareholder and stakeholder interests are at the core of governance measures (Adams *et al.*, 2011; Ayuso *et al.*, 2014; Konadu *et al.*, 2021). Just as the social pillar was able to apply certain ESG measures at the corporate level, the governance pillar of ESG is primarily aimed at the corporate level. Some ESG measures such as tax honesty, executive pay, board structure, staff turnover, data protection, and incentive system, for example, are difficult to apply at the project-level. However, there are some measures that are also relevant for projects in a modified form, such as the establishment of risk control systems to prevent corruption, guarantee employee rights, protect sensitive and personal data, and disclose relevant project information (Veith *et al.*, 2022). In the provided matrix (*see Table 2. 4*), sub-categories have been formed, namely management, staff, project management, and product & value.

Within the management sub-category, any measures related to business and market ethics are noteworthy. This includes actions against fraud, corruption, bribery, and espionage, as well as the existence of a code of conduct, an anti-trust policy, or corporate governance functions (Xie *et al.*, 2019; Ziolo *et al.*, 2019; Park and Jang, 2021). Other crucial measures at the management level include sustainability reporting, encompassing reports on environmental policy management, sustainable construction, or building materials (Xie *et al.*, 2019). Additionally, risk management is considered a significant governance measure, covering actions such as risk analysis, crisis management, policy management, and so forth (Park and Jang, 2021; ICG, 2023). Ensuring and safeguarding shareholder rights also holds importance (Ziolo *et al.*, 2019; GRESB, 2023; Akomea-Frimpong *et al.*, 2024). All these measures can be applied both at the management level of the project developer and at the individual project-level. In the context of the staff sub-category, training and qualification of employees, as well as the overarching term diversity, are central. As mentioned in the previous section, the delineation between social measures and governance measures in the context of diversity is debated. Here, all measures related to diversity that pertain to the workforce of the developer and the project team have been consolidated. This includes inclusion, structure, and gender representation. The compensation policy is also a crucial measure within the staff subcategory, encompassing measures such as management remuneration, bonus payments, and compensation in relation to ESG goals (DVFA, 2010;

Xie *et al.*, 2019; Zhang *et al.*, 2024). Research also identifies the maturity of workforce and staff satisfaction as governance measures (Park and Jang, 2021; Akomea-Frimpong *et al.*, 2024). The project management sub-category focuses largely on the project and the work within it. Notably, measures that can be attributed to the innovation measure are highlighted. This includes product innovations, digitalisation, technology usage, or building information modelling (Xie *et al.*, 2019; Refinitiv, 2022; Morgante *et al.*, 2023). The product quality, frequently mentioned in the literature on ESG measures, addresses product responsibility, project monitoring, and feedback (Park and Jang, 2021; DGNB, 2023). The product and value sub-category encompasses measures such as the existence of certifications, including building certifications (Kyriakogkonas *et al.*, 2022; Morgante *et al.*, 2023). Climate change adaptation of a project, with measures related to resilience and disaster safety, is also included in this sub-category (Xie *et al.*, 2019; Statista Research Department, 2023; Akomea-Frimpong *et al.*, 2024). In summary, governance measures aim to secure long-term corporate values by preventing misconduct by staff and management, while simultaneously fostering an equitable, educated, and experienced workforce to realise projects without adversely affecting others.

Table 2. 4: Governance measures matrix

Topic	ESG Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Management	Sustainability reporting (Incl. environmental policy management/Sustainable construction/Building materials)	X				X	X		X		X		X	X	X	
	Strategy (ESG Vision/Strategic planning/ESG strategy availability)					X			X	X	X			X	X	X
	Brand management/Image (Company/Management and staff)					X						X				
	Audit and control system, Data management	X				X				X			X	X	X	X
	Business and market ethics (Fraud/Corruption/Bribery/Espionage/Codes of conduct/Corporate governance/Anti-trust policy)	X		X		X	X	X		X	X	X	X	X	X	X
	Organisational culture (Collective beliefs and values/Organisational principles/Bureaucratic streamlining/Internationalisation/Identify and address choke points/Culture of accountability)									X	X		X			
	Transparency and transparent processes/Disclosure/Transparency of ESG requirements					X	X		X		X		X	X	X	X
	Data protection and privacy					X		X	X		X	X	X		X	
	Economic stability (Economic and financial performance/Legal and political stability and independency, Diversification)				X	X	X			X			X			
	Contractor relations and satisfaction									X	X	X	X			
	Risk Management (Risk analysis/Crisis management/Policy management/Business model resilience/Litigation risks/Scope control/Environmental risk management)		X	X	X	X		X		X	X	X	X	X		X
	Shareholder interests/rights/Takeover defences					X			X		X	X	X	X		X
	Board (Structure/ Diversity/Management)	X				X			X		X	X	X	X		X
Staff	Staff satisfaction (Staff turnover and retention/Employee commitment/Staff representation)			X		X				X		X	X	X	X	X
	Skilled project team (Project manager leadership style/Cooperative and trustful teamwork/Multidisciplinary)							X		X						
	Training and Qualification, Sustainability Training	X		X		X		X	X	X	X	X	X	X		X
	Maturity of workforce			X	X							X				
	Compensation policy (Remuneration/Bonus payments/Balance/Executive compensation in relation to ESG goals)	X		X		X		X	X	X	X		X	X		X
	Talent attraction, career opportunities					X			X	X		X	X		X	
	Diversity, Inclusion, Structure, Gender representation	X				X	X		X	X	X	X	X	X		X
Project Management	Innovations (Product innovations/Digitalisation/Facility management/Building technologies/First mover advantages/BIM usage/Innovation protection)	X	X	X	X			X	X	X			X			
	Tendering (Competitive tendering/Sustainability criteria in tendering process)				X					X				X		
	Research and Development expenditures (incl. Research on ESG)			X					X			X		X		
	Product quality (Responsibility/Safety and control/Project monitoring/Feedback)				X	X		X	X	X	X	X		X		
	Marketing (Responsible marketing/Target marketing)								X	X			X			
	Construction measures (Processes/Commissioning/Green construction practices)				X								X	X		
	Integration of environmental data									X				X		
	Project Management Tools (Iron Triangle/Best practice/Cost and Profit Management/Phase zero)		X		X					X			X			
Product & Value	Efficient decision-making, specific and achievable goals									X	X		X			
	Value and project success (Value stability/Project output emphasis/Integration of environmental data to reach project success/Execution of benefits strategy)				X					X			X			
	Certification (Building Certifications/Quality or techn. certifications)		X	X	X						X		X	X	X	
	Documentation (incl. Transparent handover of building documents/KYC/AML)		X		X					X						
	Climate change adaptation (Resilience to disasters/Catastrophes)	X			X					X			X	X		
	Life cycle assessment (Building-related costs in life cycle/Cost management plan/Embodied carbon measurement)				X					X		X	X	X	X	

1 = Xie *et al.* (2019), 2 = Morgante *et al.* (2023), 3 = DVFA and EFFAS (2010), 4= DGNB (2023), 5= Ziolo *et al.* (2019) based on Escrig-Olmedo *et al.* (2019), 6= OECD (2023), 7= Zhang *et al.* (2024), 8= Refinitiv (2022), 9= Stanitsas *et al.* (2021), 10= Kyriakogkonas *et al.* (2022), 11= Park and Jang (2021), 12= Akomea-Frimpong *et al.* (2024), 13= GRESB (2023), 14= Statista (2023), 15= ICG(2023).

Source: Researcher (2026)

Part IV: ESG benefits in German real estate development

By incorporating ESG measures into real estate projects, certain ESG benefits can be achieved. The following sub-chapters discuss relevant tangible and intangible ESG benefits for German real estate development projects and thereby address the second research question of this study.

2.4.1 ESG benefits in the context of this study

Due to the close connection of ESG benefits to successful real estate projects, it is appropriate to develop a uniform definition of ESG benefits for real estate projects to be used in this study. Zwikael *et al.* (2018) view project benefits as target and define them as “strategic project goals that following project completion will enhance organizational performance” (Zwikael *et al.*, 2018, p.650). Others view project benefits more as project business objectives from the viewpoint of project owner expectations (Rolstadås *et al.*, 2014). But not only project owners can be considered in terms of project benefits as argued by Johansen *et al.* (2014). They propose to extend the benefit concept to other stakeholders, both internal and external. Zwikael *et al.* (2018) further debate that benefits are sub-set project goals, alongside other tactical short-term goals as the ones defined by the iron triangle. They propose to set target benefits during the initiation phase of the project and to use them as a baseline for ongoing monitoring and control as well as for the evaluation of project performance (Zwikael *et al.*, 2018). In addition to this, it could also be argued that ESG benefits are not only promised and thus account for project success, but that the consideration of ESG measures in the real estate development process contributes to project success because a positive effect on project success factors is achieved.

Although measurability, evaluation process, organisational change and performance have been identified as benefit management themes for projects (Aubry *et al.*, 2021) and the characteristics of benefits are supposed to be “robust” and “realizable” (Jenner, 2009), it is still argued that literature lacks in a precise definition (Chih and Zwikael, 2015; Zwikael *et al.*, 2018). Zwikael and Smyrk (2019) see a close connection of project benefits with target outcomes. Target outcomes are revealed by the project’s purpose and can be described as beneficial end effects of a project. This view is in line with Flyvbjerg’s (2009, 2014, 2017) statement of delivering a project on the promised benefits to be an essential component of

project success. When it comes to project benefits in the context of sustainability, Keeys and Huemann (2017) hold that sustainable development envisions business and their projects to deliver benefits to a broad group of stakeholders. Putting this derivation into the context of this work, it becomes clear that to identify ESG benefits in German real estate developments, the beneficiaries as well as the project outcomes must be clear. It can be concluded that ESG benefits refer to the positive outcomes and advantages for project success from incorporating ESG to real estate projects. Emphasising ESG in real estate projects can be seen as a way to create value for both the real estate project and its stakeholders while contributing to sustainability.

2.4.2 ESG benefits for financial performance

Increased returns and higher reputation are two most frequently mentioned benefits in both academic and practitioner debates. Hsieh *et al.* (2020) mention long-term financial benefits for real estate investors when investing in sustainable buildings. They argue that the financial benefit will especially affect socially responsible investors as they consider the long-run effects of real estate on the environment. Warren-Myers (2012) argues in a similar direction, pointing out the importance of sustainability for the longevity of real estate portfolios. Kumar (2023) identified higher investment returns of financial instruments that consider ESG; however, a higher correlation was measured for developed countries. A positive correlation of engaging with sustainability concepts on equity returns (Henisz *et al.*, 2019), firm value (Taylor *et al.*, 2018), operating performance (Ooi and Dung, 2019), and competitive advantage (Chiang *et al.*, 2018) is suggested by research. In recent years, several meta studies on the financial benefits of ESG have been conducted. Friede *et al.* (2015) reviewed 2200 studies on ESG and financial performance of listed companies and investigated a positive impact of ESG on the financial performance. A further meta study on the economic relevance of sustainability for corporate management and for investors identified that 90% of the investigated studies see lower costs of capital through sound ESG standards, 88% show that ESG practices can lead to better operational performance, and 80% see a positive influence of ESG on stock price performance (Clark *et al.*, 2015). Other studies find similar results (Peloza, 2009; Cajias *et al.*, 2014; Bienert, 2016; Velte, 2017; Xie *et al.*, 2019). An exemplary outlier is the study of Renneboog *et al.* (2008) on the performance of socially responsible funds. They identified an underperformance compared to domestic benchmarks. This may be due to the early publication date of the study. Most of

the studies that found a positive performance of ESG, sustainability or social responsibility were published in later years. It is conceivable that the increasing public debate and perception of sustainability plays a role here. Another explanation is provided by Orlitzky's (2011) study, which shows that the influence of ESG on financial performance is dependent on the research discipline. It was found that researchers from the research fields of economics, finance, and accounting see a lower correlation than researchers from the fields of business ethics or society journals. As investigated by Garcia *et al.* (2017) and Duque-Grisales and Aguilera-Caracuel (2021), ESG does not necessarily lead to higher prices or better financial performance, as, depending on the industry and market investigated, there can also be a negative link.

2.4.3 ESG benefits at the project-level

ESG does not only influence market value and performance of companies but also buildings and projects. Several studies on the value of sustainable buildings have identified a positive impact on rents, capital value, and transaction prices (Miller *et al.*, 2008; Eichholtz *et al.*, 2010, 2013; Wiley *et al.*, 2010; Fuerst and McAllister, 2011; Reichardt *et al.*, 2012; Hui *et al.*, 2014; Fuerst *et al.*, 2019; USGBC, 2022). Fuerst and Dalton (2019) also found a positive connection between rentability and sustainable buildings; however, they give the hint of a possible publication bias as positive results may be more likely to be published than negative or inconclusive findings. Also, lower risk of defaults and vacancies leading to more stable cash flows is associated with sustainable buildings (Lützkendorf and Lorenz, 2005). Sustainability is likewise argued to have a positive impact on tenant demand and rent increase potential, as tenants are increasingly demanding sustainability in their workplaces and buildings that impact the community and the environment in measurable ways (Lützkendorf and Lorenz, 2005; Chin *et al.*, 2021; Selch, 2021). To date, the literature has not reached a conclusive assessment as to whether the consideration of ESG measures leads to higher rents or sale prices compared with the rest of the market (green premium), or whether such measures are simply becoming a new standard, with buildings that fail to meet these criteria instead facing a price reduction (brown discount). Although some studies identify increased interest and a higher willingness to pay among certain tenant groups, there is also evidence suggesting that higher rents may in fact reduce demand (Banerjee *et al.*, 2024; Liu *et al.*, 2025).

Considering sustainability measures during development and construction of buildings can lead to improved indoor air quality, reduced exposure to toxic materials and pollutants, and improve access to outdoor spaces and daylight, with beneficial effects for health and well-being (USGBC, 2022). Chin *et al.* (2021) identified these measures as having a positive effect on the attractiveness of buildings. The same was argued by Robinson and McIntosh (2022) in their discussion on environmental factors such as clear air and water quality and their effects on real estate valuations. By only considering the social pillar, a study investigated several social considerations in German real estate projects and associated rent increase potentials and market value (HTW Berlin and CC PMRE, 2023). Social measures that consider health and well-being such as, for instance, reduction of noise, air pollution, and inner-city urban heat are favoured on the tenant side and could lead to rent increases. Considering affordable housing as a social ESG measure in developing residential projects offers the opportunity to impact investing, according to Chin *et al.* (2021). Also, environmental measures, climate risk protection, connection to public transport and bicycle infrastructure is valued by tenants. Contrary results can be found in a survey on office users in Singapore (Addae-Dapaah *et al.*, 2009). The study shows that users are aware of and appreciate the benefits of green buildings but are not willing to pay higher prices or rents. The authors' explanation is that there is an apathy towards environmental issues in the context of commercial real estate in Singapore. Parallels can be made here with the study by Renneboog (2008) and, again, it is emphasised that it is crucial to consider country-specific attributes in relation to sustainability, as proposed by Park and Jang (2021) and Arocena *et al.* (2021).

2.4.4 ESG benefits through cost reduction and risk mitigation

But considering ESG measures does not only provide higher returns and market value, it can also lead to reduced costs (Schieg, 2009). There is a lower risk of default of technical equipment (Lützkendorf and Lorenz, 2005) and less consumption of water and energy, as well as lower waste and disposal costs (Henisz *et al.*, 2019; USGBC, 2022). Further usage of raw materials and exposure to fines and penalties is reduced while climate change resistance is increased (Henisz *et al.*, 2019). However, if the consideration of ESG in the development of real estate projects brings benefits for the project, the company, and stakeholders, it can also be concluded that the non-consideration of ESG is associated with risks, or at least with competitive disadvantages. Schanzenbach and Sitkoff (2020) argue that

social and environmental factors especially may help to identify, for example, political, regulatory or litigation risks. As corporate governance may influence the project-level less, it appears to be less relevant in the context of this thesis but also good governance in project management is important to mitigate risks. Through bad governance, project managers could lose access to important resources or support from municipal administration or politics (Henisz *et al.*, 2019). Buildings that do not incorporate sustainability are expected to experience premature write-downs as they could be considered to be stranded assets (Herr, 2011; Buhr, 2017; Hirsch *et al.*, 2019). If climate adaptation measures are considered during the development process of a real estate project, resilience can be incorporated and the risk due to extreme weather conditions can be reduced (Chin *et al.*, 2021). Through ESG considerations, compensation risks can also be averted (Lützkendorf and Lorenz, 2005). Not considering social aspects in real estate projects can lead to reductions in market value by nearly 20%. The same is expected for neglecting other ESG measures in real estate projects as reduced value is expected for projects with high carbon emissions, usage of toxic materials, unfavourable infrastructure, or inadequate working conditions (HTW Berlin and CC PMRE, 2023).

2.4.5 ESG benefits for credit and insurance ratings

Apart from the mere discussion of costs and returns, the important aspect of project financing and insurance has to be considered as well. Selch (2021) argues that implementing ESG measures in real estate developments allows developers and asset owners to take advantage of a multitude of unique financing options. Also, it has been identified that the default risk of sustainable buildings can be reduced by up to 34% due to a more favourable loan-to-value ratio through a premium that can be related to sustainability measures. Additionally, loans on sustainable buildings have better financing terms compared to those on buildings that do not consider sustainability, although the effect is economically small in comparison to the reduced default risk (Lapinski *et al.*, 2006). Leutner *et al.* (2024) investigated European commercial real estate loans and identified that buildings that consider green or sustainability measures, enjoy significantly lower contracted loan spread and lower target spread compared to buildings without sustainability considerations. These financing incentives are also mentioned by Akin and Akin (2024), who identified finance grants, green finance mechanisms, and even tax credits for sustainable real estate in their study on the United Kingdom real estate industry. In addition to better financing options, insurance

premiums can also be positively affected by ESG considerations, as climate change adaptation measures are playing a role in the development process of ESG buildings (Cloutier, 2020; Robinson and McIntosh, 2022).

2.4.6 Intangible ESG benefits

Leading the discussion away from ESG benefits that have direct and measurable effects on the financial performance of companies and buildings, other intangible benefits could be identified. According to Henisz *et al.* (2019), working in sustainable buildings can boost employee motivation and attract talents through greater social credibility. Further Henisz *et al.* (2019) mention higher customer attraction and better access to resources through stronger community and government relation as an ESG benefit. This is also supported by Dounmanee *et al.* (2024), who identify that projects prioritising ESG aspects often are socially recognised and receive more attention. Godfrey *et al.* (2009) see positive attributions from stakeholders through companies that behave in a socially responsible way and identified a goodwill created through sustainability and responsible measures. Incorporating sustainability measure in real estate projects can also, more generally, lead to marketing and image advantages, as identified by Lützkendorf and Lorenz (2005) and Schieg (2009). The goodwill mentioned by Godfrey *et al.* (2009) is also often viewed under the light of corporate social responsibility (Du *et al.*, 2011; Falkenberg and Brunsæl, 2011; Henisz *et al.*, 2011). It was identified that companies with higher activities in sustainability or social responsibility are perceived as beneficial by public and social stakeholders, leading to better market entry options, competitive advantage, and deregulation.

Part V: Literature-derived conceptual framework

The fifth part of this chapter concludes the key insights of the literature review with regard to the research questions and the research aim. A conceptual framework was developed that includes the key literature-derived concepts. First, the function of the conceptual framework will be outlined. Then, the literature-derived concepts will be discussed in detail and the conceptual framework will be presented.

2.5.1 Function of the conceptual framework

Qualitative research often explores areas that are under-researched and seeks to develop emergent theoretical insights rather than test predefined hypotheses (Creswell, 2003). Following this logic, the literature review was conducted to examine the insights arising from the two fields of ESG and real estate development in relation to the research questions. To anchor the study within the relevant bodies of knowledge, a conceptual framework was developed (*see Figure 2.3*). The conceptual framework is not guided by one specific theory, but by literature-derived concepts relevant to the research problem (Rocco and Plakhotnik, 2009). It was therefore assembled piece by piece by the researcher rather than adopted from the literature as a ready-to-use model (Kumar and Antonenko, 2014). In this sense, the framework supports the systematic exploration of the research problem and helps to situate the study within the investigated knowledge contexts (Rocco and Plakhotnik, 2009; Shields and Tajalli, 2014).

Within this study, the conceptual framework functions as a literature-derived structure that connects the ESG context, the real estate development context, the research questions and the empirical investigation. It does not predetermine the final ESG measures integration framework, but provides literature-derived concepts that guide the examination of ESG integration in real estate development. The conceptual framework does not specify independent, dependent or mediator variables. These terms are more closely associated with quantitative and positivist research designs, where measureable relationships between variables are formulated and statistically tested (Creswell, 2014). In qualitative research, by contrast, a conceptual framework is better understood as a system of concepts, assumptions and theoretical perspectives that guide and inform the research project rather than predetermine causal relationships (Maxwell, 2008; Ravitch and Carl, 2021).

In line with the logic of practitioner-focussed research, the study is primarily oriented towards professional practice rather than conventional theory-testing or theory development (Lester, 2004). Nevertheless, the conceptual framework provides the analytical grounding required to justify the study's conclusions, interpretations and relationships between the investigated concepts (Leshem and Trafford, 2007). It therefore serves both as a practical tool for organising aspects of professional practice inquiry and as a conceptual map that connects the research problem to the research questions and to the potential research destination (Kumar and Antonenko, 2014).

2.5.2 Conceptual framework

Having explained the function and anchoring role of the conceptual framework, the next step is to present the framework (*see Figure 2.3*) and elaborate its literature-derived concepts.

Since this research project draws on two central research fields, these two contexts, namely ESG and real estate development, were selected as the starting point at the content-analytical level (light grey). Each of these contexts is shaped by several concepts and insights, which are displayed to the left and right of the respective contexts.

The **ESG** context is mainly shaped by four literature-derived concepts. The first, *ESG agenda*, shows that ESG is characterised by a dominant corporate-, company- and portfolio-level orientation, with less attention given to project-level implementation in real estate development. Existing ESG research also shows a strong emphasis on environmental objectives, financial performance and quantitative assessment. At the same time, ESG objectives may generate competing demands, suggesting that ESG integration cannot be treated as a purely additive or linear process. These insights indicate the need to examine how ESG can be translated into project-level measures, decisions and practices within real estate development. The second concept outlines that ESG is marked by considerable *conceptual ambiguity*. ESG is frequently linked to, and sometimes used interchangeably with, sustainability, while the term itself remains insufficiently defined in the literature. Rather than representing a fixed and universally agreed concept, ESG can be understood as a socially constructed, subjective and context-dependent phenomenon. This ambiguity is

further shaped by the institutional and regulatory environment, particularly in the European and German context, where ESG discussions are strongly influenced by the EU Taxonomy. In addition, the literature uses various terms to describe ESG-related measures, which reinforces the need to clarify how ESG is understood and operationalised within real estate development. The ESG context is also shaped by *regulatory and market-driven adaptation* pressure. From an institutional perspective, regulation, reporting obligations and certification systems create coercive pressure, making ESG implementation increasingly mandatory rather than merely voluntary or reputational. At the same time, investor expectations, market standards and professional norms create normative pressure by shaping what is considered legitimate and appropriate behaviour in the real estate sector. Thereby, stakeholder interests are diverging. In the European and German context, the EU Taxonomy plays a particularly important role, as it reinforces coercive pressure and is frequently interpreted as a central ESG framework. However, its emphasis on environmental objectives, especially climate change mitigation, also strengthens the dominance of environmental measures within ESG implementation. Lastly, the ESG context is shaped by *ESG performance determinants*. The literature indicates that firm size and available resources affect an organisation's capacity to implement and report ESG measures. ESG performance is also shaped by location-specific conditions, including country-level regulation, institutional expectations and market maturity. In addition, sector-specific characteristics influence which ESG issues are considered material, while ownership structure affects strategic priorities, governance arrangements and the ability to implement ESG-related changes. These insights suggest that ESG integration in real estate development must be understood as context-dependent and shaped by organisational, geographical, sectoral and ownership-related conditions.

The context of **real estate development** is shaped by four concepts as well. The underdeveloped *understanding of developers* characterises how real estate developers are viewed in theory and practice. Existing research provides limited insight into the nature and operations of developers, and empirical interaction with developers remains comparatively scarce. This is problematic because developers do not operate according to a single uniform logic. Instead, they follow diverse operational logics shaped by business model, ownership structure, project type, risk profile, investment horizon and market positioning. These insights indicate that ESG integration cannot be examined only at the level of ESG requirements, but must also consider how developers interpret, prioritise and operationalise

ESG within their specific organisational and project-level contexts. Further, the *complexity of real estate development* becomes apparent in its interdisciplinary and multidisciplinary decision-making, which involves the interaction of market, planning, design, financial, regulatory and construction-related considerations. Rather than following a linear sequence, real estate development is commonly described as an iterative and flexible process that requires continuous adjustment to changing project conditions, stakeholder requirements and market dynamics. However, the process-centric nature of real estate development remains insufficiently examined in the literature. Existing research often treats development through the lenses of project management, finance or investment, while the broader end-to-end value creation logic of development receives less attention. At the same time, real estate development remains an evolving and partly undefined field of research, with concerns regarding the limited practical relevance of existing studies and the dominance of quantitative methods. These insights suggest that ESG integration must be examined not only as a set of measures or performance outcomes, but as a process embedded in the complex, iterative and practice-oriented nature of real estate development. Additionally, the real estate development context is shaped by a *process-centric structure*. It can be conceptualised through process-focussed visualisations, particularly event-sequence models that describe development as a progression of interrelated phases and decisions. The literature identifies several recurring stages, including project initiation, project conception and feasibility assessment, project concretisation, securing the project and plot, project management and construction, and project marketing. These stages show that real estate development is not limited to the construction phase, but involves an end-to-end process through which land, capital, planning, design, market positioning and delivery are coordinated. These insights are relevant for the conceptual framework because they define the process structure within which ESG measures must be integrated. ESG integration therefore needs to be examined not only in terms of which measures are relevant, but also in terms of when and where these measures can be embedded across the real estate development process. *ESG in the real estate industry* is closely associated with sustainability and increasingly functions as a framework for environmental sustainability, social responsibility and governance at both company-level and project-level. However, the literature also points to an ESG delivery paradox: While ESG expectations from investors are increasing, their practical translation into project delivery can only be operationalised by real estate developers. This creates a gap between ESG ambition and ESG implementation. Sustainable

project delivery therefore becomes a central issue, as ESG objectives must be converted into concrete project-level decisions, processes and outcomes.

At the point where both areas are brought together, the research problem emerges: The insufficient **ESG integration into real estate development** (dark grey). From this research problem, three core themes are derived. With regard to the first research question, the **object of integration** is central, namely the ESG measures to be identified. The literature review has already provided relevant insights into ESG measures, including the strong focus on environmental measures and energy efficiency. The second research question addresses the **rationale for integration**. This concerns why developers should integrate ESG measures into their real estate development activities and, in other words, which ESG benefits may be achieved in relation to project success. Here, too, the literature has already generated important insights, particularly the strong focus on financial performance and the existence of several project-level benefits. The third research question focusses on the **conditions of integration** itself. Particularly with regard to the ESG measures integration framework to be developed, it is important to examine which integration factors, barriers and enablers exist. Although the literature review and the conceptual framework provide an important foundation for addressing the research questions, they can only offer a partial answer. For this reason, the **empirical investigation** is included at the bottom of the conceptual framework. Its position indicates that the research questions can only be answered fully through the interview and focus group findings, which are required to refine the literature-derived concepts and develop the final research contribution.

From a theoretical perspective, the literature-derived concepts incorporated into the conceptual framework draw primarily on real estate development theory aspects and a conceptual understanding of ESG. In addition, selected aspects of institutional theory, stakeholder theory and paradox theory inform the framework by helping to explain the regulatory and market pressures, stakeholder-related coordination requirements and tensions that shape ESG integration in real estate development.

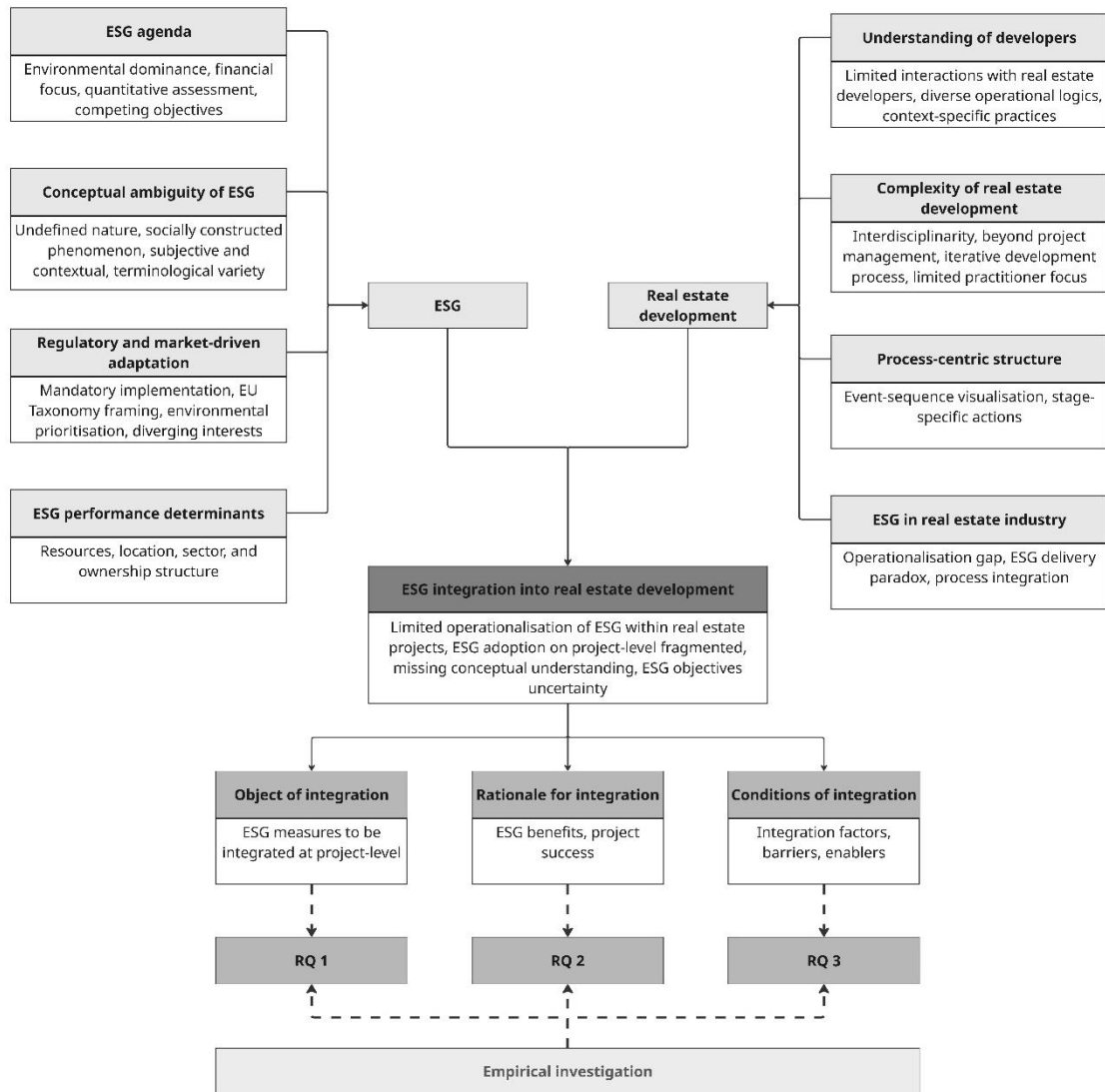


Figure 2. 3: Conceptual framework

Source: Researcher (2026)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology and the rationale behind the chosen research methods. The philosophical assumptions of a researcher and a research project form the foundation of any study. Building on this, decisions regarding the research paradigm, assumptions about theory development, and finally the chosen research design and strategy are made in reflection of the research questions. This chapter explicitly outlines why a predominantly interpretivist approach was adopted for this study, while also incorporating elements of a pragmatic research philosophy. It justifies the use of an inductive approach for theory development and explains the application of abduction, particularly with regard to verifying the research findings. It is explained in detail how the multi-method qualitative research design, consisting of semi-structured interviews followed by the subsequent conduct of focus groups for verification, serves to address the research questions formulated at the outset.

3.2 Philosophical underpinnings

Our own beliefs and assumptions about what is important affects the decisions we make through our lives and in a research project (Saunders *et al.*, 2019). Therefore, the process of exploring and understanding one's own research philosophy requires one to question one's own thinking and actions and learn to examine one's own beliefs with scrutiny (Haynes, 2012b). The following sections present the researcher's epistemological, ontological, and axiological considerations in the context of this research project.

3.2.1 Epistemological considerations

Epistemology concerns how knowledge is generated, what is considered valid knowledge, and how it can be communicated (Bryman, 2012; Burrell and Morgan, 2016). In business and management research, different types of knowledge such as texts, numerical data, visual data, facts, and opinions can be considered as legitimate (Saunders *et al.*, 2019). Real estate research often adopts an objectivist stance, favouring quantitative methods and assuming

that facts outweigh opinions, and numerical data is superior to qualitative accounts (Newell, 2023a). This implies that valid knowledge must lead to generalisable, law-like conclusions (Saunders *et al.*, 2019). Newell (2023), however, calls for real estate research to move beyond the dominant quantitative paradigm to gain richer, more nuanced insights – a view highly relevant to this study. While the field's objectivist leanings may be explained by its links to finance and investment, and ESG's origins in these areas, a broader review reveals that this stance is insufficient. Real estate research spans disciplines such as management, engineering, and project management. Moreover, ESG lacks a universally accepted definition, and researchers increasingly highlight its subjective, heterogeneous, and contextual nature (Hayat and Orsagh, 2015; Schanzenbach and Sitkoff, 2020). This understanding challenges the objectivist tradition and supports Newell's (2023) position. Given the aim of this study, epistemological assumptions must be reconsidered. If ESG is shaped by context and interpretation, then contributions to knowledge must reflect individual meanings rather than universal laws. Acceptable knowledge includes both facts and opinions, and high-quality data must encompass not only numbers but also written, spoken, and interpretive insights.

3.2.2 Ontological considerations

Ontological assumptions are as important as epistemological assumptions. Ontology refers to assumptions about the nature of reality. In business and management research, ontological assumptions on research objects include organisations, management, individuals, working lives, organisational events, and artefacts (Saunders *et al.*, 2019). Referring to ESG, ontological assumptions that follow a more objectivist paradigm would describe the ESG concept as real, just like a physical object (Saunders *et al.*, 2019). Bryman (2012) outlines an opposing ontological stance, presented as a viewpoint regarding social objects and categories. This perspective regards these entities as socially constructed. Here, a connection can be drawn to the statements on the nature of ESG by Hayat and Orsagh (2015), Eccles *et al.* (2020) and Schanzenbach and Sitkoff (2020). These scholars describe ESG as a socially constructed phenomenon and provide arguments to see ESG from a more subjectivist ontological perspective. Bryman (2012) argues that ontological assumptions and commitments will feed into ways in which research questions are formulated and research is carried out. Looking at the research questions from a more subjectivist stance, it becomes obvious that there is no external and universal set of ESG measures or ESG benefits. These

measures and benefits are probably more contextual and individual as this relates to the nature of ESG. The same appears with the research aim. Viewing this aim from a subjective ontological position means that the framework is not generalisable to all projects, project developers, locations, and situations. It has to consider the heterogeneity of real estate and the subjectivity as well as the contextuality of ESG.

3.2.3 Axiological considerations

As values guide all human actions (Heron, 1996), their consideration directly impacts this research. Axiology concerns the role of values and ethics in research (Saunders *et al.*, 2019), reflecting personal beliefs or feelings (Bryman, 2012). Bryman (2012) further notes that values can shape every stage of research – from topic selection to data collection. This is critical, as the researcher's personal conviction that ESG performance in real estate must improve to generate social and environmental benefits was the driving force behind the choice of research focus and questions. While some advocate for value-free, objective research, it is increasingly accepted that researchers cannot fully suppress personal beliefs. Instead, it is vital to ensure values do not unduly distort the research process. Researchers must be self-reflective and transparent about potential biases and assumptions, as these may shape findings (Bryman, 2012). Values do not only influence this research from the side of the researcher. Sabini *et al.* (2019) argue that sustainability, such as ESG more generally, is a value-based concept and therefore values held by practitioners will be influential in achieving sustainability in projects. This means that, when conducting a research project in the field of ESG, the values of both the research participants and the researcher are potentially affected. Like in ontology and epistemology also, axiology can be viewed from an opposite perspective. The viewpoint highlighted is a subjectivistic one. Looking at the role of values from the other extreme set of the continua between subjectivism and objectivism would mean that research should be value-free and that the values of researchers and research participants should be detached from the research project (Saunders *et al.*, 2019). It becomes evident quite swiftly that this perspective on axiology is not applicable, neither for the researcher nor the present research project, as the consideration of values, particularly those of the research participants, is of paramount importance in a research project within the field of ESG.

3.3 Research philosophy

Crotty (2003) and Saunders *et al.* (2019) assert that a research philosophy – or paradigm – shapes a researcher's core assumptions about knowledge generation. This is critical, as researchers make assumptions throughout the research process (Burrell and Morgan, 2016). These epistemological, ontological, and axiological assumptions shape the researcher's understanding of research questions, the methods used, and how findings are interpreted (Crotty, 1998). A coherent set of assumptions forms a credible research philosophy and underpins methodological and strategic choices (Saunders *et al.*, 2019). Bryman (1988) describes a paradigm as a constellation of beliefs that guide what is studied, how it is researched, and how findings are interpreted. However, in a follow-up publication it is criticised that paradigms overly rely on methodological-epistemological connections, arguing that social sciences lack a dominant paradigm (Bryman, 2012).

In business and management research, five major philosophies are commonly cited: positivism, critical realism, interpretivism, postmodernism, and pragmatism. Positivism – linked to natural science – has dominated real estate research through empirical, quantitative methods (Guy and Henneberry, 2000; Newell, 2023a). It seeks objective, value-free facts. Given the aims of this study, however, a positivist philosophy is less appropriate. On the other end of the spectrum lies interpretivism, developed in opposition to positivism and rooted in subjectivism (Saunders *et al.*, 2019). Interpretivists argue that studying people, institutions, and organisations requires approaches suited to human complexity (Bryman, 2012).

Interpretivism was the research philosophy with the highest relevance for this research project for several reasons: interpretivist researchers see the nature of reality as complex, rich, and socially constructed. Again, reference to Eccles *et al.* (2020) can be made to describe ESG as socially constructed. For interpretivists, interpretations, meanings, and experience are acceptable knowledge. Referring to Schanzenbach and Sitkoff (2020) and Hayat and Orsagh (2015), who point out the subjectivity and contextual nature of ESG, the relevance of interpretivism for a research project in the field of ESG became obvious. In the prevailing literature, the field of real estate development has been scrutinised through the lenses of various theoretical perspectives. Nevertheless, the viewpoint of real estate developers remained largely unexamined. Consequently, research findings were

characterised as lacking integration and were deemed to possess limited practical applicability. To address the research questions of this study, it appeared imperative to incorporate the perspective of real estate developers. Grounding the framework in the experiences, perceptions, and opinions of industry practitioners became an inexorable necessity.

While critical realism and postmodernism offer other positions – focusing on underlying structures and power dynamics, respectively – they were deemed less relevant here (Groff, 2004; Saunders *et al.*, 2019). Pragmatism, by contrast, bridges positivism and interpretivism. It emphasises practical, context-driven solutions (Morgan, 2013), and is often not treated as a single philosophy but as a pluralistic approach (Kaushik & Walsh, 2019). Pragmatist researchers, like interpretivists, view reality as complex and socially situated, but focus more on actionable outcomes and real-world problem-solving. Although interpretivism appeared to be the most relevant research philosophy, some aspects of pragmatism have been applied to the research project. For pragmatists, the practical meaning of knowledge in a specific context is what constitutes acceptable knowledge, and research is initiated by the researcher's doubts and beliefs. At this point, reference can be made to the researcher's previous axiological assumptions (*see Section 3.2.3*). Perhaps the most compelling rationale for considering a pragmatic philosophy in this research project is its emphasis on practical solutions and a focus on the outcome of the research project. Pragmatic researchers initiate their research project with a problem, which in this work was described as the inadequate integration of ESG criteria into German real estate development projects. The pragmatic researcher aims to provide practical solutions that can inform future practices (Saunders *et al.*, 2019). This contribution served as the motivation behind the research questions. Goldkuhl (2012) argues that pragmatist research is an inquiry that is an investigation into some part of reality with the purpose of creating knowledge for a controlled change of this part of reality. If the field of real estate development is perceived as a part of reality, the integration of ESG measures to achieve improved project performance can be perceived as the intended controlled change of reality.

At this juncture, it becomes evident that the critique of the strict categorisation of research paradigms by Bryman (1988) is valid and perhaps not conducive to this research. Bryman criticises paradigms because they "*dictate*" (1988, p.4) to the researcher how to conduct their

research. However, it became clear that, while predominant elements from the field of interpretivism have been applied, various aspects of a pragmatic research philosophy also held significance in addressing the research questions. Combining research philosophies is becoming more common, especially in business research (Goldkuhl, 2012; Bogna *et al.*, 2020; Sanchez *et al.*, 2023). This approach is based on moving beyond focusing on paradigm differences and working from an alternative framework by recognising that research relates to epistemological and ontological assumptions, but the connections are not fixed and ineluctable (Wicks and Freeman, 1998; Goles and Hirschheim, 2000; Goldkuhl, 2012). Reflecting on the research aim of this study, it becomes obvious that the researcher took an interpretative and exploratory stance that aimed to understand how ESG can be best integrated into real estate development projects in Germany to enhance project performance.

3.4 Theory development

The extent to which a research project is concerned with theory testing or theory building raises an important question regarding the design of the research. These approaches are often portrayed as two contrasting approaches to the reasoning adopted by the researcher – either inductive or deductive (Saunders *et al.*, 2019). The underlying thought on the approach to theory development is about the nature of the relationship between theory and research. If a theory guides the research a deductive approach is chosen. If theory is an outcome of the research project, this approach is likely to be inductive (Bryman, 2012). Bryman (2012) further argues that to a large extent, deductive and inductive strategies are possibly better thought of as tendencies rather than as a hard-and-fast distinction. A combination of inductive and deductive reasoning in which the research moves back and forth is known as abduction (Suddaby, 2006). With abduction, the researcher collects data to explore a phenomenon and identifies themes and patterns to generate a new theory, which will be tested through additional data collection (Saunders *et al.*, 2019). With similarities to Bryman (2012), Saunders *et al.* (2019) argue that pure deduction or induction is difficult to achieve; most research in the fields of business and management in practice uses at least some element of abduction. Saunders *et al.* (2019) further argue that, even if abduction is used as an approach to theory development, one approach, either induction or deduction, is dominant.

Although this study involved abductive movement between prior literature and empirical findings, it adopted a primarily inductive orientation to theory development, because the main insights emerged from the interview data.

Induction was used primarily in the interview stage of the research. In this study, the literature-derived themes functioned as sensitising concepts that informed the interview guide and early analysis without predetermining the findings (Bowen, 2006). Although the study was informed by an initial literature review and a literature-derived conceptual framework, the semi-structured interviews were not designed to test that framework. Rather, the interviews allowed new themes to emerge from the empirical data. The emerging themes were used to address the research questions and formed the initial development of the empirically grounded ESG integration framework. In this sense, theory development was grounded primarily in the interview findings rather than derived directly from pre-existing theory. Choosing an inductive approach means that data collection will be used to explore a phenomenon and to identify themes and patterns in the data (Saunders *et al.*, 2019). In this research project, data was used to explore the phenomenon of ESG integration within the specific context of German trader-developers. Referring to the research questions, it became clear that the measures and benefits can be seen as themes and patterns.

Abduction was used in the iterative movement between the literature-derived themes and the empirical findings. After the initial interview analysis and ESG framework development, the findings were contrasted with the conceptual framework in the discussion chapter in order to identify alignments and misalignments between prior theory and the empirical results. Where the findings extended, challenged, or refined the initial conceptualisation, the emerging explanation was reconsidered and further developed. The focus groups, conducted as a second stage of data collection were primarily verification-oriented and introduced a later deductive element, although they also allowed limited refinement where additional patterns emerged.

If reference is made to the previous section, where discussions about different research philosophies were conducted, and it was established that interpretivism is particularly relevant to this work while also incorporating elements of pragmatism, it can be concluded that these align with the considerations regarding the approach to theory development. This

is because interpretivism shows a high significance for an inductive approach and pragmatism is often used within an abductive approach to theory development (Saunders *et al.*, 2019).

3.5 Research design and strategy

The research strategy is the general orientation of the conduction of social research on a plan of how the researcher will go about answering the research questions expressed in the first chapter of this research project (Bryman, 2012; Saunders *et al.*, 2019). There is no clear demarcation between the conceptual terms of research design, research strategy, and methodological choice. Nuanced distinctions in the classification and definition of these terms can be found in the works of Saunders *et al.* (2019) and Bryman (2012).

At first, a decision regarding the use of either quantitative, qualitative, or mixed methods research design was made. Each research design carries with it striking differences in terms of the role of theory, epistemological issues, and ontological concerns (Bryman, 2012). One way of distinguishing quantitative and qualitative research designs is to distinguish between whether the data collected is numeric data or non-numeric data. Denzin and Lincoln (2018) hold that, within an interpretive research philosophy, a qualitative research design is often employed. This is because the research has to make sense of the subjective and socially constructed meanings of a specific phenomenon (Saunders *et al.*, 2019), such as ESG in the context of real estate development in Germany. This is underlined by Bryman (2012), who refers to the epistemological position that is based on the understanding of the social world through examination of the interpretation of that world by its participants as a feature of qualitative research. But it is not only ESG that is considered to be socially constructed. Bell and Bell (2015) argue that, although real estate can be described in terms of square footage, acreage, sales prices and interest rates, the human component is crucial but often neglected. In simplified yet explicit terms, they elucidate “*properties do not make deals with each other, people do*” (Bell and Bell, 2015, p.315). They go on to elaborate that real estate market participants have particular backgrounds, motivations and perceptions towards real estate that influence other participants and thereby potentially have a direct impact on quantifiable data and market dynamics. By quoting the Appraisal Institute (2013), they conclude that qualitative information is an essential part of the overall picture of real estate markets. Building on this foundation, the study is designed as a qualitative study. **Section 3.6** will

further elaborate why this study made use not only of a single qualitative technique, but a multi-method qualitative study design.

In the context of this study, the overall research strategy can be characterised as sector-wide. Rather than focusing on a single organisation, project, or case, the study addresses ESG integration across the broader German real estate development sector. The intention is therefore to generate insights that reflect sector-level dynamics, practices, and perspectives relevant to real estate development. This sector-wide orientation is consistent with the objective of developing a process-centric and developer-focussed ESG integration framework that is informed by the wider field rather than by one isolated empirical setting.

This research is set out as an exploratory study as a richer understanding of how to integrate ESG measures into the real estate development process shall be gained. Exploratory research is particularly useful if an understanding of an issue or phenomenon, such as ESG in the context of real estate development, should be clarified (Saunders *et al.*, 2019). The core of exploratory research, according to Swedberg (2020), consists of an attempt to discover something new and interesting, such as an ESG integration framework, by working one's own way through a research topic.

The element of time plays a significant role in achieving the research aim as ESG is a dynamic research field. This is primarily because the ESG concept is relatively new, and, as a result, research and legislation in this area are continually advancing. Therefore, a cross-sectional time horizon was chosen for this research project.

3.6 Methods of data collection

This research project employed a multi-method qualitative approach to data collection, which was preceded by a theoretical literature review. First, the current state of knowledge in the field of real estate development and ESG was discussed. Further, the research project involved two consecutive stages of data collection. The first and primary method of data collection was semi-structured interviews, followed by focus group discussions as the second stage with the purpose of verification and refinement. The methods of data collection were approved by the Ethics Committee of the University of Worcester (*see Appendix 1*)

3.6.1 Literature review

The literature review presented in *Chapter Two* represents the theoretical and conceptual foundation for this research project. As the research topic of this work draws from two distinct research domains, namely ESG and real estate development, various research fields have been examined to present the current state of research. For instance, research in the field of ESG is significantly influenced by the domain of finance and investment. On the other hand, research in real estate development is even more diverse, encompassing areas such as management, urban planning, engineering, project management, and so forth. In this context, Saunders *et al.* (2019) emphasise that research projects in the domain of business and management research often draw from a range of literature, likely relying on various business disciplines. The inductive approach to theory development, which underlies this work, also had implications for the literature review. Bryman (2012) explains that defining the main theoretical and conceptual terms that delineate the research area before qualitative data collection is problematic, as, in inductive research, theory emerges as a result of the study, rather than serving as its foundation. Therefore, during the course of researching a topic, the researcher may uncover issues that were not previously anticipated as being significant within the area of study. Interpretive researchers are prone to altering their perspective on theory or literature as a consequence of data analysis, necessitating heightened reflexivity in order to adapt to the boundaries of the research subject as the study progresses (Bryman, 2012). According to Bruce (1994) there are several ways in which the review process can be understood. This research perceived the literature review as a written discussion concerning the prevailing literature, drawing from previously conducted investigations. The researcher's primary objective was to construct a written discourse on the literature and developing literature-derived themes which were presented in a conceptual framework. This framework serves as an integral component of the research report, and thereby also informing the research questions. Only after a comprehensive literature review has been conducted can it be used as a basis for formulating a guide for the interviews and focus groups (Kallio *et al.*, 2016). The literature review provided an essential foundation for mapping previous knowledge in the fields of ESG and real estate development and thereby assists the researcher in planning narratives for the fieldwork. The presented literature and identified issues have been compared with the findings of the fieldwork, as suggested by May (2002).

The themes derived from the literature were essential for establishing a foundational and conceptual understanding of the research topic. In this way, the literature review also contributed to informing the research questions. In an iterative process, for example, the wording previously used, “ESG metrics,” was replaced by the broader term “ESG measures” on the basis of insights gained from the literature review. The review indicated that the metrics term might be too restrictive in relation to the overall research aim. In addition, it became evident that ESG benefits cannot be considered independently of project success, which led to the integration of a project success enhancement component into the third research question. Furthermore, the literature review already assisted in answering the research questions by identifying current ESG measures and benefits discussed in the literature, while also generating key insights into the integration of ESG measures from previous research. Although the formulation of the research questions clearly indicated that engagement with practitioners in the real estate industry was necessary in order to answer them conclusively, the literature review nevertheless helped to substantiate the answers from a theoretical perspective. Thus, the literature review not only established a foundational and conceptual basis for the study, but also guided the subsequent research process, informed the research questions, and supported their eventual answering.

3.6.2 Semi-structured interviews

There are several types of qualitative research techniques such as interviews, focus groups, and observations, among others, which could be applied in a qualitative research design and a cross-sectional research strategy. The interview is the most widely employed method in qualitative research (Bryman, 2012). To address the research questions of this study, direct interaction with real estate development practitioners was necessary. Interviews have been considered the most effective way to capture the experiences and perceptions of the practitioners, which have been essential for answering the research questions. In this sense, Creswell (2014) notes that qualitative information can only be established through direct interactions with people, allowing them to tell stories unencumbered by what the researcher expects to find or what has been read in the literature. With a subjective interview approach, the collected data is viewed as being socially constructed by the views and interpretations of the research participant and by the interviewer who asks, responds, and interprets (Denzin, 2001; Heyl, 2001 cited in Saunders *et al.*, 2019). Saunders *et al.* (2019) further note that a subjective interview approach recognises the role of the researcher as interviewer in the

process of constructing meaning and emphasises the need for reflexivity to reflect on and evaluate the interviewing approach. With the in-depth insights gained from the interviews, it was possible to answer the posed research questions as comprehensively as possible. The specific interview questions enabled the researcher to obtain an overview of the most important ESG measures and ESG benefits, as reflected in the first and second research question. Building on the insights already generated through the literature review in relation to these two research questions, this approach made their answering possible. The interviews were also central to addressing the third research question. Through the questions on ESG integration, the researcher was able to develop an understanding, from the perspective of the research participants, of the key factors shaping the integration of ESG measures. In addition, the interviews enabled the development of the initial ESG measures integration framework. However, in order to answer the third research question more fully, it was necessary to conduct focus group discussions.

This research study made use of semi-structured interviews. With the help of semi-structured interviews, it was possible to address the research questions most effectively. The interviews were started with a predetermined list of themes and key questions relating to the research questions of this study (*see Appendix 2*). The list of themes and questions was seen more as a literature informed interview guide and could be handled flexibly and as contingent on the participant's reaction (Saunders *et al.*, 2019). Further, it was possible to ask questions that are not part of the interview guide to pick up on things said by the interviewees (Bryman, 2012). This form of interview appeared most suitable for the research project, as it allowed for the establishment of a foundational framework within which interviewees could be queried about their fundamental perceptions of ESG in real estate development and, subsequently, delve deeper into the topics of current ESG measures and ESG benefits. Depending on the course of the interview, semi-structured interviews provide the flexibility to explore various aspects more deeply, contingent upon the interviewee's experience. It was important, however, to maintain a consistent approach in posing questions, even while benefiting from the flexibility of semi-structured interviews (Bryman, 2012).

Semi-structured interviews can be conducted either as a face-to-face interview in person or online. For this study, online interviews were the preferred approach. Conducting qualitative data collection online offers numerous advantages for both the research participants and the

researcher. While just a few years ago, participation in video conferences could have been overwhelming for research participants, video calls have become part of normal professional and personal communication (Stock-Homburg and Heitlinger, 2022). For several years, video conferences have been used in professional settings and research, leading to substantial cost savings on travel and accommodation (de Villiers *et al.*, 2022). This is particularly relevant in this work as research participants are chosen based on their professional activities, regardless of their location of work or residence. Conducting online interviews allows for full and equal participation for participants, irrespective of their geographical location or any other barriers they may face (Kerr and Murthy, 2004; Morse, 2015). This approach counteracts a regional bias in the sample selection (Poliandri *et al.*, 2023).

The use of qualitative research methods, such as interviews, is widespread in both the real estate and ESG research fields, although quantitative research still dominates (Rowe, 2016; Newell, 2023a). For instance, Newell (2023) conducted a study involving interviews with key real estate players to investigate ESG benchmarking. Interviews are also commonly employed in research on real estate construction projects. Satankar and Jain (2015) conducted interviews with scholars and practitioners to explore success factors for real estate projects. To ascertain the perception of senior practitioners regarding ESG, Rowe (2016) conducted semi-structured interviews. It became evident that the use of semi-structured interviews as a qualitative research method in the current study was rational for three reasons. Firstly, it was a logical derivation from the selected approaches to research philosophy, theory development, and research design. Secondly, semi-structured interviews were best suited for gaining insight into the experiences and perceptions of senior practitioners on the themes of ESG and real estate development. Thirdly, semi-structured interviews have already found successful application in the research fields of ESG and real estate development.

As the research participants all spoke German, the interviews were conducted in German. It is argued that conducting interviews in participants' mother tongue is appropriate for generating in-depth qualitative insights because experiences, metaphors, and culturally embedded meanings are usually expressed most fully in the language in which they are lived. As the researcher and participants share the German language, data collection, transcription, and early-stage coding can remain closer to the original meaning and thus preserve nuance,

when not conducting interviews in English (Welch and Piekkari, 2006; van Nes *et al.*, 2010). Accordingly, the interviews were transcribed verbatim and analysed in the source language, while the material presented in the thesis is translated into English only at the reporting stage. This translation was done through forward translation, checked in a side-by-side bilingual review, and, for conceptually sensitive quotations, verified through back-translation to reduce semantic drift (Brislin, 1970; Temple and Young, 2004; van Nes *et al.*, 2010).

3.6.3 Focus groups

In light of a crucial component of the third research question of this study, which also involves the verification of the ESG integration framework under development, an additional qualitative research method was employed, thereby adopting a multi-method qualitative research approach. The focus groups were conducted after the primary data collection, analysis and interpretation. The purpose of focus groups was to verify the research findings, the verification of the initial ESG measures integration framework and finally, the refinement of the developed framework.

Focus groups take the form of an interview format in which a small number of people are interviewed on a particular topic simultaneously, and interaction among research participants is explicitly encouraged (Wilkinson, 2004). Participants for the focus groups are selected based on their richness of information pertaining to a specific theme that is to be explored in depth (Bryman, 2012; Krueger and Casey, 2014). Focus group discussions were used in this research project as this method is well suited for exploratory studies in research fields that are under-researched or to study an emerging phenomenon (Brinkmann, 2014). Hence, the focus group was utilised as a method for verifying the preceding research findings or as a quality control on previous data collection, as argued by Patton (1987). In the context of focus groups, the emphasis is on how individuals discuss a particular issue as members of a group. The researcher relies on the extraction of views, experiences, and perspectives of the research participants regarding a specific theme. In the application of focus groups within this research study, the specific theme was the ESG measures integration framework. Accordingly, conducting focus groups was essential to fully address the third research question.

Through discussion and interaction within the group, a joint construction of meaning was intended to take place, thereby facilitating the testing of the framework. The goal was for individuals to challenge each other's perspectives on how to integrate ESG measures into the process of real estate development through discussion and argumentation (Bryman, 2012). The discussions followed a predetermined list of questions as presented in the focus group guide (*see Appendix 3*). The focus group guide served only as guidance, providing a framework for the discussion topic. A focus group discussion should not be conducted like an interview with multiple people; rather, it aims to facilitate a discussion among the participants. Similar to the initial phase of data collection, the focus group discussions were conducted online, as this approach was deemed advantageous for the same reasons as the online interviews. An additional rationale for conducting focus groups online was the elimination of the need for participant travel. Given that focus groups typically involve multiple participants, a physical meeting would inevitably require travel. Furthermore, the literature has consistently noted that unfamiliar environments and personal interactions with unfamiliar third parties can inhibit the disclosure of information (de Villiers *et al.*, 2022).

Using focus groups as an abductive element to test previously acquired research findings is not a novel approach. For instance, Halecker (2015) conducted a research project in management research and employed focus groups with practitioners to test a compiled concept. Focus groups also play a role in research in real estate, sustainability, and ESG, especially when validating or developing specific factors, indicators, or concepts with market participants or practitioners. Masuri (2015) used focus groups to validate research findings in a research project on the real estate development process in the context of facility management. In a qualitative exploratory study, AuYong *et al.* (2018) used focus groups with property industry players to determine factors influencing real estate prices. Likewise, Ho *et al.* (2021) used focus groups in a mixed-method approach to deliberate on and shortlist key performance indicators for real estate retrofits to achieve a contribution to a sustainable built environment. A further focus group study in sustainable real estate was conducted by Hanson *et al.* (2006), who used focus groups to determine the influence of energy efficiency on real estate purchasing decisions. Thus, the selection of this method demonstrated its ideal alignment with the element of verification, which plays a significant role in achieving the research aim.

Focus groups were conducted in German. In focus groups especially, it is recommended to use participants' native language because participants can respond more spontaneously, build on one another's comments more naturally, and express culturally embedded meanings, emotions, and everyday language with greater precision than they often could in English. This helps preserve the depth and interactional richness that make focus groups analytically useful (Squires, 2009; van Nes *et al.*, 2010; Alzyood *et al.*, 2020). As with interview data, the focus group data was translated through forward translation, checked in a side-by-side bilingual review, and, for conceptually sensitive quotations, verified through back-translation to reduce semantic drift (Brislin, 1970; Temple and Young, 2004; van Nes *et al.*, 2010).

3.6.4 Sampling

This work aims to explore the perspectives of senior project practitioners, individuals working with or for real estate developers. The focus was particularly on their viewpoints regarding ESG and real estate development. This sample was chosen because senior project practitioners are directly involved in developing projects and integrating ESG practices, thus offering a wealth of practical experience. Their perspectives were precious since there is limited research and data available in the context of ESG within German real estate project development. The focus was on examining the individuals, not the company for which a senior project practitioner worked. The personal experiences, opinions, and assessments of the practitioners took precedence. An in-depth study of a specific context is particularly suitable when the sample provides the researcher with an information-rich study, allowing for the exploration of research questions and the acquisition of specific theoretical insights (Ishak and Bakar, 2014; Saunders *et al.*, 2019; Islam and Aldaihani, 2022). Subsequently, the population consisted of all real estate trader-developers in Germany.

By selecting a sample from this target population, the focus was narrowed to real estate development experts who were developing sustainable real estate projects or projects that considered ESG measures in Germany with the purpose of selling these projects. When selecting a sample of a target population, two types of techniques can be applied, either probability or non-probability sampling (Saunders *et al.*, 2019). With probability sampling the chance of each case being selected from the target population is known and equal for all cases. With probability samples it is possible to answer research questions that require the

characteristics of the target population to be statistically estimated from the selected sample. With non-probability sampling, the probability of each member of the population being selected is unknown. As a result, it is not possible to make statistical inferences about the characteristics of the target population (Saunders *et al.*, 2019). While probability sampling is mostly associated with quantitative research methods, the discussion of sampling in qualitative research revolves around the notion of non-probability sampling and within this field around purposive sampling (Bryman, 2012). For this research project, a purposive sampling technique was the most suitable approach. According to Bryman (2012), this technique is conducted with direct reference to the research questions, ensuring that research participants are selected based on criteria that will facilitate the answering of research questions. However, when opting for purposive sampling as a sampling technique, it is crucial to acknowledge that the extent to which the researcher can generalise from research findings is limited (*see Section 3.9.1*).

When selecting research participants, four criteria have been applied.

Criterion I: Germany

The selection of research participants was confined to the German market. This was primarily justified by the fact that the perception of ESG varies by country and because legislation varies from one country to another (Sachs *et al.*, 2022; EPI, 2023). Therefore, participants had to either work in Germany or be involved in German real estate development projects.

Criterion II: Real estate trader-developer

The business model of a real estate developer has significant implications for decision-making processes, especially concerning ESG. This study focussed on the most prevalent type of developer in Germany (trader-developer). This choice was justified by the fact that, due to its market share, this type holds relevance for the real estate market. Furthermore, ESG is of paramount importance to this type since the business model of the trader-developer is closely intertwined with the ESG-driven finance and investment market. Therefore, research participants either have been employed by or worked with a trader-developer.

Criterion III: Senior project practitioners

The research participants have been senior project practitioners involved with real estate development. There are different opinions regarding whether five years or 10 years of professional experience are sufficient to be considered a (senior) project manager (Edum-Fotwe and McCaffer, 2000; Hamersly, 2015). Citing the research of Meuser and Nagel (1991), for this study, the emphasis is on access to rich information rather than fixating on a specific number of years of professional experience. Especially given the dynamic evolution of ESG knowledge, it was established that a research participant should have at least five years of professional experience in sustainable project development or should be able to objectively demonstrate extensive experience in sustainable real estate development in alternative ways.

Criterion IV: Outside researcher's sphere of influence

The researcher is currently working in the real estate industry. The researcher is conducting this research project as external research and will ensure that the participants involved in this research project are outside the researcher's sphere of influence. No co-workers have been part of the data collection as it was the intention to avoid a situation where the participants only took part in order to please the researcher or to gain advantages in their everyday working lives.

In addition to these criteria, care was taken to ensure that no two participants were from the same department within a company and there were no more than two participants from one company. Although the data collection focussed on personal attitudes and experiences, the research assumed that a significant portion of experiences related to ESG in real estate development is gained in a professional context. Therefore, surveying too many individuals from the same organisation could introduce bias into the findings.

The research participants have been viewed as experts with valuable knowledge on the researched topic. Expert is a relational status within the context of a specific research question. In this context, expert status does not necessarily pertain only to the top management level but often extends to the second or third tier, as decisions are typically prepared and implemented at these levels, and because the most detailed and comprehensive knowledge of internal structures and events is usually found here (Meuser and Nagel, 1991).

Even when the objective was to elicit individual experiences and perceptions of ESG within real estate project development, the focus was not on probing individual biographies or examining particular cases. Instead, senior practitioners were interviewed as representatives of an organisation, institution, or group, in this specific case, as representatives of real estate trader-developers in Germany (Meuser and Nagel, 1991). The recruitment of research participants was started only after obtaining ethical approval from the University of Worcester's Ethics Committee (*see Appendix 1*).

3.6.5 Sample size

In academic discourse, the question concerning the sample size in research projects is a subject of frequent and diverse discussion. In essence, it can be affirmed that qualitative research strategies, which predominantly adopt an inductive approach to theory development, place their primary emphasis on acquiring novel insights and developing knowledge. Consequently, this necessitates a more intensive engagement with research participants. Hence, it can be asserted that qualitative research strategies typically entail smaller sample sizes in comparison to quantitative research methodologies (Mason, 2010). In the present study, the sample size was justified on the basis of two complementary considerations. First, recommendations in the methodological literature, and second, the principle of thematic saturation.

With regard to published guidance, Hansen (2021), examined various journal articles in the field of construction and engineering and found that the median sample size was 12. Regarding in-depth interviews, Dworkin (2012) suggests that a range of 5 to 20 participants is appropriate. Braun and Clarke recommend 10 to 20 research participants as appropriate when conducting interviews, while Marshall *et al.* (2013) point to a range of 15 to 30 interview participants. On this basis the study was initially planned with 15 interviews, while there was an option for an extension to a maximum of 20 interviews, if further data was proved necessary.

Beyond numerical recommendations, the final sample size was also guided by the principle of thematic saturation. Saunders *et al.* (2018) argue that saturation must be understood in relation to the specific research aims and analytic approach employed, while Guest *et al.* (2020) frame thematic saturation as a suitable criterion for inductive thematic analysis. This

is further supported by empirical research indicating that saturation in interview studies is often reached within relatively small samples. Hennink *et al.* (2017) found that broad thematic issues often emerged after around 9 interviews, while (Hennink and Kaiser, 2022) conclude that many qualitative interview studies reached saturation within a range of 9 to 17 interviews. In the present study, the researcher ultimately conducted the maximum of 20 interviews, at which point thematic saturation had been achieved, as no substantively new themes emerged from additional data collection. Conducting further interviews was therefore not considered methodologically necessary, particularly given the finite time and resource constraints inherent in doctoral research. **Section 6.4** outlines the sampling of the focus groups in the verification process.

3.7 Pilot study

A pilot phase was conducted for both data collection methods. The pilot phase was used to review the interview questions and tests the researcher's role as an interviewer (Janghorban *et al.*, 2013). Saunders *et al.* (2019) recommend that the pilot phase involve participants who are similar to those who will be involved. These participants underwent interviews and will have the interview questions and the procedure clarified and checked for any ambiguities (O'Cathain *et al.*, 2015). In addition to practitioners, academics such as postgraduate students from the University of Worcester were invited to participate in the pilot study. Conducting interviews with academics allows for a particular focus on whether data collection methods can be further improved. The feedback provided by both industry professionals and scholars is consolidated into a table (*see Table 3. 1*) indicating the impact of this feedback on optimising data collection methods. During the pilot phase, the researcher conducted three interviews.

Table 3. 1: Results of the pilot study

No.	Event	Reflections of the researcher/Changes that have been made
1	One interview participant had problems answering specific questions on ESG measures.	The researcher decided to start the topic on ESG measures in future interviews with less detailed questions.
2	The interviewer posed questions too quickly when there were pauses in the conversation, which caused him to feel that he had interrupted the participants' thought processes.	In future interviews, the researcher allowed more time for reflection, even if it resulted in longer gaps in the conversation.

3	The interviewer realised that interview participants struggled with the terminology of “ESG metrics”. In the professional environment, the term “ESG measures” appeared to be more common.	The interviewer explained in the preliminary discussions of future interviews that interview participants were free to mention any ESG-associated measure independent of the terminology, e.g., ESG indicator, ESG factor, ESG metric, ESG action, etc. For the discussion of this research project, the researcher will use the more common terminology of ESG measure.
4	An interview participant advised that the first set of questions on project success should be answered without any linkage to sustainability. The linkage to sustainability could potentially influence the interview participants' answers.	The interviewer revised the initial question on project success as follows “What, in your opinion, makes a project successful – perhaps even apart from the context of sustainability?” With this cautious phrasing, the interviewer intended to encourage participants to consider project success beyond the field of sustainability, while also not discouraging any associations that explicitly relate to sustainability.
5	In a preliminary discussion, one interviewee expressed concern that their knowledge of ESG measures might not be sufficient for this study. When asked about professional experience, the interviewee stated that they had over 10 years of experience in real estate development in Germany.	In future preliminary discussions, the interviewer clarified that the upcoming interview was not intended as a knowledge test, nor did it require prior study or memorisation of ESG measures. The interviewer reassured participants that their experiences, opinions, and perceptions were the primary focus, and there was no need to worry about potentially insufficient answers to individual questions. The particular concern raised by the interview participant with more than 10 years of professional experience made the researcher more aware that the absence of specific knowledge could itself be a significant finding, providing valuable insights into the level of understanding within the industry. This aspect was reflected upon in further discussions.
6	The interviewer observed that some interview participants provided very detailed responses that extended beyond the scope of the original question. Sometimes, their answers pre-emptively addressed follow-up questions related to a specific topic area.	The interviewer decided not to modify the questionnaire but made a point of carefully monitoring whether potential follow-up questions had already been addressed in advance during the interviews. For participants who gave shorter responses, the follow-up questions were used to elicit more detailed answers. In cases where participants had already provided extensive answers to a particular topic, the interviewer refrained from asking additional follow-up questions to avoid frustrating the participant and to ensure the interview stayed within the allotted time frame.

3.8 Research participants

The interviews have been conducted with 20 participants, all working in real estate development, either at or for a real estate developer. Eleven research participants were male, nine were female. The average professional experience was approximately 13 years, ranging from less than five years to more than 20 years. The interview participants were divided into three distinct groups:

Project Managers: Participants in this category are employed by a real estate developer and are directly involved in real estate projects, typically serving as the lead project manager. Seven research participants have been categorised as project managers.

Sustainability Managers: These participants are also employed by the real estate developer but are not directly engaged in the day-to-day activities of real estate development. Instead, they work strategically, often overseeing the integration of ESG criteria into projects or enabling project managers to incorporate ESG considerations. Seven research participants have been categorised as sustainability managers.

Project or Sustainability Consultants: This group consists of participants who act as consultants for project developers. They provide advisory services, assisting developers in implementing projects or integrating ESG criteria in a service-oriented capacity. Six research participants have been categorised as project or sustainability consultants.

Table 3. 2 gives an overview of all research participants.

Table 3. 2: Interview participants

No.	Job Description	Gender	Experience
A	Project Manager	Male	5-10 years
B	Project/Sustainability Consultant	Male	5-10 years
C	Project/Sustainability Consultant	Male	11-15 years
D	Sustainability Manager	Male	more than 20 years
E	Project/Sustainability Consultant	Male	5-10 years
F	Project Manager	Male	more than 20 years
G	Project/Sustainability Consultant	Female	more than 20 years
H	Project/Sustainability Consultant	Male	16-20 years
I	Sustainability Manager	Female	11-15 years
J	Sustainability Manager	Male	11-15 years
K	Sustainability Manager	Female	more than 20 years
L	Project/Sustainability Consultant	Female	11-15 years
M	Project Manager	Male	more than 20 years
N	Project Manager	Male	11-15 years
O	Sustainability Manager	Female	less than 5 years*
P	Project Manager	Female	11-15 years
Q	Sustainability Manager	Female	5-10 years
R	Project Manager	Female	less than 5 years*
S	Project Manager	Female	11-15 years
T	Sustainability Manager	Male	11-15 years

* Participants with less than 5 years of professional experience were able to objectively demonstrate that they could make a valuable contribution to this study. They achieved this either through specialised training in the field of sustainability or by taking on responsible roles within their organisations, allowing them to acquire in-depth knowledge of the subject matter quickly.

3.9 Qualitative data analysis

The following sections outline the methods of data analysis. This study made use of thematic analysis to analyse the interview and focus group data.

3.9.1 Considerations in qualitative data analysis

Qualitative research is an interconnected process in which the researcher collects, analyses, and interprets data as they conduct interviews or focus groups. Qualitative data is very diverse and can contain verbal data, textual data, or even visual data (Saunders *et al.*, 2019). For this research, the focus was set primarily on verbal data, which means spoken words from research participants which are audio recorded and transcribed. But textual data as noted from the interviews and focus group sessions was also used in this research project. Bryman (2012) asserts that specific sets of rules govern the handling of quantitative data analysis. In contrast, there are no clear guidelines for qualitative research. Drawing upon the arguments presented by Bryman and Burgess (1994), Bryman (2012) contends that clear guidelines would not be desirable in any case. Rather, for qualitative data analysis, it is more appropriate to consult broad guidelines, as will be presented later. Saunders *et al.* (2019) note that the philosophical assumptions underpinning the research project have effects on its design and conduction, including data collection and analysis. As this research project primarily leans on an interpretivist research philosophy, participants' interpretations and experiences are in the foreground of data analysis. Saunders *et al.* (2019) further notes that an inductive approach to theory development as used in this research project allows the conduction of the research to follow the flow of collected data. It can be anticipated that the qualitative data collected reflects variations in participants' experiences and perspectives on ESG and real estate development in Germany. During data analysis it was crucial to recognise the breadth of these experiences and perspectives on the research topic. Saunders *et al.* (2019) conclude that the analysis of qualitative data collected through an interpretivist approach therefore needs to be sensitive to the data's variability and complexity to be meaningful.

3.9.2 Thematic analysis of interview data

There are several ways of analysing qualitative data collected, with thematic analysis and qualitative content analysis being most acknowledged. Both methods share a common

approach to the analysis of qualitative data as both make use of patterns and codes that are identified and grouped. While content analysis, as presented by Mayring (1994), is considered wider in its application and can be used for handling larger data sets, thematic analysis, as presented by Braun and Clarke (2006), is considered to support deeper analysis which allows in-depth understanding of a phenomenon (Humble and Mozelius, 2021). As it is the intention of this research topic to gain deeper understanding of the phenomenon of ESG within the specific context of real estate development in Germany, thematic analysis was chosen to analyse interview data. Thematic analysis is a “*foundational method of qualitative analysis*” (Braun and Clarke, 2006, p.78) with the essential purpose being to search for themes and patterns that occur in the collected data. The researcher identifies codes or patterns in the qualitative data. It is important to note that the codes, patterns, or themes cannot be found in the content or data; they must be identified and generated by the researcher (Saunders *et al.*, 2019).

Themes manifest as recurrent patterns within the data, encompassing repetitions, metaphors, analogies, as well as discernible similarities and differences. Notably, themes can also emerge from the absence of data, and reflecting on these omissions is equally crucial in the analytical process (Ryan and Bernard, 2003). According to Bryman (2012), repetition is the most common criterion for establishing a pattern within the data being considered a theme. Bryman (2012) further suggests reflecting on the research questions when identifying themes from the data to secure relevance for the research topic. Within this research project, thematic analysis was used in a primarily interpretivist and inductive approach. Saunders *et al.* (2019) hold that an interpretivist thematic analysis can be used to explore different interpretations of a phenomenon, like ESG in the context of real estate development in Germany. They argue that when using thematic analysis within an inductive approach the collected data will be explored looking for occurrence and reoccurrence of themes. These themes could be the repeated mentioning of specific ESG measures or ESG benefits. Thematic analysis provides the opportunity to make use of the previously conducted literature review by combining the review with interview data (Braun and Clarke, 2006; Clarke and Braun, 2017).

This approach enables the utilisation of established theoretical frameworks in this research project, as demonstrated by Braun and Clarke (2006). This capability proves especially

advantageous given the specific context of ESG in real estate development in Germany. To conduct a thematic analysis, the following steps are suggested:

- Familiarising yourself with your data
- Generating initial codes
- Searching for themes
- Reviewing themes
- Defining and naming themes
- Producing the report (Braun and Clarke, 2006, p. 87).

3.9.3 Thematic analysis of focus group data

Since, in addition to semi-structured interviews, focus group discussions were also employed in this work, the question arose of how the data collected in the focus group sessions could be analysed. Focus group discussions are a widely used method in qualitative research, but some scholars argue that there is a lack of detail on how to analyse focus group data (Onwuegbuzie *et al.*, 2009; Massey, 2011). By referring to Morgan (1997), Frankland and Bloor (1999) and Fern (2001), Massey (2011) argues that the methods of data collection and analysis should match the purpose and needs of the research project. In this case, the research project aims to be aligned with is to develop understanding on how to integrate ESG measures into the development process of real estate projects in Germany to enhance project success. There are several ways to analyse data collected in focus group discussions such as grounded theory, thematic analysis, content analysis, and many more (Onwuegbuzie *et al.*, 2009; Massey, 2011). Krueger and Casey (1998, 2014) propose to use thematic analysis for focus groups when the intent is to understand the underlying themes and relationships that explain the organisation, functioning, or impacts associated with a phenomenon. As this research aims to understand how ESG can be integrated to the process of real estate development, the use of thematic analysis appeared to be highly reasonable to analyse the collected focus group data. Thematic analysis is not only a popular method of data analysis for interviews, but also the most common approach to data analysis in focus group research (Wiggins, 2004). For this research project, an additional argument supported the use of thematic analysis for focus group data. Unlike the inductive approach used in semi-structured interviews, thematic analysis can also be applied abductively, as was done for verification. In this approach, analysis begins with theoretically derived themes – such as the ESG integration framework – which can be adapted as data is examined (Saunders *et al.*, 2019). It is important, however, to treat focus group data differently from interview data. While thematic analysis often focuses on emergent themes, this practice is criticised in social

sciences for overlooking the degree of consensus or dissent. Failing to capture dissenting views can marginalise outliers, limiting the recognition of negative cases. Including such perspectives strengthens the validity of emergent themes and enriches understanding (Onwuegbuzie *et al.*, 2009). To address this critique, Massey (2011) proposed a focus group analysis model used in this research. While grounded in thematic analysis, the model distinguishes three types: articulated, attributional, and emergent data. Most data in the focus group discussions was articulated – direct responses to the researcher’s questions – ideal for capturing experiences, beliefs, and opinions. However, attributional and emergent data were also included in the verification process.

3.10 Quality of the research

The quality of a research project is of central importance when it comes to ensuring that the findings of a study are accepted (Saunders *et al.*, 2019). To achieve this, it is crucial that the research project is conducted in a rigorous and methodical manner. Only in this way can it be ensured that a sufficient level of transparency and trustworthiness is maintained in data collection, data analysis, and the presentation of research findings (Lincoln and Guba, 1985; Stake, 2005; Nowell *et al.*, 2017). However, these quality criteria, such as reliability, replication and validity, are often associated with quantitative research, which is why it is important to establish an appropriate equivalent for qualitative research as well (Saunders *et al.*, 2019). It is contested whether these measurements can be applied to qualitative research or whether other types of measurement for the quality and value of qualitative research must be established (Saunders *et al.*, 2019). In general, reliability is concerned with the question whether the results of a study are repeatable. Replication is concerned with whether a study can be replicated by a different researcher, and validity, as the most important criterion of research, is concerned with the integrity of the conclusions and how they are generated (Bryman, 2012).

Lincoln and Guba (1985) propose the use of the term **dependability** for reliability in the context of qualitative research and suggest that dependability means recording all of the changes to produce a dependable account of the emerging research focus that may be understood and evaluated by others. For this research, it was, therefore, crucial to examine the process of inquiry and put emphasis on how the data is collected and kept and that the data is accurate. When it came to replication, Saunders *et al.* (2019) argue that qualitative

research is not necessarily intended to be replicated as it reflects socially constructed interpretations of research participants in a specific context at the time it is conducted. However, they propose that a rigorous description of the research design, context, and methods will help others to undertake similar studies. To follow up on this point, the researcher has placed particular emphasis on elucidating the philosophical underpinnings that have guided the selection of the research philosophy, the approach to theory development, and, subsequently, the choice of the research strategy and research design.

Validity can be separated into internal and external validity. While internal validity refers to the extent to which the research finding can be attributed to the intervention that is being researched, external validity deals with questions regarding whether research findings can be generalised to other relevant contexts (Saunders *et al.*, 2019). Similar to reliability, other terms for internal and external validity have been proposed as they show a higher relevance for qualitative research strategies. The term internal validity is associated with credibility. **Credibility** is concerned with ensuring that the representations of the research participants' socially constructed realities match what the participants intended. It deals with the question of how believable research findings are (Bryman, 2012). This step is recommended where the boundaries between the researcher and the research are unclear (Lindheim, 2022). Since this study is conducted as practitioner research, and the researcher also works in the real estate industry – where professional experiences involve topics related to the research subject – it is particularly important to establish clear boundaries. Therefore, it must be ensured that the perspectives of the research participants and their intended statements are accurately represented and interpreted by the researcher. With reference to Lincoln and Guba (1985), Guba and Lincoln (1989) and Lincoln *et al.* (2018), the researcher adopted several techniques to achieve credibility.

Firstly, the researcher used reflection. Reflection was used on the one hand to ensure that the research findings represent the research participants' viewpoints of the topic and not the researcher's interpretations. On the other hand, as suggested by Saunders *et al.* (2019), the researcher used reflection techniques to ensure that preconceived expectations about what the research project will reveal are not privileged over the social constructions of the research participants. This is crucial as the personal beliefs of the researcher have been a major reason for choosing this research topic, and therefore the outcomes of the research may affect the

values of the researcher. To counter this, it was necessary to regularly record preconceived expectations and challenge them during the analysis of the collected data. Further, the researcher discussed relevant aspects of the research findings with the supervisory team and with other researchers not involved in the research project. The discussion with the supervisory team and the external researchers helped to reflect the interpretations of the study findings.

Secondly, the researcher involved the research participants in the process of verifying the research results. The research participants were provided with the transcripts to review whether the researcher had accurately captured all aspects of the interview. The participants were asked to provide comments, additions, or corrections. Only after this step was completed did the researcher proceed with further analysis of the data. In a further step, the research participants were invited to participate in the data analysis. By presenting the research findings and interpretations in detail within the focus group discussions, participants were given the opportunity to verify whether their perspectives, experiences, and perceptions were accurately represented. This additional step in data collection thus serves not only as a cross-check and quality control measure but also generates new data that contributes to the research outcome through an iterative process (Patton, 1987; Lindheim, 2022).

The term **transferability** shows parallels with external validity or generalisability and deals with the question of whether the research findings apply to other contexts. At this point, it has to be noted that findings in qualitative research tend to be oriented to the contextual uniqueness and significance of the aspect of the social world being studied (Bryman, 2012). This is why Lincoln and Guba (1985) argue that the transferability to other contexts or even the same context at a different time is an empirical issue. Particularly against the backdrop of the dynamic evolution of research and practical application of ESG in the context of German real estate project development, this objection appeared to be of significance. To achieve transferability, the researcher placed emphasis on clearly outlining the contextual background of the research topic and providing a full description of the research questions, research design, and research aim.

3.11 Chapter summary

This chapter has thoroughly engaged with the underlying methodology of this research and the selected research methods. It was argued why interpretivism serves as the predominant research paradigm, while also incorporating elements of pragmatism. This choice aligns with the primarily inductive approach to theory development, alongside the use of abduction. The rationale for employing a two-stage qualitative research design, namely semi-structured interviews and focus groups, was provided, demonstrating how these methods best support achievement of the research aim. Thematic analysis, in relation to the chosen methodology and research methods, was identified as the most suitable analytical technique for reaching the research goal of developing an ESG integration framework. A comprehensive justification of the selected research methods is fundamental to the quality of any research and lays the groundwork for careful fieldwork. The following chapters will present and discuss the findings of the fieldwork.

CHAPTER FOUR: FINDINGS OF THE STUDY

4.1 Introduction

In this chapter, the key findings from the conducted semi-structured interviews are systematically summarised. The interview data has been analysed as outlined in *Section 3.9.2*. The themes that emerged through the recursive process of analysis will be discussed. Each theme and sub-theme will be discussed in relation to the underlying data and the research questions of this study (Byrne, 2022). A total of 1,956 statements were coded. Overall, 226 codes were assigned, developed through an iterative process into themes, sub-themes and primary codes. The codes were repeatedly adjusted, rewritten, and reallocated. At the end of this process, four themes were identified that significantly contribute to answering the research questions. An overview of themes and sub-themes is presented in *Figure 4. 1*. Each sub-chapter below offers an outline of the themes, followed by sub-themes and primary codes. Each sub-chapter includes a figure depicting the sub-themes and primary codes. Interviews were conducted in German. For better understanding, quoted statements have been translated into English.

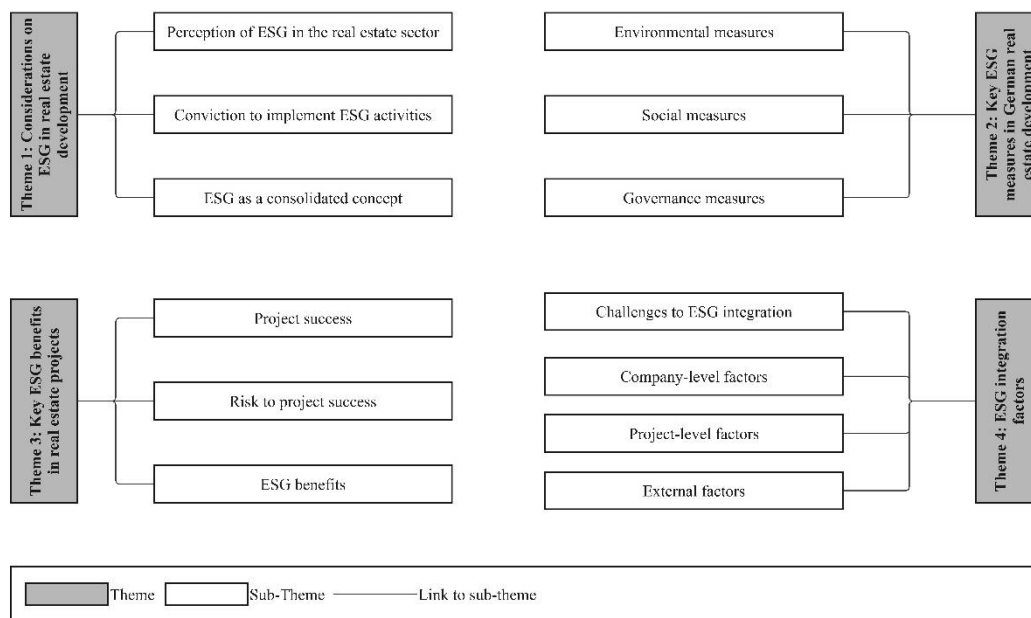


Figure 4. 1: Overview of themes and sub-themes

Source: Researcher (2026)

4.2 Theme 1: Considerations on ESG in real estate development

To address the research aim of this study, it is necessary to investigate the general attitudes within the German real estate market towards implementing ESG measures. Consequently, research participants were asked about their general understanding of sustainability and the implementation of ESG measures. This has resulted in a theme that deals with the fundamental considerations of ESG in real estate development. Three sub-themes are subsumed: perception of ESG in the real estate sector, willingness to implement ESG activities, and ESG as a consolidated concept. The theme, sub-themes, and the associated primary codes are illustrated in *Figure 4. 2*

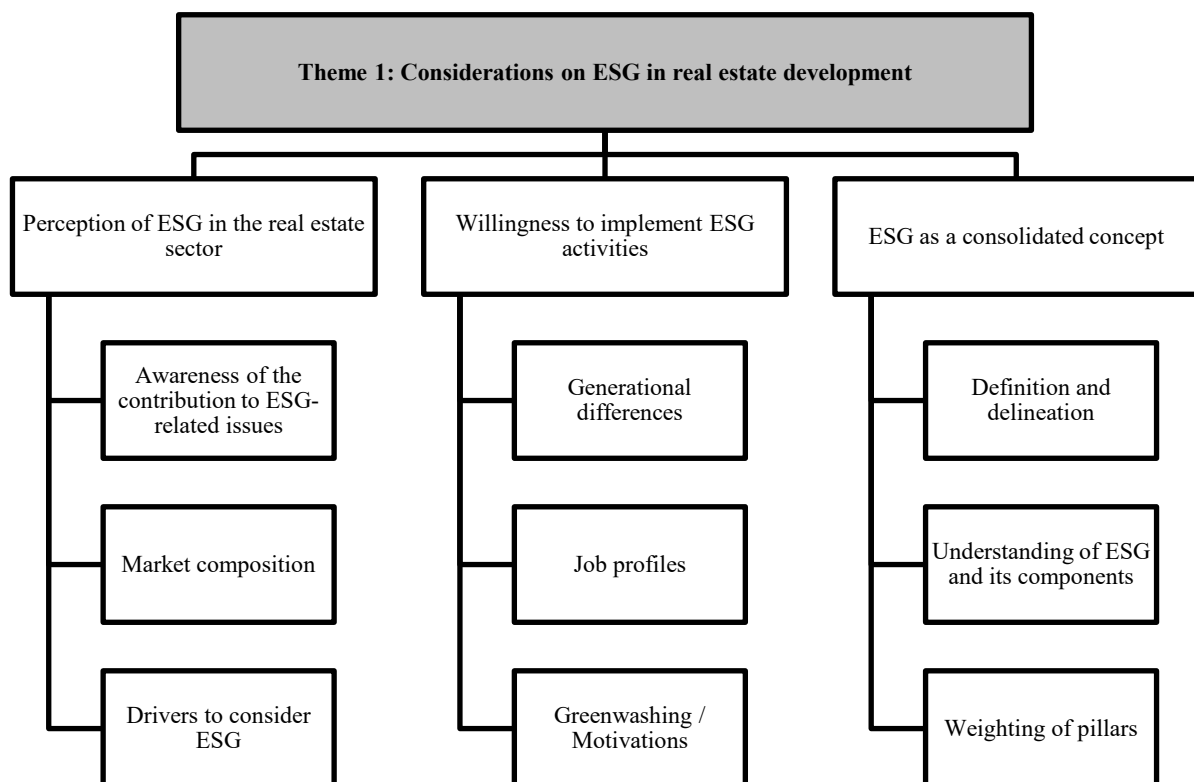


Figure 4. 2: Illustration of sub-themes and primary codes of Theme 1

Source: Researcher (2026)

4.2.1 Perception of ESG in the real estate sector

The first sub-theme deals with the perception of ESG. Three primary codes were developed within this sub-theme. The first code focuses on the **awareness of the contribution to ESG-related issues**. A significant gap in addressing ESG over the past decade was acknowledged,

with the industry lagging behind other sectors in embracing sustainability. Several reasons were identified for this slow uptake.

One frequently cited reason was the general mindset within the industry. The market has functioned for decades without sustainability measures, leading to a reluctance to adopt ESG practices. This hesitance was both observed and criticised by participants. While it was acknowledged that the sector substantially impacts ESG issues– especially in carbon emissions – they also noted the lack of action. This contradiction was widely discussed. Participant M, a project manager at a national real estate development and investment firm, highlighted this exemplary:

"About 40% of carbon emissions in Germany come from the building sector, to say that it doesn't concern us and that others should deal with it is simply wrong. Therefore, it is the responsibility of the real estate industry. We can try to improve and retrofit the existing buildings in operation. But everything that is newly constructed will be on this planet for a long time. It is the task of the real estate development sector to do it better than it was done before."

The contribution of the German real estate industry to these ESG-related issues is undisputed and has been extensively discussed in this study. Participant M, in the above statement, references the carbon emissions of the German building sector (dena, 2022). It becomes clear that, while the data indicates that existing practices must be updated and there is a need to adapt current business models, as noted by Drane (2013), there is also a lack of willingness to implement these changes. The next primary codes within this sub-theme are closely related to this observation, as they provide insights into where this lack of readiness for implementation might originate. These reasons may stem, on the one hand, from the general attitudes of individuals within the industry, and, on the other hand, from the market heterogeneity. These have been subsumed under the primary code **market composition**. Participant J, a sustainability manager at a nationally operating real estate development company, described this attitude as follows:

"We are conservative companies, in a conservative sector, in a conservative country. When we start moving, we will be the last ones to have started."

While participants often described the industry as conservative, the claim that Germany is broadly resistant to sustainability must be nuanced. As outlined by Arocena *et al.* (2021), Germany generally demonstrates high sustainability awareness and a greater willingness to act compared to other countries. However, the slow uptake of ESG was also attributed to the fragmented structure of the market, which makes broad implementation difficult. The data highlights the fragmented and multifaceted nature of the industry, which complicates the widespread implementation of ESG measures in German real estate projects. Participant I, a sustainability manager at a publicly listed investment manager and real estate developer, described the heterogeneity of the real estate sector as follows:

"So many companies rooted in the real estate industry – property management firms, smaller companies, technical firms – haven't even started [with ESG implementation]. Therefore, I would unfortunately place the real estate sector more in the lower half of industries in comparison [...]"

The contextual background and literature review extensively outlined that the pressure to implement ESG measures arises from the regulated financial market and the EU Taxonomy, which directly or indirectly impacts real estate companies and can be identified as **drivers to consider ESG**. Yet, despite this pressure, adoption remains slow. A key distinction emerged in the data: while real estate projects face strong ESG expectations from institutional investors, companies often escape this pressure due to their smaller size and fragmented structure. Participant Q, a sustainability manager at an internationally operating real estate developer, explained:

"Those most affected by sustainability are those impacted by regulation, mostly larger companies, whereas sectors characterised by smaller companies are generally less affected."

The findings indicate that ESG was seen as increasingly driven by financial stakeholders – especially institutional investors and lenders – due to regulatory shifts like EU policies. ESG was often described as evolving from a “nice-to-have” into a mandatory requirement, institutionalised through policy. ESG criteria were viewed as essential not only for investment viability but also for meeting market demand. User-side pressure, particularly in commercial projects, is growing. Participant R, project manager at an international real estate developer, noted in this context:

"The demand for sustainable or ESG-compliant buildings is present, particularly from institutional investors and private individuals, because sustainability offers benefits not only for users but also for investors."

In summary, it can be concluded that ESG is viewed as crucial yet slow to advance in German real estate development, citing a conservative mindset and fragmented market as main barriers. While regulation and investor pressure drive larger firms, smaller companies often lag, making ESG a growing mandatory requirement rather than a voluntary choice.

4.2.2 Willingness to implement ESG activities

The findings revealed that a certain willingness to implement ESG activities is crucial. A lack of willingness regarding ESG issues hinders integration efforts. Therefore, it is crucial to addressing the research aim to understand why the practitioners identified such a lack. Exploring these underlying reasons helps identify barriers to stronger ESG commitment in real estate development. Insufficient conviction manifests in generational differences, job roles, management levels, and external communications. Younger participants frequently highlighted that older colleagues often resist or neglect ESG integration. While comparing **generational differences** is not the study's aim, its frequent mention suggests younger professionals see it as a significant issue. Participant I, a sustainability manager with 11-15 years of experience, commented:

"Especially older colleagues who have been in the business for a long time tend to operate in a certain way, and, without wanting to make any negative assumptions about them, if they have a successful process and projects, they will likely replicate the same approach in the next project, choosing the same service providers and materials. If it has worked well and fits the next project, they will obviously repeat it instead of reinventing the wheel each time. However, this makes it incredibly difficult to incorporate new approaches and methods or more sustainable principles into such processes. [...] Younger colleagues may have a different perspective or increasingly encounter these issues in their education."

Participant A, who has between five and 10 years of experience as a project manager at a German real estate developer, also points to generational differences:

"It is probably a generational issue. I believe that our younger generation brings more willingness to the table compared to those who developed real estate many years ago and are now trying to bring these topics to the forefront."

These findings point to the assumption that younger professionals associate older generations with less ESG commitment, partly because ESG was less relevant in earlier projects. New standards, increasingly tied to ESG, are not yet fully embraced by more experienced colleagues. Further research could explore how attitudes towards ESG vary by experience level.

A pattern also emerged linking **job profiles** to differing ESG attitudes. While this study does not aim to compare personal convictions across roles, findings suggest that sustainability consultants and managers view ESG differently than project managers. These role-based differences may reflect varying responsibilities and expertise. Project managers, tasked with ensuring financial viability, often framed project success in economic terms. For instance, Participant P, a project manager at a German real estate developer, described successful projects as follows:

"Well, I work for a real estate developer – it's obviously economically driven. So that's the foundation. The project must generate a return [...]"

Even though further aspects, such as architectural design, were mentioned later in the response, this statement – particularly with its reference to the employer as a real estate developer – highlights the focus on economic success in the description of project success. When asked for a brief response regarding the personal significance of ESG, Participant P simply stated:

"...A challenge."

Similarly, Participant A, also a project manager for German real estate projects, emphasised economic criteria:

"Primarily, [project success] means completing the project within the specified budget and timeline."

When asked for a brief comment regarding a desire related to ESG, Participant A replied,

"Subsidies."

These exemplary responses from project managers indicate a tendency to prioritise the economic success of projects, even though ESG is recognised as an essential topic. In contrast, the findings suggest that research participants working primarily as sustainability consultants or managers provided a slightly different perspective, focusing more on implementing sustainability measures in their answers. For example, Participant L, a sustainability consultant, stated:

"A successful project is, for me, a collaborative project [...]"

When asked about the personal significance of ESG, Participant L replied,

"The foundation of our future."

Participant O, a sustainability manager at a German real estate developer and asset manager, responded to the same question by saying:

"On the one hand, we want to leave a healthier planet for future generations, but we also want to create a pleasant environment today where we feel comfortable."

These contrasting viewpoints highlight the different priorities and perspectives that exist among practitioners based on their roles within the real estate industry. This comparison does not imply that project managers take the implementation of ESG measures less seriously or are less convinced of the importance of the topic; rather, it offers possible insights into their motivations. Participant A, a project manager, elaborated in this context that developers implement ESG measures in order to be perceived favourably. Participant A stated:

"I find it difficult to discern the genuine attitude because I believe that a large portion, or even the majority, is driven by marketing reasons. I don't think there is much genuine conviction behind it. While it is claimed that it is based on conviction, I believe many sales considerations are involved."

This statement ties into another aspect related to this sub-theme. The data suggest that participants view sustainability for marketing purposes with a degree of scepticism. They express concern that ESG measures may sometimes be implemented more as a branding or

promotional strategy rather than rooted in a genuine commitment to sustainability. This perception suggests a potential gap between the external portrayal of ESG efforts and the actual willingness behind their integration, raising questions about the authenticity of such initiatives within the real estate sector. Findings suggest that there is a belief that many sustainability efforts are driven more by marketing than genuine conviction. Findings point to that **greenwashing** could damage an organisation's reputation, as consumers and stakeholders are increasingly likely to penalise organisations engaging in superficial or misleading sustainability claims. In this context, participant B, a sustainability manager at an international consultancy, noted:

"This topic [sustainability] is now being used to engage in greenwashing; it just sounds great."

Participant L, a sustainability consultant, emphasised:

"I had the feeling with this topic [sustainability] that we first talked about it and started to implement it afterwards, which is, of course, not the right approach. The whole topic is still too closely tied to marketing. As I said, there is more talk about ESG than genuine action behind it."

It is evident that practitioner willingness shapes the success of ESG implementation in real estate. While the acknowledgement of the importance of ESG was clearly identified in the data, differences in generational and role-based perspectives of participants could be identified as well. An effective ESG framework must address both advocates and sceptics. A key insight is that ESG is often implemented for branding. Therefore, the framework should prioritise improving project performance through ESG – not just enhancing the project or company image – aligning with the core objectives of this research.

4.2.3 ESG as a consolidated concept

The third key sub-theme of Theme 1 reveals that ESG is often mistakenly perceived as a consolidated concept. However, this study's findings suggest that ESG should be viewed as an umbrella term encompassing a range of individual measures. This sub-theme aligns with primary codes concerning how ESG is understood in German real estate development, prevailing definitions, and the relative importance of its components. When discussing the **definition and delineation** of ESG, broad agreement could be identified that sustainability

in real estate reflects Elkington's (1998) three pillars: ecology, economy, and social responsibility. Moreover, the data suggest that all three dimensions should be integrated into real estate projects to be considered successful and sustainable. This perspective was exemplary emphasised by Participant I, a sustainability manager, and Participant B, a sustainability consultant:

"Sustainability consists of three pillars – ecological, social, and economic sustainability – which only work together and are equally important."

"[...] when three topics come together, when financial sustainability comes together, ecological sustainability comes together, social sustainability comes together because I believe that a project is only truly sustainable if all three issues are considered."

Data provided an indication that sustainability is less framed as a three-pillar model and more as durability and stable, long-term value creation. In this case, true sustainability can be linked to a property's entire lifecycle – from site selection through operation – with the argument that projects must satisfy sustainability criteria at every stage. The findings also show broad recognition of the sector's large ecological footprint and expression of a desire to improve it. Yet, despite broad agreement on sustainability's importance, the data suggest that views diverged on its practical application. This lack of a shared, concrete understanding helps explain why ESG remains only partially integrated in German real estate development.

This leads to the next primary code subsumed under this sub-theme. A total of 46 statements from all 20 participants were assigned to this code. These comments emerged from direct questions on **understanding ESG and its components** throughout the interviews. The evidence suggests that ESG stems from sustainability and is built on the environmental, social, and governance pillars. However, ESG is commonly viewed as a more structured and detailed extension of the broader sustainability concept. While agreement that sustainability underpins ESG could be identified, opinions varied on which concept is ultimately more comprehensive. For instance, Participant R, a project manager working at an international real estate development company, suggested that:

"ESG is broader, clearly defined by these three letters [...] therefore, ESG is more comprehensive for me."

Others contended that ESG is a refinement or structuring of the broader and unclear term of sustainability. As Participant B, a sustainability consultant, noted:

"I think sustainability is much, much broader than ESG."

Others, such as Participant C and Participant H, both sustainability consultants working in two different nationwide real estate advisory firms, stated:

"For me, it's just a different word,"

"I still like to use it as a synonym."

These statements underline the data derived insight that there is no unified understanding in the real estate market regarding the similarities and differences between ESG and sustainability. It has been revealed that ESG broadens this categorisation significantly across the sector. Nonetheless, this varying understanding seems to contribute to the insufficient comprehension and implementation of ESG measures. The results imply that there is no unified understanding of ESG within the industry. It can be concluded that, while many market participants are aware of ESG, there is a lack of comprehensive and consistent experience across the sector. This can be primarily attributed to the fact that ESG lacks a clear and uniform definition in the industry, leading to varied interpretations and practices. It could be observed that the term ESG is used broadly, sometimes without a precise understanding of what it entails. In this context, Participant D, sustainability manager at an international real estate developer, criticised:

"ESG is not a consolidated concept."

This statement, in its concise yet highly meaningful formulation, is so relevant to this study that it was first assigned its own code, under which additional statements could subsequently be subsumed, ultimately leading to the development of a primary code, and led to this statement being used as a sub-theme in a slightly modified form through the iterative process. This statement encapsulates a significant problem: ESG is not a status that can be achieved, completed, or checked off. Instead, it consists of a range of individual measures grouped into the three core areas: environmental, social, and governance. This understanding offers a key insight relevant to the study's research question: ESG in real estate development should be seen not as a final condition, but as an ongoing process involving the integration of diverse actions across these three dimensions. While a fundamental attitude and openness, as

discussed in the previous sub-themes (see **Sections 4.2.1 and 4.2.2**), are important, the focus should be on implementing individual measures rather than pursuing a singular concept.

In this context, data demonstrates a critique of the use of the term "ESG-compliant", despite some participants using it. The critique centres on the idea that ESG does not consist of a fixed set of standards or a definitive checklist that projects can simply fulfil. Given the lack of a uniform understanding or application of ESG, it can be argued that claiming compliance is misleading. Participant K, a sustainability manager at an international real estate developer, linked the term to the issue of greenwashing, commenting ironically:

"My favourite term is ESG-compliant. We build an ESG-compliant building! Aha – what does that actually mean? There is still a lot of ambiguity surrounding this topic."

This is also related to the primary code that addresses the **weighting of pillars**. Evidence suggests that sustainability is mainly linked to environmental issues and that this focus leaves social and governance concerns behind. This imbalance undermines ESG's holistic intent, which requires equal attention to all three dimensions. All 20 interviewees agreed the environmental pillar dominates real estate, echoing scholars such as Nosratabadi *et al.* (2019), Da Cunha Bezerra *et al.* (2019) and Kady (2021). Yet they differed on the importance and practical meaning of the social and governance pillars, noting considerable ambiguity about how to implement them in real estate development. Participants H and M illustrated this uncertainty in their comments on governance measures:

"The issue of governance is, in my view, a highly underestimated topic, evident in many processes [...]. I can only implement the other measures if I have a good handle on the 'G.'"

"But in the end, I can almost say zero per cent in terms of weighting for 'G.'"

These statements further reinforce the core message of this sub-theme. ESG has not been clearly defined so far, and it may not be possible to delineate it precisely. The vague nature of ESG must also be taken into account in the ESG measures integration framework to be developed, as well as the significant overrepresentation of environmental measures.

4.3 Theme 2: Key ESG measures in German real estate development

The second theme, closely aligned with the study's first research question, focuses on identifying key ESG measures. Sub-themes were structured around the three ESG pillars: environmental, social, and governance. Each sub-theme includes primary codes addressing key considerations for ESG implementation. These range from specific objectives – like energy efficiency within environmental measures – to application-based classifications, such as social measures related to property conception, surroundings, or users. Governance measures were categorised by their relevance at either the corporate or project-level. This theme, along with its sub-themes and primary codes, is illustrated in *Figure 4. 3*.

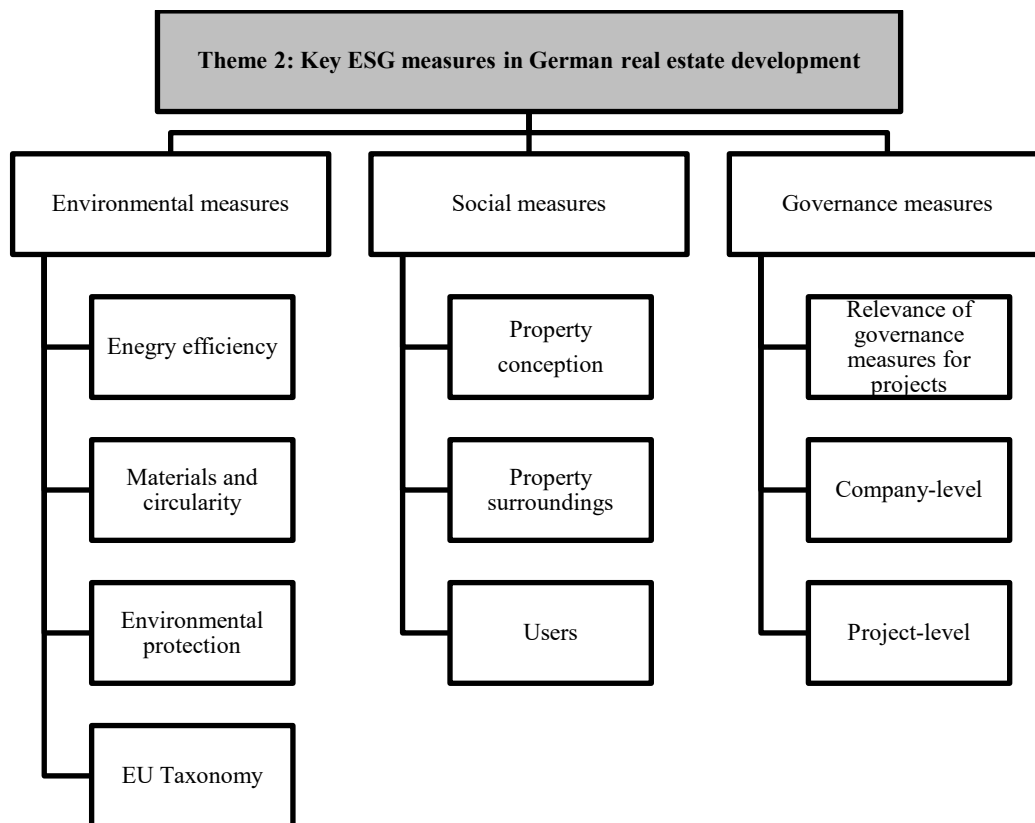


Figure 4. 3: Illustration of sub-themes and primary codes of Theme 2

Source: Researcher (2026)

4.3.1 Environmental measures

An apparent consensus emerged in the responses regarding key environmental measures in German real estate projects. All interview participants emphasised that **energy efficiency** should be the primary goal for real estate development, and thus all measures contributing to this goal should be prioritised. This is exemplified by the statements from Participants A

and N, both project managers at German real estate development companies, and K, a sustainability manager at an international real estate developer, who noted:

"Energy efficiency is an issue that immediately comes to mind. As a real estate developer, I can greatly influence this through how I configure the building."

"For me, the most important thing that can be measured is simply to reduce the CO₂ footprint. That is the most important."

"A good energy efficiency is a must-have."

These statements highlight the importance of emissions reduction, indicating that various measures or keywords are subsumed under this concept. Some participants identified decarbonisation as a critical measure, while others focussed on reducing the CO₂ footprint or primary energy factor, increasing energy efficiency, or decreasing the consumption of fossil fuels. However, the data suggests that the ultimate goal is the reduction of emissions. In this context, it could be identified that the focus is not only on the emissions primarily caused by a real estate developer during construction but also on the operational emissions of the building, which should be considered during development. Operational emissions are just as crucial as those during the construction phase. Participant O, sustainability manager at an investment and real estate development company, elaborated:

"I think we have a significant lever in the construction or real estate industry because it is always divided into two areas: first, the emissions during operation [...] and then the emissions during construction."

Life cycle assessments, building certifications, and energy efficiency measures were frequently cited as key strategies for reducing emissions. The importance of meeting specific building standards or energy efficiency classes during development to limit operational emissions was clearly identifiable in the data. Renewable energy sources – especially photovoltaic systems – were also widely highlighted. Just as critical, however, were the building's mechanical, electrical, and plumbing (MEP) systems. As Participant C, a sustainability consultant, emphasised exemplary:

"Exactly, the essence is: MEP, MEP, MEP! [referring to mechanical, electrical, and plumbing systems]."

Several other environmental measures could be identified, which are described in the subsequent primary codes. However, it should be noted that there is a significant disparity within this sub-theme. The primary code for energy efficiency holds considerably greater relevance in the context of identifying key ESG measures than the following codes.

With less clarity regarding its relevance, yet still significant for this study, the primary code for **materials and circularity** was identified. This code includes all mentions of construction materials, waste, packaging, and similar topics. The use of carbon-neutral building materials was often cited to reduce emissions during the construction phase, with the limitation that additional costs could present a barrier, as will be discussed in *Section 4.5.1*. Discussions on emissions in construction are frequently connected to using recycled or recyclable building materials. It was indicated that the goal is to achieve a circular economy, which could nearly eliminate construction-related emissions. It was also emphasised that implementing cradle-to-cradle building measures or using carbon-neutral materials in the sense of circular economy remains challenging. This is in line with the literature findings on circular economy as a DNSH-criteria of the EU Taxonomy (Cruz Rios *et al.*, 2021; Ambituuni *et al.*, 2025; Rao *et al.*, 2025). Participant I, the sustainability manager, elaborated on this, stating:

"The cradle-to-cradle concept is still difficult, as is timber construction in general, because there is simply not much expertise yet or enough companies to implement it."

The issue of waste was also addressed in connection with materials and circularity. Primarily, participants discussed waste-reducing production methods and construction processes. Additionally, the management and reduction of waste during building operations could be identified as necessary environmental measures. It can be noted that materials and circularity is a broadly defined code that encompasses not only the avoidance of waste and surplus but also the use of climate-neutral building materials and, more generally, the efficient management of resources. Although no significant individual measures can be derived from this umbrella term, this primary code is relevant for addressing the research question.

Another primary code emerged from statements concerning **environmental protection** measures. Like the energy efficiency code, this category is broad and includes diverse

actions aimed at preserving flora, fauna, and natural habitats. As discussed later (*see Section 5.2.1*), the boundaries between environmental, social, and governance measures are often blurred, with some measures falling into multiple categories. For example, reducing or eliminating surface sealing was mentioned as both a biodiversity initiative and a climate change adaptation strategy. However, because climate adaptation appeared less frequently, and the creation of green spaces was cited more often – particularly in connection with biodiversity – this measure was placed under environmental protection. The creation of green spaces was widely regarded as essential and frequently linked to enhancing biodiversity. A distinction in how such measures are perceived could be observed: biodiversity actions tend to be more visible than many other sustainability efforts. On this point, Participant I, a sustainability manager, argued:

"The issue of biodiversity, I find, is quite prominent in the ecological sphere, simply because it's one of the few visible things [...]".

In doing so, Participant I points to an interesting paradox that emerged in the data. On the one hand, biodiversity was identified as a significant environmental measure – through initiatives such as flowering meadows, biodiverse plants, habitats, and intensive green roofs, which are visible. On the other hand, these measures are seen as generating few tangible ESG benefits. More on this will be discussed in *Section 4.4.3*.

In this context, all measures related to water management can also be subsumed under the primary code of environmental protection. The responsible use of water resources was regarded as a significant measure. As with many other measures, it was noted that a distinction should be made between existing buildings and new developments. Using greywater as a potential strategy to reduce freshwater consumption was considered viable only for new construction projects, as implementing greywater systems in existing buildings was considered too complex. However, even seemingly smaller measures, such as installing water-saving fixtures to reduce water usage, were also deemed necessary.

The **EU Taxonomy** forms the final primary code within the environmental measures sub-theme. While it does not represent a direct environmental measure like energy efficiency or biodiversity efforts, its significance for this research is substantial. Widely discussed in the literature (Cloutier *et al.*, 2021; Devine *et al.*, 2022) and strongly supported by interview

data, the taxonomy is not seen as a single ESG action, but as a guiding framework for defining and evaluating environmental measures in real estate development. The data point to the fact that, although the taxonomy itself may not prescribe individual actions, its criteria shape what qualifies as environmentally sustainable. It could be observed that, the EU Taxonomy provides the authoritative benchmark for ESG-aligned real estate practices. As Participant S, a project manager at a development company, stated:

"In the end, when you talk about the 'E,' you're essentially talking about the Technical Screening Criteria [of the EU Taxonomy]."

This statement exemplifies the view that the EU Taxonomy is closely intertwined with ESG. In particular, in the environmental measures segment, the EU Taxonomy serves as the guiding framework. The Technical Screening Criteria define very specifically for the real estate sector which activities are classified as sustainable and how properties should be designed to comply with the taxonomy (Vongerichten, 2024). This is further confirmed by the statement of Participant R, a project manager from an internationally operating real estate developer:

"[...] for us, the EU Taxonomy is the ultimate standard from an operational perspective because it serves as the regulatory foundation that has real technical criteria."

This highlights the importance of the Technical Screening Criteria for the operational work in real estate development.

4.3.2 Social measures

The second sub-theme under Theme 2 concerns social measures in German real estate development. Unlike environmental measures, where key ESG actions were clearly defined, social measures were less concrete. Several participants struggled to name specific social initiatives they considered important. This may stem from the lower prioritisation of social aspects within some companies, leading project managers to engage with them less. As noted earlier, the dominance of the EU Taxonomy has reinforced the focus on environmental measures. The absence of an equivalent social framework as a key reason for the lack of clarity around social measures could be identified as key reason. Although a legislative framework for social criteria has been announced, it has yet to be implemented. This gap

contributes to the continued vagueness of social ESG elements. Participant Q, a sustainability manager, explained when asked about key social measures in German real estate projects:

"Since the 'S' is not yet defined, or at least not in a way that is embedded as a direct requirement in real estate development, I really struggle to answer that."

This statement confirms the researcher's impression that real estate developers clearly focus on environmental measures, while social measures are considered secondary. Nevertheless, primary codes have also developed around social measures, namely property conception, property surroundings, and users.

The data suggests that the area that caused the most associations among participants was **property conception**. It was frequently emphasised that comfort should be considered during the project's conceptual phase. This includes all measures related to well-being within the property, such as creating a healthy living and working environment, using non-toxic building materials, ensuring a comfortable indoor climate, preventing disturbances from noise, odour, or light pollution, and ensuring access to reliable internet connections. Participant H, a sustainability consultant, summarised this by saying:

"I ultimately need to ensure that the largest possible number of users feel comfortable in this building and therefore want to use it."

This establishes the core orientation of social measures in property conception. During the early design phase, user well-being – especially accessibility for those with mobility impairments – should be prioritised. This includes fulfilling requirements for barrier-free and wheelchair-accessible design and providing parking for individuals with limited mobility. Participants often noted that new construction projects must meet strict accessibility standards. However, major challenges arise in redevelopment projects, where accessibility often conflicts with fire safety or heritage protection laws. This recurring issue, also addressed in Theme 4 on ESG integration challenges (*see Section 4.5.1*), was a source of frustration as could be observed. While a strong willingness to implement social measures could be identified, also a call for clearer, more flexible legal frameworks became evident. This links to the discussion on ESG integration factors in *Section 4.5*.

Another key aspect of the property's conception primary code was the design of public and semi-public spaces. This topic elicited a wide range of associations from the interview participants, as the findings indicate. The emerging pattern suggests that it is necessary for real estate projects to include capitalised areas and thoughtfully consider how spaces can be provided to the public to create areas for well-being and social interaction. Examples include gathering spaces, covered areas, sports and recreational facilities, restaurants, playgrounds, and relaxation areas. Even smaller measures, such as providing spaces for strollers, have been considered as essential to increase family friendliness and thereby increase user well-being. The results imply that real estate projects should not be isolated but rather porous and inviting public use. However, this goal presented a conflict: while permeability increases social interaction, it may be viewed negatively by residents who perceive more visitors as disruptive. Mobility also emerged as a critical topic, including provisions for car and bike-sharing services and sufficient parking for both. Linked to underground garages and public zones, participants raised concerns about perceived safety. Ensuring users feel secure – via surveillance or lighting – was considered essential. Safety and mobility were closely related: accessible, well-lit areas contributed to supporting both inclusive and socially sustainable urban environments.

The second primary code within social measures focuses on the **property's surrounding**. This not only includes the accessibility of public transportation and essential services such as shops for daily needs but, more importantly, how the project integrates into existing structures. This includes integration into the urban landscape and the social and community fabric. The importance of considering local needs was repeatedly emphasised. A key pattern that emerged was that the design of a property should be aligned with the needs of the local population. Participant M, a project manager with more than 20 years of experience, evaluates exemplary:

"If one does not take into account the neighbourhood, the social fabric, how one integrates their property into the built environment and does not adapt accordingly, it ultimately leads to a devaluation."

Here, Participant M also points out a connection between the implementation of ESG measures, in this case social measures, and their relation to project success. The participant believes that neglecting the neighbourhood could, therefore, have negative effects on project value. This interesting aspect will be explored in more depth in Theme 3 (see **Section 4.4.2**).

Only by considering local stakeholders can a property integrate into the social fabric and gain acceptance. The evaluation of statements from the interview participants revealed that this integration into the urban landscape has two essential components.

First, a project must consider local conditions and address local needs through its design – this may involve tenant mix, small-scale retail, or public and semi-public open spaces. In short, projects should integrate into the local context from both demand and supply perspectives. Second, integration also concerns the type and scale of building use, particularly building mass. Interviewees consistently noted that economic success is essential, often driving the maximisation of building mass for profitability. However, a recurring theme was that increased density for financial reasons may trigger resistance from local communities, posing project risks. This tension between developer profit motives and resident interests is also identified in the literature as a risk factor (Gobert, 2016). To counter this risk, communication with stakeholders and participation are proposed as essential tools (Martinez and Olander, 2015; Hölzel and Krön, 2019). And also, in the analysis of interview data, the pattern emerged that communication and stakeholder engagement are extremely important to increase a property's acceptance and overcome external stakeholders' reservations. This includes transparent planning and construction progress communication and involving external stakeholders in decision-making processes. Such efforts can help prevent or reduce resistance to the project. Participant B, a sustainability consultant at an international consultancy, summarises this aspect based on own experiences:

"I think everything starts with stakeholder engagement. [...] You have to bring people along. [...] I believe you can make up for a lot and do a lot of good if you engage people from the start [...]. If I don't consider these aspects, then the project will be challenging."

The third and final primary code within social measures focuses on the **users** of the property. These can include residential building residents, office property employees, or retail and hotel establishments' customers. A clear pattern that emerged is that future property users should be placed at the centre of the design process. The analysis points to the conclusion that only satisfied users can provide added value for the developer. And here, a direct link can be made to the well-being concept discussed earlier. Participant O, a sustainability manager at a real estate developer, sees a connection between social measures aimed at user well-being and environmental impacts, integrating this with project success:

“With regard to sustainability, it is important that building users feel comfortable because, if they do not, the building will not be used, and it may likely be demolished earlier than initially planned. So, I think it’s very important to ensure this well-being and really tailor the building to its users. If that’s achieved, I believe we have a successful project.”

This exemplary statement links the primary codes of environmental and social measures and connects to Theme 3, which explores the views on ESG benefits and project success. Well-being and comfort can be promoted in various ways, such as ensuring non-discriminatory leasing practices and fostering diversity. Affordability emerged as an important social measure – important for both residential and commercial tenants. Data suggests that maintaining a diverse tenant mix is essential and cautioned against leasing to businesses with questionable models. Setting aside space for local small businesses or non-profits – potentially at reduced rates – was also viewed as beneficial. This mix was observed to support both property users and the wider neighbourhood. Participant M, a project manager, described this approach while noting the lack of uniform standards and transparency surrounding its implementation:

"It is said that there are usage-bound and concept-bound spaces, and users do not pay the usual market rent. If such a quota is accounted for in the projects and made transparent externally [...], then transparency will eventually emerge under the heading of ESG, as well as competition."

Overall, these measures related to users consistently link back to user satisfaction. It is about how satisfied different users are with the property's living, working, and shopping qualities and opportunities. It was determined that only when a certain level of satisfaction and well-being exists can negative impacts on the property, such as high tenant turnover, be avoided.

It was interesting to observe that other social measures commonly mentioned in the ESG context in the literature, such as the prevention of child labour, labour laws, and quality of working conditions, were only sporadically referenced. This suggests that there appears to be only a limited connection between these social measures and the project-level.

4.3.3 Governance measures

Finally, the statements of the participants regarding governance measures have been analysed. Similar to the findings for social measures, there was a varied understanding of the importance and knowledge of governance measures, as the findings indicate. Governance measures are often associated with the corporate level, and the project-level appeared to be less in the focus. The separation of ESG measures on the organisational and project-levels, is also discussed in the literature (Zhang *et al.*, 2024), whereas this separation was only salient for governance measures in the collected data. Three primary codes have been developed for Theme 2, namely, relevance of governance measures for projects, company-level and project-level.

The findings provided initial evidence that knowledge of governance measures in real estate development did not seem to be widespread among the participants, and therefore a mixed picture emerged of the perception of the **relevance of governance measures for projects**. Keywords were often mentioned, but in-depth engagement with these topics and concrete integration into projects were less of a priority for those interviewed. For instance, Participant P, a project manager with 11-15 years of work experience, stated in response to a question about governance measures impacting the project-level:

"[...] these classic code of conduct things. They're written on paper, filled out somewhere, but often end up gathering dust in a drawer and, at least with us, they haven't really been widely communicated. It's more of a means to an end."

This statement illustrates that governance measures are not considered highly relevant for day-to-day project work. This view is further supported by Participant A, a project manager at a nationally operating developer in Germany, who noted:

"Regarding governance within projects, I have to say, we haven't implemented any measures yet."

Here, too, it becomes clear that governance measures do not seem to be a primary focus. Although this pattern emerged clearly from the analysis of the interview data, it cannot be generalised that all participants view governance measures as irrelevant. At this point, the statements of Participants H and M – already cited in the explanation of Theme 1 (see **Section 4.2.3**) – can be referenced again.

These statements further illustrate the ambiguous picture regarding the relevance of governance measures. A possible reason why the relevance of governance measures is not regarded as exceptionally high for German projects may lie in statements that reference legislation. There was evidence to suggest that European and German legislation already provides a very solid framework for governance measures. In this context, Participant O, sustainability manager, noted that:

"[...] standards, human rights, this Code of Conduct is becoming a standard in Europe, and we are also doing very well in Germany."

Participant N, project manager, noted that:

"The 'G' is somewhat already a given [...] the topic of governance is already quite well covered by legislation in Germany, whereas it's more challenging in other countries."

This underlines the emerging view to believe compliance with European and German laws and regulations is sufficient to meet governance measures at the project-level. However, it also underscores a narrow perception connecting governance measures primarily with legal requirements. In the literature review, however, it was revealed that governance measures can extend far beyond legislation, encompassing aspects such as organisational culture (EBA, 2021; Stanitsas *et al.*, 2021; Kyriakogkonas *et al.*, 2022), workforce maturity (DVFA, 2010; Park and Jang, 2021), or transparent tendering processes (DGNB, 2023; GRESB, 2023).

Through repeated analysis of the data, it was also noted that there is a difference in the assessment of the relevance of governance measures depending on the type of company in which the respondents work. The data pointed to the conclusion that participants from larger, publicly listed companies seemed significantly more familiar with governance measures than those working in smaller, medium-sized companies. Participants working for larger companies argued that they were more familiar with governance measures than participants working at smaller real estate developers.

Leading the focus away from the relevance to actual measures, the governance measures mentioned can be divided into two primary codes, namely company-level and project-level. Generally, from the participants' perspective, the majority of governance measures are

applied at the **company-level**. This becomes evident in the statements from Participant A and Participant Q,

"The company prescribes a lot,"

"It's my perception that 'G' is anchored at the company-level and is thus tied to company-specific issues."

These statements show how governance measures are strongly tied to the company-level. However, the data suggest an agreement that, while governance is often anchored at the corporate level, it should still influence projects. This supports Baumann and Müller's (2021) view that corporate strategies should cascade into individual projects. Thus, few governance measures are exclusive to the company-level; rather, the corporate context must be considered. Relevant measures include ethical business conduct towards employees, customers, suppliers, and stakeholders – often described through codes of conduct, ethical guidelines, compliance systems, and behavioural codes. These were seen as the most critical aspects of governance. Closely related is the oversight of subcontractors and suppliers, especially in light of the Supply Chain Act. Other company-level governance aspects mentioned include transparency, employee satisfaction, and data protection for tenants, employees, and suppliers.

Focusing on the **project-level** – the core of this study – only a few governance measures emerged consistently from the data. Two notable ones were Life Cycle Assessment (LCA) and the use of Green Lease contracts in commercial projects. While LCA also relates to environmental measures, it was frequently mentioned in the governance context. The data shows a disconnect between developers' business models and the interests of long-term property owners. It was argued that developers should account for building operations, not just delivery. Participant I, a sustainability manager with 11–15 years of experience, explained this from the perspective of an investor acquiring a project:

"If we now make a forward deal, are we responsible for the 'mess', so to speak, that my predecessor created, or are we only responsible for what happens after the purchase? Because it doesn't change the outcome, I still have the same question about the emissions: do I count those that occurred during the operation while I owned the building or also everything before?"

The environment and society don't care who it is attributed to. The negative effect is there, and that's the difficulty."

This statement underscores the importance of considering a property's entire life cycle to accurately assess performance in terms of emissions. In connection with conducting LCAs, the issue of data availability was frequently raised. Extensive data from the planning and construction phases is essential to conducting an LCA transparently, but this data is often unavailable. Thus, data availability and transparency regarding the materials used are closely linked to governance measures at the project-level. Only in this way can the entire life cycle of a property be assessed, as all phases must be considered in a comprehensive evaluation. The use of Green Lease contracts is an essential tool to influence emissions during a property's operational phase. Although these contracts are primarily relevant in commercial leasing, they were identified by participants engaged in commercial real estate development as an important governance measure at the project-level. Green Lease contracts can influence tenant behaviour or, at the very least, provide transparency regarding user behaviour. Participant L, a sustainability consultant, assesses Green Lease contracts as follows:

"I think Green Lease is a wonderful tool. I believe it should become the new normal [...] Tenant behaviour is so important and contributes significantly to reducing the energy consumption of our buildings, for example."

That user behaviour is closely linked to ESG goals was also identified by Kempeneer *et al.* (2021). This aligns with the findings obtained from the semi-structured interviews in this point.

In addition to these two measures, which are applied almost exclusively at the project-level, risk management – particularly concerning climate risks and resilience – was occasionally present in the collected data. However, this aspect played a minor role, and no primary codes could be developed around these topics. Other aspects sporadically mentioned included implementing transparent public participation processes, though the distinction between these and the sub-theme of social measures was not always clear. It becomes clear that only very few governance measures are applied exclusively at the project-level – at least from the perspective of the interview participants. The literature identifies significantly more

measures, as outlined in *Section 2.3.6*. But these measures either do not appear to be applied in practice or are not well-known.

4.4 Theme 3: Key ESG benefits in real estate projects

The third theme synthesises participant statements on the benefits ESG can offer German real estate projects, as well as factors that support or threaten project success. This theme directly addresses the second research question and contributes to understanding key success factors in real estate development, thus also informing the third research question. *Figure 4. 4* illustrates Theme 3 and shows how project success, risks to projects success and ESG benefits have been subsumed. To clarify that risks to project success are not equated with ESG benefits, a colour-coded distinction has been applied. Although risks to project success do not constitute an ESG benefit, the relationship between project success and associated risks is important for understanding how ESG benefits are operationalised and applied.

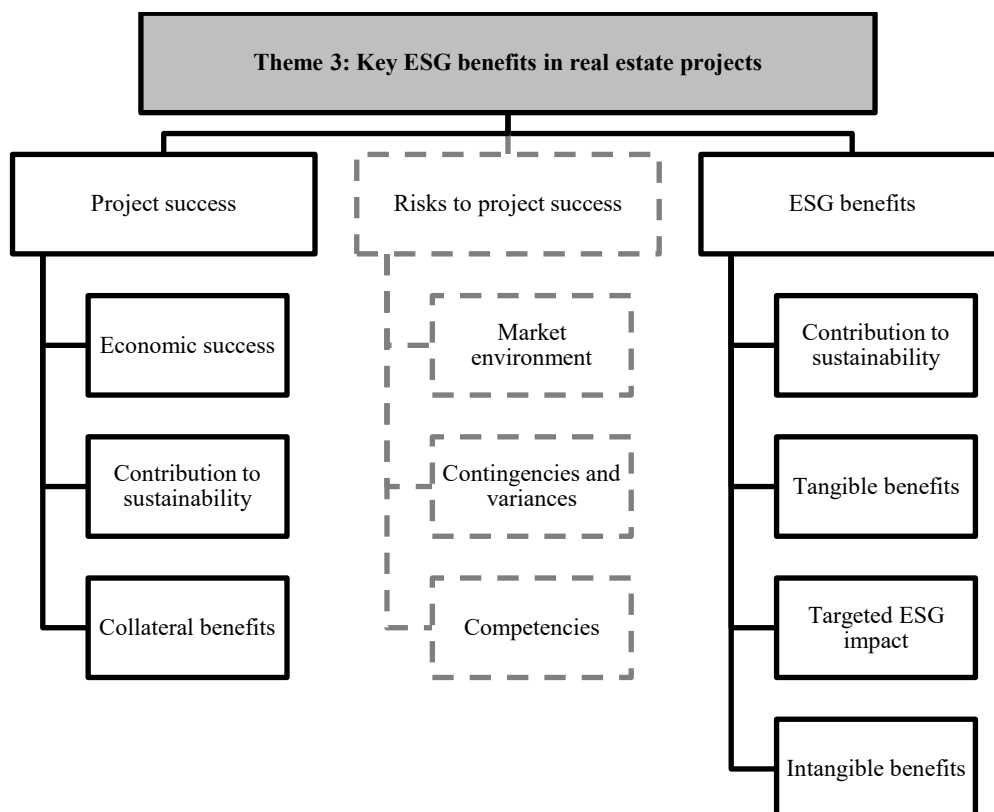


Figure 4. 4: Illustration of sub-themes and primary codes of Theme 3

Source: Researcher (2026)

4.4.1 Project success

To explore what defines project success in German real estate, participants were asked early in the interviews to minimise bias. Still, it must be acknowledged that all interviewees had expertise in sustainable real estate development and were selected within an ESG-focussed study. Thus, even though project success was discussed before mentioning sustainability, some bias may remain. Three primary codes emerged: economic success, contribution to sustainability and collateral benefits.

Despite this context, a strong agreement regarding **economic success** could be identified in the collected data. Economic success in terms of achieving target returns, rents, or sales prices is suggested to be the key indicator of a successful project. Participant K, a sustainability manager with over 20 years of experience, posed the rhetorical question:

“Will I be able to achieve the rental levels necessary to extract developer profit accordingly? That is the most important thing – financial criteria must be met in order to complete a project successfully.”

This clear statement, which directly links project success to the developer's profit, is further supported by Participant J, working as a sustainability manager for a nationally active developer in Germany, who elaborates as follows:

“Ultimately, it’s quite simple: we are a product manufacturer. If I have a product that becomes marketable within a reasonable, manageable time frame, is well-received by the market, and closes within a margin that meets the conditions I, as a company, have set, then that is a successful project.”

This brings up two points that are relevant to this study and can be linked to other statements and primary codes. First, it again highlights the close connection between project margin or profit and project success. Second, it introduces the issue of timing in direct relation to project success. The issue of timing will be discussed in more depth in **Section 4.4.2** when the risks to project success will be elaborated.

It becomes clear that financial success is considered the primary factor in determining project success from the perspective of practitioners. However, the specific origins of financial success vary depending on the participants' perspectives and likely also on the business

models of their respective employers. For instance, the data pointed to the conclusion that some participants prioritise achieving certain rental levels, while others focus more on the sales price of, for example, residential units. It also becomes evident that the definition of project success is closely tied to the business model of the company for which each practitioner works.

However, it was also observed in the data that many participants expanded their definitions of project success after mentioning economic factors. It is important to note a clear hierarchy here, with economic success being by far the most frequently discussed factor. Nonetheless, an additional primary code could also be derived from the findings: **contribution to sustainability**. Some of these statements are even closely tied to a project's economic success. For instance, Participant F, a project manager with over 20 years of experience in real estate development, emphasised:

“In the end, it’s about economic responsibility, because the economy will continue to be the driving force, as it must ultimately be a viable business model. If it’s not, you can’t achieve anything social, environmental, or otherwise.”

Here, Participant F not only draws a direct link between the necessity of economic success to achieve outcomes in areas like the social or environmental dimensions but also highlights the overarching connection between ESG’s origins in the financial sector. This underscores that the roots of ESG in finance are closely connected to the real estate market and individual real estate projects, as argued by Natansky (2012). Participant B, a sustainability consultant, reinforces this link between financial success and sustainability, stating:

“The project also has to make financial sense; otherwise, it’s not sustainable. If it doesn’t, then it’s your first and last project.”

Evidence was found that participants often extended the definition of project success beyond economic outcomes to include ecological and social dimensions. While it is important to acknowledge that all interviewees work with sustainable projects and were interviewed within an ESG-focussed study – suggesting some bias – they consistently expressed the belief that social and environmental measures are essential to a project's success. Their conviction that contributing to sustainability is a core component of project success is clearly reflected in the statement by Participant D, a sustainability manager:

"In my view, for the success of a real estate project, it is crucial, especially for its long-term success, that operations are resource-efficient and as emission-free as possible. Moreover, it is becoming increasingly important that construction itself, including embodied emissions, [is also taken into account]."

Here, a distinction was made between short-term successes, which primarily benefit the business model of the trader-developer, and long-term successes, which are essential for the future owner. As noted, the economic involvement of the trader-developer typically ends with the handover to the long-term owner, meaning that the developer can only indirectly benefit from successes occurring after this point, such as through reputation. This aspect will be deeper discussed in *Section 4.5.1*.

Although sustainability includes a social dimension, the need to consider the project's environment and generate **collateral benefits** beyond sustainability alone, could be found in the data. A clear pattern emerged: projects must align with local community interests and the needs of future users to ensure acceptance and long-term success. The data suggest that participants believed that economic outcomes can be enhanced by reducing vacancies, boosting satisfaction, and raising rental income. While Schanzenbach and Sitkoff (2020) noted ESG's ambiguity – ranging from collateral benefits to risk-adjusted returns – evidence could be found that collateral benefits are central to a project's success rather than just secondary effects. As Participant I, a sustainability manager, put it:

"Personally, [...] I would define a successful project as one that promises success for everyone involved, particularly for the users, depending on the type of use, residents or employees in the offices and retail spaces. In other words, it is a project that is both healthy for those who live there and provides pleasant living or working environment, ideally also with a view to the issue of sustainability, and that also provides positive added value for the community"

Participant O emphasised the focus on the users of the building, which, at the same time, leads over to another important aspect that many interview participants highlighted:

"The users are in focus here. Or other way round: if the users don't feel comfortable, [...] the project will somehow come to an end quite quickly"

and, perhaps, be demolished sooner. What also plays a role here is the flexibility of the building.”

The flexibility of a building has been highlighted to be an important component of a project’s success, especially in the long-term view. Against this background interview, Participant I answered a question on a specific component that could contribute to the success of a real estate project by stating:

“[...] one would be the topic of flexibility in the broadest sense. I think we are all aware that our environment and world are changing very quickly, and I believe that successful projects must adapt to this.”

This underscores the blurred boundaries between sustainability dimensions, suggesting that project success in terms of the social dimension can also impact success from an environmental perspective.

4.4.2 Risks to project success

Statements addressing the risks to project success were summarised in the second sub-theme code within this theme. To understand how the integration of ESG measures can contribute to improving the performance of real estate projects, it is also essential to recognise the risks that threaten project success. Three primary codes – market environment, contingencies and variances, and competencies – were identified in relation to these risks.

The data suggests that the timing and the current market conditions significantly impact the success of a real estate project. With the market downturn since 2022, many projects calculated under different market conditions are no longer financially viable (Ryan *et al.*, 2023; Feld *et al.*, 2024). Therefore, the **market environment** has been identified as a critical risk to project success. Participants' experiences may influence this perspective during the market slowdown. Participant Q, a sustainability manager with five to 10 years of work experience, highlighted that:

“In the current market situation, I find it difficult to say. I think that in the last [...] six to twelve months, beliefs that have always been true have been completely turned upside down.”

Participant J, a sustainability manager with 11 to 15 years of work experience, supported this point and provided a possible explanation why the changing market conditions affected real estate projects in this intense way,

“We are coming out of a low-interest phase, and during that time, it was almost impossible for a project to fail [...]. Now we see one of the reasons projects can fail – they aren’t properly calculated on a reasonable interest rate basis. The entire value creation doesn’t add up. This fundamental issue is currently affecting every developer, and now, of course, many projects are failing because, during good times, there was a lack of forward thinking.”

However, the current market environment poses a risk not only to the economic success of a project but also to its broader objectives—particularly if the implementation of ESG measures is seen not as a necessity or a competitive requirement, but merely as an optional enhancement. In that case, there is a strong likelihood that, especially when the market environment challenges many projects, ESG measures will be deprioritised. This leads to the conclusion that the market surrounding poses a risk not only to economic success but also to the successful integration of ESG considerations. The tension between measures that achieve a tangible ESG benefit and those that may be valuable from a social, environmental, or governance perspective but do not impact the economic success of the developer’s project becomes evident. Participant A, a project manager, supports this view, providing the example of a plus-energy building:

“The question is, ultimately, what can I afford within the project budget? A plus-energy building is always nice, but can I afford it if I’ve already spent a lot on a property? This defines what I can achieve within the [ESG] space. In the end, it has to be financially viable.”

Another significant risk – and therefore a second primary code within this sub-theme – comprises statements that point to more traditional risks to project success. Within the primary code **contingencies and variances**, statements were categorised that reflect undesired developments, including construction defects, delays in construction timelines or in securing planning or building permits, and cost increases. The causes of these contingencies and variances are diverse. However, a clear pattern emerged indicating that solid groundwork can effectively mitigate these risks at the project's outset. This means that

critical mistakes made as early as during the property acquisition can ultimately pose risks to the project. When asked about significant threats to project success, Participant A, a project manager, commented:

"I believe the initial project phases must be handled with great care – during the drafting of the building permit application or even earlier, before diving into project planning [...], one should not rely on gut feelings but must engage in thorough foundational work. In the early stages, a lot can still be corrected, which later in the project's progress must simply be accepted."

This statement underscores how closely rigorous groundwork is tied to the project's eventual success.

The third and final primary code within this sub-theme is closely related to contingencies and variances. Still, it focuses more on the **competencies** of the developer or project team than on the project itself. The two primary codes are interconnected, as it can be assumed that a lack of competence within the project team may lead to unintended real estate project developments, such as inaccurate cost and schedule estimates, thus introducing risk. This primary code also includes statements concerning the mindset and attitudes of the project team. Clear links can be drawn here to Theme 1. Although independent of the ESG context, data suggests that openness to new ideas, continuous learning, and readiness for innovation and change are crucial for project success. In this context, competence encompasses not only technical project know-how but also a degree of social competence, as could be identified. Commenting on the impact of poor collaboration and a lack of focus on the success of individual projects, Participant L, a sustainability consultant, explained:

"A project is doomed to fail if we have people who simply want to push through their agenda."

In summary, it can be concluded that, for a project to succeed, it is essential to consider and optimally anticipate the market environment. Furthermore, the project must be carefully planned and examined in its early stages to prevent undesirable developments. Additionally, the internal and external project teams must possess sufficient competencies to ensure the successful execution of the project.

4.4.3 ESG benefits

Following the detailed discussion of the contributors to project success and the risks impacting project success, now the research findings on ESG benefits will be presented. In the third sub-theme four primary codes were developed, namely, contribution to sustainability, tangible benefits, targeted ESG impact, and intangible benefits.

To avoid leading the participants in a specific direction, the questions on ESG benefits were initially posed broadly, asking why both the participants and their companies are involved in implementing ESG measures. Only after the interview participants provided a general explanation of their motivation for implementing ESG measures were more specific questions regarding the benefits of ESG in projects were posed. Although opinions were not entirely uniform, the positive **contribution to sustainability** could be identified as central motivator. Participant C, a sustainability consultant, emphasised this by stating:

"Why do I do this? [...] Simply because I'm a firm believer. There is no other option than to address climate change and see how we can improve things [...]. I feel a responsibility here on this planet."

From a corporate perspective, Participant T, a sustainability manager, added:

"In my opinion, companies should engage with this because they are an important part of our society, and with that comes responsibility. Many changes in these developments can only be driven by companies, so, for me, this responsibility aspect is a key reason [...]."

These statements underscore that participants view the main benefit of ESG integration as a meaningful contribution to sustainability. As highlighted in the project success sub-theme, sustainability is seen as both a success factor and a benefit of ESG, reinforcing its central importance.

When asked about specific ESG benefits, some confusion around the term arose. Practitioners were more familiar with "advantages", which was subsequently used to encourage broader responses. The majority of responses were falling under **tangible benefits**. These included measurable advantages such as increased competitiveness, higher rents or sales prices, lower vacancy rates, and reduced default risk. Of these, competitiveness stood out as the most frequently cited benefit. Data suggests that ESG measures are key to

ensure a project remains marketable, particularly regarding the exit strategy. Participant A, a project manager, summarised this by stating:

"If you don't configure the product accordingly, you'll fall through the cracks with many buyers."

As the interview with Participant A progressed, it became clear that "buyers" primarily referred to institutional investors who seek investment opportunities that meet the technical screening criteria of the EU Taxonomy (Kempeneer *et al.*, 2021). However, the collected data suggest that it is not just the sale of a project that is linked to ESG benefits but also letting activities. Large companies, especially, are increasingly considering ESG measures when renting commercial spaces. Projects that incorporate these measures can gain a competitive edge. Thus, competitiveness was seen as the most critical tangible ESG benefit, both on the sales and letting sides. However, there no consensus could be identified on whether projects with ESG measures explicitly gain a marketing advantage (green premium) or if these measures ensure marketability. Some evidence was found for a clear competitive advantage whilst other data described it as necessary, where failure to consider ESG measures leads to penalties (brown discount), and their inclusion represents a new standard. When the consideration of ESG measures is not related to advantages but rather is viewed as a new normal, parallels to Edmans (2022) can be found.

Nevertheless, it can be stated that a direct link is perceived between the integration of ESG measures in a project and its competitiveness. Additional tangible ESG benefits related to the economic aspects of projects were identified, such as lower vacancy rates, improved financing conditions, better insurance terms, and enhanced access to subsidies. Evidence highlighted compliance with the EU Taxonomy requirements through the implementation of ESG measures as a significant benefit, thereby creating a direct link to the previous discussion.

At this point, however, it also became clear that only specific ESG measures are perceived to yield an actual ESG benefit. This was reflected under the primary code **targeted ESG impact**. A pattern emerged suggesting that primarily environmental measures, which fulfil the technical screening criteria of the EU Taxonomy, are the ones most likely to provide significant tangible ESG benefits. Other measures, particularly those related to specific

building materials or biodiversity initiatives, are often overlooked. Participant T, a sustainability manager, emphasised this point, stating:

"If you say today, you're building a cradle-to-cradle building or one that's somehow deconstructible, that's great, but you must find someone who recognises and rewards that. You could make it so smart that the additional costs are limited or non-existent. However, in most cases, there are additional costs [...] and in most cases, it's not rewarded as much as an efficiency building."

This underlines that only a few ESG measures – particularly in the environmental domain – clearly connect to tangible benefits, such as facilitating project sales. Measures not yet addressed by the EU Taxonomy, especially in the social and governance areas, struggle to show direct, measurable advantages. The absence of clear ESG requirements or compliance criteria makes it difficult to establish consistent links between these measures and tangible outcomes. Where such links exist, they tend to be case-specific and not broadly generalisable. Practical examples in which certain social measures led not only to positive perceptions but also to tangible outcomes, such as improved rental performance were occasionally mentioned. However, it must be noted that these single projects' experiences are not universally transferable to other projects. Nevertheless, these experiences reveal connections to the above statements and conclusions about tangible ESG benefits.

While significant ESG benefits could be found, particularly concerning a project's competitiveness, it must be noted that this view, though prevalent, was not unanimous. The data suggests differentiating between various measures, with specific governance measures, for example, not universally seen as beneficial or specific asset classes perceived as experiencing less impact. In isolated instances, even potential adverse effects of ESG measures on project success were noted. For example, Participant B, a sustainability consultant, argued:

"It depends on how you define project success. If the goal is generating profit with the project, then it [ESG] can be challenging. Currently, there are many additional requirements for new buildings, and the 'E' [environmental measures] aspect, in particular, can be an obstacle."

This statement again links ESG benefits with project success, but, unlike the often-positive associations, it highlights a potential risk to project success about ESG integration. The high requirements in the environmental area, stemming from legislation and the EU Taxonomy, are not viewed as benefits here but rather as obstacles. These ESG challenges are also discussed in greater detail in *Section 4.5.1* in Theme 4.

In addition to measurable benefits, **intangible benefits** have been frequently mentioned, with image and credibility being the foremost. Participant I, a sustainability manager, explained:

"ESG measures, sustainability efforts, are always positive for the image."

The data confirmed this connection between the implementation of ESG measures in projects and a positive effect on the image of a company or project. Participant H, a sustainability consultant with 16 to 20 years of experience, similarly argued that ESG can foster greater creativity and innovation, but

"[...] on the other hand, it is also a marketing issue. When a company can step forward and demonstrate its capabilities, this reputation spreads in the market. Once trust has been established, the company becomes a preferred partner in this space."

This statement highlights a frequently mentioned point. It becomes evident that not only is a project's competitive advantage enhanced through the implementation of specific ESG measures, but market access is also improved due to the positive image generated by adopting these measures. It became evident that implementing ESG measures can enhance the image of the real estate developer, potentially creating advantages in approval processes. Prioritised treatment in urban development processes or speeding up the processing of building permits can, in practice, be a substantial benefit. However, as suggested by the previously cited statement, this benefit may be granted only to those who integrate ESG measures into their projects. This positive image, however, not only impacts market access but can also provide advantages in recruitment and employee satisfaction. Evidence could be found that the enhanced image a company gains by incorporating ESG measures into projects also increases its attractiveness to employees and potential candidates. Participant I, again, reinforced this benefit from the perspective of recruiting:

"It's a marketing factor – not just for the property but also for attracting talents. It would likely be difficult for a company indifferent to sustainability to attract skilled professionals."

Evidence was found that many practitioners in the sector were personally motivated to work on ESG-focussed projects, finding purpose in this work. Several findings from this study support this. Theme 1 revealed a shared conviction that ESG issues – like carbon emissions – must be addressed, aligning employee values with a company's ESG-driven image. This is echoed in a prior primary code, where most participants identified contributing to sustainability as the main benefit of ESG integration. These beliefs help explain the perceived positive effect of ESG on employee engagement. However, also raised concerns about greenwashing, where ESG is used for image-building without meaningful action, could be found. This reinforces earlier discussions in Theme 1 about the risk of ESG being misused for superficial gains.

4.5 Theme 4: ESG integration factors

This theme synthesises the experiences, perceptions, and opinions of the interviewed senior project practitioners regarding the integration of ESG measures into the development process of German real estate projects. Four sub-themes emerged from this analysis (see **Figure 4.5**). The first sub-theme addresses the challenges that participants identify in working with ESG and, precisely, in integrating ESG measures into real estate projects. The second sub-theme summarises key statements from participants that focus on company-level ESG integration factors, while the third sub-theme focuses on the project-level. The fourth sub-theme is included solely for the sake of completeness and addresses external factors. No additional primary codes were deliberately assigned to this sub-theme to remain within the scope of this study.

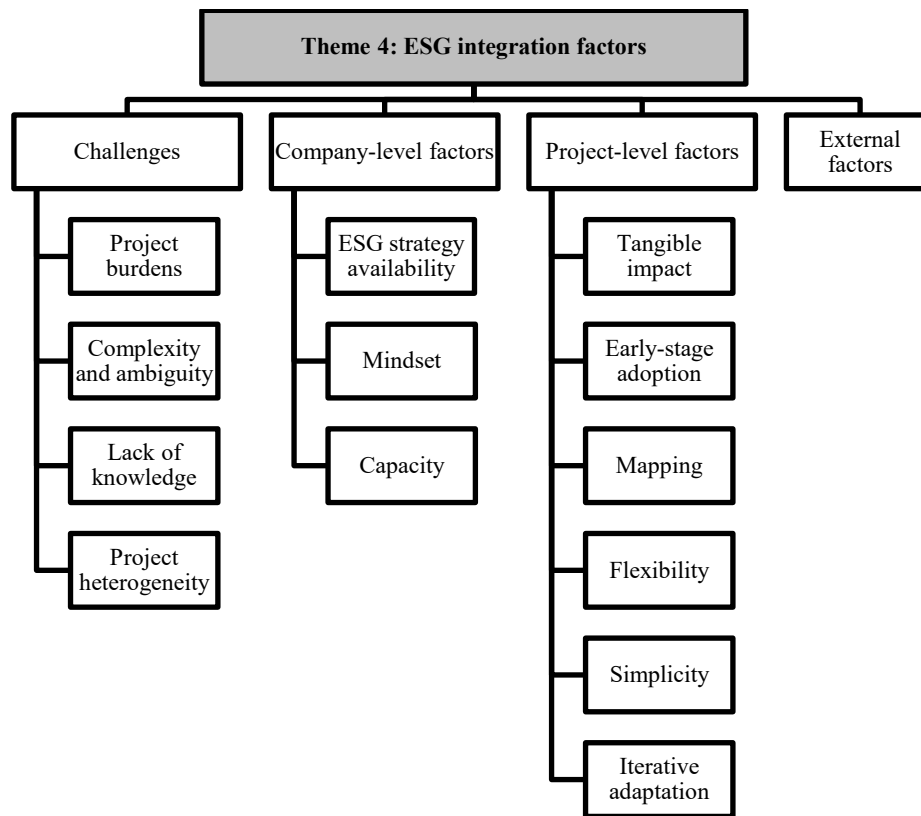


Figure 4. 5: Illustration of sub-themes and primary codes of Theme 4

Source: Researcher (2026)

4.5.1 Challenges to ESG integration

The first sub-theme discusses the challenges to ESG integration in German real estate development projects. Various challenges could be identified and will be presented in four primary codes: project burdens, complexity and ambiguity, lack of knowledge, and project heterogeneity.

A recurring pattern was the **project burdens** associated with ESG measures. This was mentioned at various points in the discussions, whether in relation to project success, ESG benefits, or ESG measures in general. It emerged that most interview participants believed that incorporating ESG measures in real estate projects is likely to lead to burdens across all three ESG areas. These project burdens include, among other factors, increased costs, reduced project revenue, greater project effort, or extended project timelines. Concerning costs, a range of reasons were identified, such as higher material prices for carbon-free or carbon-reduced steel and cement, elevated costs due to stricter insulation standards, or the

requirement to install additional technology to meet energy standards. Participant J, a sustainability manager, summarises the challenges to ESG integration:

"The problem, to some extent, is simply the cost factor, which we need to get under control."

Similarly, Participant A, a project manager, responded to the question of what might hinder ESG integration in real estate development with,

"Costs! Certainly, one of the main reasons why integration doesn't work. If it were cost-neutral, few would say they prefer a less ESG-compliant project."

Evidence suggests that many developers hesitate to adopt ESG practices due to higher upfront costs, despite potential long-term benefits. These costs can threaten project viability, especially under the trader-developer model, where operational performance is secondary (Walker and Brammer, 2009; Ochieng *et al.*, 2014). As a result, short-term cost concerns often outweigh long-term gains, such as reduced operating expenses. While ESG is often linked to benefits (*see Section 4.4.3*), this context highlights its burdens. Questions regarding whether ESG integration truly provides a competitive edge or simply ensures baseline market access could be found in the collected data. Most agreed that ESG measures initially strain profitability. Though these burdens cannot be eliminated, understanding them offers valuable insight into barriers hindering ESG adoption.

The next two primary codes are closely interrelated. First, the primary code **complexity and ambiguity** was developed. This code addresses the challenges in handling ESG issues due to the overall field of ESG still being relatively unstructured, with practitioners expressing that they lack a clear overview. This lack of clarity presents a challenge to successful ESG integration. The data suggested difficulties in navigating the vast amount of information on the topic, the continuously evolving regulations, and the various market providers, making it hard to maintain an overview of the key issues and leading to uncertainty among practitioners. Participant D, a sustainability manager with more than 20 years of work experience, emphasised:

"In my opinion, it [ESG] has too many dimensions, and the significant ones are not emphasised enough."

Participant Q, also a sustainability manager, expressed a similar view, noting:

"The challenge is filtering out what is relevant."

Participant D and Participant Q express a concern that was clearly identifiable in the data: ESG is a broad field, and, as discussed in detail in Theme 1 (see **Section 4.2.3**), there is no unified understanding within the industry regarding how ESG should be defined, delineated, or applied. In practice, this lack of consensus results in uncertainty about which aspects are truly important for individual projects. Participant E, a sustainability consultant, describes this challenge with regard to the variety of ESG initiatives and frameworks:

"I actually believe that this is currently causing a lot of confusion because there are just so many initiatives and scoring models. [...] How relevant is this now? Which certification systems are included, where is there overlap, or not? How does this play into portfolio assessments? [...]"

Although various initiatives and frameworks have emerged, they have yet to provide the industry with clear guidance on what is truly relevant for real estate development. This practical insight reinforces this study's aim. Beyond the ambiguity of frameworks and scoring models, participants also pointed to evolving regulatory and legislative requirements as a major challenge.

It was also observed that not all measures suit every project, further increasing ambiguity. Conflicting objectives were another issue: for instance, enhancing quality of life might increase energy use, while installing photovoltaics could reduce public open space. These examples show how ESG measures can conflict, making integration complex. The uncertainty around which regulations apply to which projects further complicates effective ESG implementation.

Closely tied to the previous primary code is **lack of knowledge**. A limited understanding of what ESG involves and how to apply its measures could be observed. It refers to project stakeholders' unfamiliarity with both the existence and implementation of ESG measures. Few professionals in the real estate sector are directly engaged with ESG or possess the expertise to apply it effectively. As Participant J, a sustainability manager at a nationwide real estate developer, explained:

"Very few people in the industry have actively dealt with it, who have a certain perspective, and who also have the knowledge."

According to the analysed data, ESG integration requires specialised knowledge across various areas, including compliance, legal issues, project management, architecture, and construction. This complexity, in particular, makes it difficult for project teams to fully understand ESG and implement it in their projects. In the context of knowledge, it was also repeatedly mentioned that a significant portion of project stakeholders and decision-makers would express some resistance to the integration of ESG measures. It emerged that ESG integration requires existing workflows to be re-evaluated and adjusted. It was argued that there must be a willingness to acquire knowledge on ESG measures within their sector. This poses a particular challenge for stakeholders who have been active in the industry for many years. It is important to note that none of the interview participants opposed ESG integration. Instead, they observed this resistance among other project stakeholders in their day-to-day work and perceived it as a challenge.

Another interesting pattern related to the primary code lack of knowledge emerged only through repeated listening and detailed review of the data. Specifically, when asked about concrete ESG measures or benefits, participants often provided no specific responses or hesitated for a prolonged period before giving evasive answers. Poland and Pederson (1998) argue that, while transcribed speech often takes centre stage in qualitative research, what remains unsaid can be equally insightful. It is not only evasive answers or omissions that can offer significant insights in qualitative research, so can pauses or extended silences (Mazzei, 2007). In this regard, it was notable that participants responded expansively when discussing personal experiences, attitudes, or assessments but tended to respond evasively when asked to specify measures. The researcher attributed this to a lack of knowledge. At this point, it must be noted that the researcher made clear at the start of the interview that questions were not a knowledge assessment and that the inability to answer specific questions would not in any way affect the relevance of the participants' other statements for the study. Participants were informed that these questions were solely intended to provide a general overview of the opinions, experiences, and perceptions of practitioners within the industry. The researcher assumes that this open atmosphere fostered truthfulness among research participants, leading them to openly acknowledge their knowledge gaps in certain areas of

the topic, whether these potential knowledge gaps were verbalised or not. For instance, Participant I, mentioned:

"Well, I have to say, I am still learning. I'm not that well-versed [...]"

Similarly, Participant R, a project manager at an international real estate development company, responded to a question about specific ESG measures by stating:

"[...] I struggle to answer that."

Likewise, Participant A, a project manager with five to 10 years of experience, responded to a follow-up question about specific ESG measures with:

"Nothing immediately comes to mind that I could implement."

From these responses, it can be concluded that some participants openly admitted to gaps in their knowledge, particularly regarding specific ESG measures or benefits. This is further supported by the evasive responses of other participants, even if they did not explicitly acknowledge their lack of knowledge. This finding in the data is particularly noteworthy, as expertise in sustainability in real estate development was a criterion for selecting the research participants.

A frequently cited challenge to ESG integration is captured under the primary code **project heterogeneity**. As discussed earlier in Theme 1 (see **Section 4.2.1**), the diversity of the real estate market significantly shapes ESG perceptions. Similarly, the heterogeneity of projects and organisations complicates implementation. Different companies and departments must share a common understanding of ESG, yet this is difficult given the sector's fragmented nature. Project uniqueness – driven by location and use – has long been acknowledged in real estate research (Galati and Teppa, 2017). In the ESG context, however, this heterogeneity creates integration challenges. The data clearly showed that there is no one-size-fits-all solution. Project type, stakeholders, and local context all influence ESG relevance. ESG priorities for commercial buildings differ from residential ones. Residential developers, for instance, focus on affordable housing, while commercial developers highlight user experience. Likewise, location strongly impacts the feasibility and importance of certain ESG measures. It emphasised that, once the decision to purchase a plot for real estate development has been made, the location can no longer be changed. Several examples were found in the data in this context, such as the availability of district heating connections,

flood protection measures, or the sunlight hours required for installing solar panels. These ESG measures depend on conditions beyond the developer's control, yet they significantly impact the relevance of selected ESG measures. In addition to location and asset class, another important factor in deciding relevant ESG measures is whether the project involves redevelopment of an existing property – such as converting an office building into residential space – or whether it is a new construction. The ESG measures that are considered meaningful to incorporate differ significantly between these types of projects. Participant C states:

"There must be a distinction between new developments and existing buildings."

This heterogeneity further emphasises that ESG cannot be understood as a consolidated concept, as was sufficiently argued in Theme 1 (see **Section 4.2.3**). Data analysis revealed that each project requires an individualised strategy, and a one-size-fits-all approach is ineffective for integrating ESG measures into real estate projects. Instead, it is essential to consider the asset class, usage, development type, and, ultimately, the capacity and capability of the developer.

4.5.2 Company-level factors

The second sub-theme under the broader theme of ESG integration factors focuses on company-level influences. It captures patterns, suggestions, critiques, and recommendations for integrating ESG measures into real estate projects from a corporate perspective. Although this study centres on the project-level, data analysis made it clear that projects cannot be viewed in isolation from the organisation. As such, key company-level factors are analysed under three primary codes: ESG strategy availability, mindset, and capacity.

Under the primary code **ESG strategy availability**, several statements emphasised the need for a clear, company-wide ESG strategy, effectively communicated to employees. Such a strategy is critical for purposeful ESG integration at the project-level. Without it, alignment and consistency in project implementation may suffer. It was found that upper management must provide a guiding vision or ESG framework that can be translated into individual projects. Participant E, a sustainability consultant at a nationally active project and sustainability consultancy, described it as:

"There should be a strategy set for the entire company because it doesn't make sense to implement small actions in isolation at the project-level without understanding how they contribute to the bigger picture."

Project manager Participant A supports this call for an overarching strategy, even referring to a guiding vision in relation to ESG, stating:

"This brings us back to the point that a guiding vision is needed within the company so that the guiding vision can accompany the whole process. It's difficult to do ESG products randomly. But if it's clearly on the agenda, you can follow it step by step."

These statements highlight a point that clearly emerged in the data: it is essential for the company-level to provide clear guidance on how to approach ESG. Adding to this insight, Participant K, a sustainability manager with more than 20 years of work experience, succinctly articulates a recurring request from other participants:

"The responsibility lies with top management, the supervisory board, the executive board, and the management."

ESG strategy availability is closely tied to the management level. There was vast agreement that ESG strategy must originate from leadership in a **top-down approach** to effectively cascade from management to employees and ultimately to project teams. Both the importance of an ESG strategy and the need for a top-down approach were mentioned in 37 interview statements, underscoring the crucial role of the company-level in enabling effective ESG integration at the project-level. Participant Q, a sustainability manager, reinforced the need for company-level commitment while also introducing an additional aspect explored later:

"The most important thing is that it must be organisationally anchored within the structure of the company,"

further explaining:

"There must be a strategy, goals, and measures that are standardised across the company. Otherwise, it will eventually become unmanageable and difficult to control."

Participant Q advocates for an ESG approach encompassing all organisational activities, thereby establishing a standardised process. Additionally, it was emphasised that the importance of setting clear goals which enable the measurability and achievability of ESG initiatives. In the further discussion within this theme, this will be explored in greater depth as a fundamental factor of effective ESG integration.

With similarly high relevance and mentions at various points in the data, the sub-theme **mindset** was developed. As elaborated in Theme 1, differing views within the industry on how ESG should be approached could be identified. When asked about the most significant enabler for integrating ESG optimally into real estate projects, the most common responses focussed on the mindset of practitioners, management, or project partners. For instance, Participant J, a sustainability manager with 11 to 15 years of experience, observed:

"The challenge is not really in the measures or materials, but in the mindset of the developer."

The data suggests that successfully integrating ESG measures requires a mindset that is not yet prevalent across the industry. A unified and comprehensive understanding of the importance of ESG implementation within project teams is essential, according to the analysed interview material. When asked what would best facilitate ESG integration, Participant F, a project manager with more than 20 years of work experience, responded by suggesting that:

"It would be implementing a guiding culture for all employees – it's all about the mindset. Because, once the mindset is there, you don't need to explain anymore; things start moving on their own."

This shared understanding, or guiding culture, refers to company-wide awareness – from leadership to project teams – of why ESG matters, how it affects project success, what neglecting it entails, and how to implement it effectively. It was identified that this mindset is a crucial foundation for meaningful ESG integration at the project-level. Without it, implementation lacks purpose and coherence.

Building on this the primary code **capacity** was developed. Effective ESG integration requires sufficient company-level resources – staffing, budgeting, time for training, and strategy development. ESG must be prioritised and supported with dedicated space within

the organisation. This links back to mindset: decision-makers must value ESG enough to allocate resources, while teams must be ready to apply them. Participant E, a sustainability consultant with five to 10 years of experience, summarised:

"Start earlier, create understanding, allocate time and budget for these topics."

This statement establishes a connection to the previous primary code of mindset and relates to the components of project success – timing, budget, and quality – discussed in Theme 3 (see **Section 4.4.1**). Thus, there is a direct link between creating capacity for ESG integration and overall project success. However, capacity can also refer to enabling the opportunity at the company-level for in-depth engagement with ESG topics. The lack of knowledge has been discussed extensively as a significant challenge for ESG integration. Providing employees with opportunities for professional development and deepening their understanding of ESG could be identified as possibility to address this lack.

A final aspect that emerged as a pattern from the data and falls under the primary code of capacity is personnel capacity. There was a call for clear accountability for ESG – an appointed position or team responsible for understanding and integrating the previously discussed dynamic regulations and the overall complexity of ESG into the company. At the same time, the data did not provide a definitive model for how this role should be structured, whether as an independent department or as a dedicated ESG representative within each project team. Nevertheless, it became evident that clear accountability and responsibility can significantly enhance the effectiveness of ESG integration. However, for this to happen, the company must allocate the necessary capacity.

4.5.3 Project-level factors

Given this study's focus on the real estate development process and project-level, the sub-theme project-level factors is particularly relevant to achieving the research aim. This section presents senior practitioners' views on key actions or considerations for integrating ESG effectively. These insights are grouped into six primary codes: tangible impact, early-stage adoption, mapping, flexibility, and simplicity and iterative adaptation.

The **tangible impact** code captures the need for ESG measures to be measurable, or where qualitative, translated into quantifiable indicators. While previously discussed in relation to corporate ESG strategy traceability, it was also identified as a standalone priority. Acknowledging that some ESG aspects resist quantification, participants stressed the need for ESG frameworks to set measurable project-level goals. This would allow clear evaluation of implementation success and create a basis for comparability and market standards. Participant D, a sustainability manager with over 20 years of experience, when asked about a critical enabler of ESG integration, suggested:

"We need to define performance indicators and goals."

This highlights that the successful implementation of ESG measures requires a form of measurability for the self-defined goals. Participant T, a sustainability manager with 11-15 years' work experience, provided an important insight, noting that not all ESG measures considered important can be quantitatively measured:

"I believe not everything can be measured. There are also successes that cannot be quantified, but, generally, I think it is important to at least define the goals and then verify whether what was defined has been achieved, either through measurement or other forms of evaluation."

This statement further underscores that it is not only quantifiable outcomes that play a role in measuring ESG performance. Qualitative outcomes must also be assessed to effectively implement ESG measures. Particularly in the context of social initiatives, it was repeatedly emphasised the challenges associated with measurability. This evaluation is exemplified by the statement of Participant E, a sustainability consultant:

"It is incredibly difficult to quantify. For example, with a life cycle assessment, I can calculate and demonstrate whether I meet certain values. But how do I measure social sustainability?"

With regard to how ESG measures can be most effectively implemented in projects, these statements collectively highlight that the evaluation, measurability, or assessment of predefined goals is crucial. Only through the evaluation of these goals can it later be determined whether they have been achieved, thereby establishing a connection to project success. If project success is defined to include the achievement of ESG measures, their

evaluation ensures transparency in this regard. Participant N, a project manager with 11–15 years of experience, summarises this sentiment:

"It is important to challenge people by setting realistic and ambitious goals and measuring them against tangible outcomes."

To ensure adequate measurability, there was a consensus that the individual ESG project strategy, which includes specific ESG measures for the project, should be established early in the project timeline. It was agreed that **early-stage adaptation** is essential for effectively integrating ESG measures and making them measurable. In total, 35 statements from interview participants could be allocated to this primary code, which underscores the importance of the early consideration of ESG measures in the real estate development process. Participant H describes a common situation experienced in the role as consultant for sustainability issues in German real estate development projects:

"You enter the meeting and realise the decision has already been made, as you can no longer significantly intervene in the project. At that point, it's simply not feasible, given the state of affairs and how far the project has already progressed, even during the planning phase. It's always striking to witness this repeatedly."

The realisation that early consideration of all project-relevant requirements, conditions, and circumstances is of paramount importance is not new and has been extensively addressed in the literature, for example, by Samset and Christensen (2017) or Herz and Krezdorn (2022). However, this statement further underscores the importance of the early integration of ESG measures as well. While the importance of early timing was evident, there was no consensus on the optimal moment to initiate this process. Some argued that this should occur during the transaction phase, while others believed that the early project conception phase was the appropriate time. Participant D, a sustainability manager, holds following opinion:

"The [ESG] topic must be integrated into the project idea from the beginning on. It must belong to the identity of the project [...]"

This statement highlights once again the critical importance of considering measures at a very early stage. ESG considerations must be addressed as early as the project conception phase and during the formulation of key project decisions. Retrofitting ESG measures is difficult, if not impossible, and typically comes at a higher cost. Particularly in light of the

project burden of increased costs emphasised in *Section 4.4.2* and *Section 4.5.1*, the findings suggest the perspective that early integration of ESG measures does not necessarily lead to significant cost increases. Participant S, a project manager, explained:

"If certain measures and concepts are integrated and considered early on, it does not result in substantial planning costs."

Early-stage adoption connects to another primary code that emerged as an important project-level factor for successful ESG integration. Under the umbrella term **mapping**, all statements addressing the complexity of the development process and the importance of breaking-down individual project phases to consider which measures should be implemented at the most appropriate time were summarised. The data showed that there are different requirements for various real estate development phases, which must also be reflected in the ESG measures. For instance, Participant F, a project manager, stated that:

"These ESG ideas must manifest in the project phases where the major decisions are made."

Similarly, Participant B, a sustainability consultant at an international consultancy, highlighted the importance of considering the phases of project development:

"You can write down the classic project development phases and lay them out side by side, and then see, if we want to build a sustainable project, what needs to happen when?"

Participant I, a sustainability manager at a nationwide real estate investment and development company, underscored the importance of mapping by saying:

"What would certainly help is if there were guidelines or instructions, a step-by-step programme. How can I integrate sustainability into which phase of the project?"

This focus on mapping underscores the need for a structured approach to systematically integrating ESG considerations at each stage of the project life cycle. The data clearly showed that a clear step-by-step guide that aligns ESG measures with specific project phases is required for a successful ESG integration.

While the mapping approach might give the impression that successful ESG integration in German real estate projects merely requires breaking down the development process into its components and assigning corresponding ESG measures, this assumption is refuted when considering the previously discussed heterogeneity – both of the market (*see Section 4.2.1*) and of real estate projects themselves (*see Section 4.5.1*). Therefore, the primary code **flexibility** aligns at this point, emerging as another critical project-level factor for successful ESG integration. This means that an ESG framework must be adaptable to the specific needs of its users, the company, and especially the project. It was repeatedly emphasised that different approaches are required depending on whether it is a new or existing development, a residential or commercial project, or an urban or peripheral development. There is evidence to conclude that an ESG integration framework must account for the heterogeneity of the real estate development market. Participant T, a sustainability manager at an international real estate investment company, suggested that:

"I think it's important that real estate development always remains flexible, and criteria must always change [...] and it's important to maintain this adaptability."

In general terms, Participant Q, a sustainability manager at an international real estate development company, explained:

"There are so many aspects that truly differ from project to project."

One aspect to consider, which can differ from project to project, is the users of a building. Kempeneer *et al.* (2021) emphasise in their work the importance of accounting for the individuality of a property's users when evaluating ESG measures. It becomes evident that flexibility – both in the framework itself and in the various measures – must be ensured to achieve successful ESG integration. The characteristics of the company, the project itself, and the project environment are critical in determining which ESG measures are selected and how they are implemented.

As a further project-level factor for ESG integration, the primary code **simplicity** was identified based on the statements of the senior practitioners interviewed. The consensus was that the complexity of a framework must not be too high so that all project participants, both internal and external, can apply it. This factor appears to be of significant importance, particularly in light of the previously discussed points regarding the immense complexity of

the ESG topic and the still prevalent lack of knowledge (see **Sections 4.2.3 and 4.5.1**). Participant D, a sustainability manager, highlighted that:

"Simplification to a few factors or fewer concepts is important because not every market participant has the time or ability to learn all the concepts, certifications, and so on. The consolidation and simplification of data, and then the clarification of the success and progress of ESG measures overall, should be achieved this way."

This statement underscores the need to focus on a few but concrete measures for implementation to avoid getting lost in detail. Participant I, a sustainability manager, added:

"I don't always have to roll out the full programme and incur immense costs, but I can also selectively implement the most important factors [...]."

The statements of the participants suggest that the goal is not to develop a simplified model to avoid engaging comprehensively with the topic but rather to identify the measures that have the greatest impact and focus on these. This approach avoids initiating too many measures, which could lead to worse outcomes than if the focus had been on the essential ones. A significant connection to the ESG benefits outlined in **Section 4.4.3** can be established here. When examining how ESG measures enhance project success, it becomes clear that the selection of ESG measures should prioritise those that demonstrate a measurable or evaluable link to ESG benefits and, consequently, to project success. Less critical ESG measures for a specific project should not only be considered secondary because they have a reduced impact on project outcomes but also because they can unnecessarily complicate the real estate development process, potentially posing a risk to overall project success.

As the final primary code in this theme, statements are summarised that emphasise the idea that applying ESG measures in projects is not a rigid path that should remain unchanged. On the contrary, the insights paint a clear picture that continuous **iterative adaptation** is necessary to integrate ESG measures as effectively as possible. The necessity of this iterative adaptation arises from two main reasons. First, each project generates new insights that help in understanding which measures were effectively integrated and where the integration process was successful or faced challenges. Participant E, a sustainability consultant, succinctly summarised this point:

"You have to learn from project to project [...]".

Similarly, Participant O, shared how feedback is used to iteratively improve ESG measures:

"In some projects, we now conduct tenant surveys in asset management to identify relevant issues, so we can implement them better in new projects and learn from them."

These statements highlight that a strategy developed for implementing ESG measures does not need to be set in stone. Instead, the focus should be on leveraging insights gained through practical application to continuously improve the implementation process. This improvement can be informed by the experiences of the project team itself or as suggested by Participant O, by incorporating feedback from project stakeholders.

The second reason for the necessity of iterative adaptation lies in the ever-evolving nature of ESG measures. To align with this constantly changing landscape, the application of ESG measures must also be continuously revised. This adaptive approach ensures that ESG strategies remain relevant, effective, and compliant with the latest standards and opportunities. Participant S, project manager at a regional operating real estate development company, argues:

"The way I handle ESG in my projects naturally adapts to regulations and legal requirements. Just look at the whole confusion surrounding the Building Energy Act or the cancellation of KfW subsidies for new construction. We have to continuously adjust ourselves and the way we work [...]"

Participant S highlights two key points: first, the public debate surrounding the amendment of the Building Energy Act, which introduced new requirements for the real estate sector regarding the efficiency of heating systems (tagesschau, 2023). Second, Participant S mentions the cancellation of subsidies for the construction of energy-efficient buildings by the responsible federal ministry (BMWK, 2022). This statement underscores how significantly the legal and funding frameworks associated with ESG measures can change. It also highlights the necessity for ESG measure implementation to account for these evolving conditions. Practitioners must remain adaptable, ensuring that their approaches align with the latest regulatory and financial frameworks to maintain compliance and capitalise on available opportunities.

4.5.4 External factors

Although this study primarily focuses on the real estate development process and the project-level, the interviews conducted also repeatedly included statements addressing various external factors. Without shifting the focus of this study to these external factors, they will be briefly and not too extensively analysed for the sake of completeness. In particular, the legislative level was frequently observed in the data, with specific reference to the EU Taxonomy. Not only legislation but also the incentivisation of ESG measures, for instance, through subsidies or funding programmes, was highlighted as a significant promoter of ESG measures in German real estate projects. Given the shared understanding in both research and among the interviewed senior practitioners that ESG measures are crucial for achieving societal goals yet are primarily driven into the real estate industry through external influences such as legislation or financial markets, it is important to acknowledge these external factors in the context of this study.

Another aspect that could be identified in the analysed dataset concerns the business model of trader-developers. While this segment of real estate development is central to this study, it was argued to be problematic. Although the influence of the trader-developer business model on project success (*see Section 4.4.1*) and ESG integration (*see Section 4.5.1*) has already been discussed, it is worth restating that some participants view this business model as so critical that they see it as a reason why the ESG measures implemented are not necessarily those most beneficial for the project and its success, but rather those that align most closely with the developer's business model and objectives. Since the aim of this research is not to develop a new business model for real estate development that optimally integrates ESG, but rather to explore how ESG measures can be integrated into existing project development processes, this aspect will not be further explored.

4.6 Chapter summary

This chapter summarised and analysed the insights of senior practitioners on ESG in real estate development. Four key themes with related sub-themes and primary codes emerged from the interviews. It was found that ESG is not a unified concept with a fixed application. Instead, ESG comprises diverse measures across environmental, social, and governance

categories. Aside from emission reduction, there was no clear consensus on which ESG measures are most relevant for German real estate projects.

Effective integration of ESG requires a shared conviction that ESG is both necessary and valuable. While ESG originates from the data-driven financial sector, its successful implementation in German real estate projects depends on mindset and personal commitment. Only with such conviction can ESG benefits be realised. Marketability was identified as a key benefit, though not all ESG measures yield clear benefits. Given the complexity of ESG, it is essential to identify project-specific, impactful measures. This involves creating a tailored, efficient ESG package aligned with each development phase. This chapter has provided critical insights towards answering the study's research questions. The next chapter offers a deeper discussion of these findings.

CHAPTER FIVE: DISCUSSION OF INTERVIEW FINDINGS

5.1 Introduction

In the course of this thesis, a thorough literature review and semi-structured interviews were used to explore the current understanding of ESG within real estate development and to identify key ESG measures and ESG benefits. Further insights have been collected on what an ESG integration framework should contain and what should be considered to integrate ESG measures into German real estate projects effectively. The aim of this chapter is to derive key insights in relation to these research questions. This is achieved through the targeted comparison and alignment of the literature-derived themes, which are systematically organised and presented in the conceptual framework of this study (*see Figure 2.3*), with the themes emerging from the interviews. Overlaps, contradictions, and nuances are discussed in detail in this chapter. The discussion in the following section is structured around the three research questions of this study.

5.2 Research Question 1: Ascertaining current ESG measures for German real estate projects

To address the first research question of this study, the ESG measures are divided into three specific areas, environmental, social, and governance, and the results are discussed separately for each pillar. This is preceded by a discussion of the insights gained regarding the fundamental understanding of ESG measures. During the research, it became clear that, in academia and practice, there are significantly differing views on what constitutes ESG measures, making this chapter essential to address the research questions.

5.2.1 Current understanding of ESG measures

To best contextualise and understand the research findings about addressing the research questions, the insights of this study, derived from the literature and the interview data, revealed that it is first necessary to outline the fundamental understanding of ESG measures within German real estate development. This study's research questions and aim established that the current ESG measures being applied in German real estate projects are to be identified. As already indicated in the literature review and in the subsequently derived

conceptual framework theme, *conceptual ambiguity of ESG*, ESG remains an undefined concept, and a variety of terms are used in the literature to describe ESG measures (Xie *et al.*, 2021; Kyriakogkonas *et al.*, 2022; Pollman, 2022). Therefore, for this study, a working definition was adopted, stating that ESG measures, in the context of real estate projects, can be either qualitative or quantitative in nature and are related to project-specific ESG aspects that influence the project's success. The analysis of the collected data confirmed two key points regarding the working definition. First, the insights regarding the nature of ESG also appear to be valid in the context of German real estate development. Second, the developed working definition can be applied in this context, as participants themselves emphasised the contextual and project-specific character of ESG measures, as well as their qualitative and quantitative dimensions. The working definition can therefore serve as a foundation for the further discussion of ESG measures and their integration.

In addition to the ambiguity surrounding the terminology of ESG measures, this study has uncovered significant criticism regarding the overly generalised use of ESG as an umbrella term. While ESG compliance is frequently mentioned in both practice and research, it became evident that this is more of a constructed term, with no clear derivation from the actual implementation of ESG measures. Since, according to the prevailing views in both the literature (Eccles and Viviers, 2011; Billio *et al.*, 2021; Pollman, 2022) and among the industry experts interviewed, there is no unified or even legally mandated definition of ESG, there can be no true compliance with such a concept. Building on the themes derived from the literature review and the interview findings, this research suggests that ESG is better understood as a collection of individual measures, each with varied objectives such as climate change mitigation, value preservation, contributing to a healthy and prosperous society, or employee satisfaction. Hence, a key conclusion is that ESG does not constitute a consolidated concept. It is therefore interesting to note that ESG is still not fully understood, neither in practice nor in research, and is sometimes perceived as a consolidated concept (Kostrikin and Andreeva, 2023; Wang and Wen, 2023) or discussed in terms of ESG compliance within the real estate sector (Wagner *et al.*, 2022; Herkströter *et al.*, 2023; Straube, 2024), even though, as previously outlined, such compliance cannot exist. However, it must also be acknowledged that this perspective is limited to a smaller subset of scholars. Scholars who focus their research on ESG and the real estate sector predominantly refer to individual and specific ESG measures, factors, or metrics, rather than treating ESG as a consolidated concept (Kempeneer *et al.*, 2021; Robinson and McIntosh, 2022; Newell *et al.*,

2023). Similar findings also emerged from the interview data. While some participants referred to ESG compliance and the ESG concept, others explicitly criticised the use of such terminology and the resulting lack of understanding in the application of ESG measures. This also highlights why the discussion of the current understanding of ESG measures in both the literature and practice is so important for addressing the research question, particularly with regard to the identification of ESG measures. Without a clear understanding of what ESG measures are and how they should be applied, their effective integration into a complex business process appears difficult.

Additionally, it was revealed that not all ESG measures can be assigned to one of the three areas, environmental, social, or governance. Instead, these terms may have different meanings at the project and corporate levels. A key insight that emerged from the literature is that different levels of analysis—namely the project, portfolio, and corporate levels—play an important role in the assessment and integration of ESG measures. While previous research has tended to focus primarily on the corporate and portfolio levels, the project-level appears to have received comparatively little attention (Kim and Chang, 2022; Hayar *et al.*, 2025; Zheng and Lee, 2025). However, this finding was confirmed through the empirical data only with regard to governance measures. This divergence may, in part, be explained by the explicit project focus of the present study.

An example of the different meaning of ESG measures at the different level is promoting diversity. At the corporate level this may refer to ensuring no inequities or discrimination in hiring or forming project teams (Janssens and Zanoni, 2014). However, at the project-level, it may also apply to selecting service providers (Adobor and McMullen, 2007) or tenants (Reosti, 2020). Climate change adaptation is often viewed as an environmental measure, as it involves adjusting a real estate project to new ecological conditions. However, this adaptability also enhances resilience and protects the property's value (Stagrum *et al.*, 2020; Mutlu *et al.*, 2023; Stamatopoulos *et al.*, 2024). Value preservation, as a measure, would traditionally fall under the governance category in terms of shareholder interests (Zumente and Bistrova, 2021; Biasin *et al.*, 2024). At the same time, adapting to climate change through, for instance, sun protection, cooling, or flood prevention measures also positively impacts the safety and well-being of building users, making it relevant to the social category (Hong *et al.*, 2023; Cartwright *et al.*, 2025). The detailed examination of this measure

highlights the difficulty in clearly delineating between different ESG measures, showing that the boundaries between them often blur. To illustrate these blurred boundaries, **Figure 5. 1** presents exemplary measures assigned to the areas of environmental, social, and governance. It highlights that various measures cannot be clearly categorised but are instead situated between these poles. The blending colours emphasise the blurred boundaries of the three areas of action.



Figure 5. 1: Blurring boundaries of ESG measures

Source: Researcher (2026)

Furthermore, the study also highlights that the boundaries not only blur, but that ESG measures can sometimes even pursue conflicting objectives. While the fact that traditional project objectives and ESG objectives can be competing is described in the literature (Carvalho and Rabechini, 2017; Sabini *et al.*, 2019; Adebayo and Ackers, 2024), conflicting objectives also occur within the ESG pillars. This insight that was already addressed in the conceptual framework under the literature-derived theme *ESG agenda* and reinforced by the empirical material presented in Themes 2 and 4 (see **Sections 4.3 and 4.54.4**), can be discussed through the lens of paradox theory. This view suggests that conflicts and

competing objectives within and across the ESG pillars should not be understood as mere implementation failures, but as persistent tensions between objectives that are simultaneously desirable, interdependent, and partly contradictory (Smith and Lewis, 2011; Hahn *et al.*, 2014, 2018). As became clear through the theoretical and practical discourse of this study this circumstance is particularly relevant for real estate development. For instance, while the resilience of a building is important for maintaining its value (Burroughs, 2017), the incorporation of fallback systems – such as additional heating and cooling systems powered by fossil fuels – can contradict ESG measures aimed at reducing fossil fuel use (Hwang *et al.*, 2023). Similarly, higher insulation standards intended to increase energy efficiency may conflict with ESG measures focussed on reducing the overall use of resources (Grazieschi *et al.*, 2021; Almeida *et al.*, 2024). These examples further underscore that ESG cannot be understood as a unified concept. Rather, it consists of a multitude of individual measures that are not clearly distinguishable from one another. With regard to the research question, it becomes apparent that the identification of key ESG measures cannot be reduced to listing individual measures. Instead, it can be concluded that ESG measures in real estate development are interdependent, contextual and sometimes internally conflicting. In this context key ESG measures are not only those that appear frequently or are perceived to be important in isolation, but it is also more about their mechanism of action in relation to project-specific characteristics and interactions with other measures.

5.2.2 Environmental measures

This research confirms the prevailing view in existing literature that environmental measures are of priority in the real estate industry (Da Cunha Bezerra *et al.*, 2019; Kady, 2021; Lee *et al.*, 2024). However, within the category of environmental measures, discrepancies arise between the empirical findings of this study and the themes that emerged from the literature review. In the compiled ESG measures synthesis matrix (*see Table 2. 2*), the ESG measures mentioned in the literature are concisely summarised. While it is evident that the energy efficiency and the reduction of carbon emissions is highlighted in nearly all the reviewed studies, no clear prioritisation could be determined within the broader category of environmental measures (Ziolo *et al.*, 2019; Kyriakogkonas *et al.*, 2022; Morgante *et al.*, 2023). However, empirical data of this study showed a much clearer prioritisation within the environmental spectrum. The overarching goal of environmental measures is to reduce the carbon emissions of the real estate sector, which is why energy efficiency emerges as the

most prioritised environmental measure. Only after this are other measures, such as biodiversity, water protection, and responsible waste and material management, considered. Another key finding of this research is that the EU Taxonomy cannot be regarded as a comprehensive ESG framework, although this assumption is occasionally found in the literature (Buchetti *et al.*, 2022; Sipiczki, 2022) and was also reflected in the literature review of this study. In this respect, the findings from the empirical data provide a contradictory perspective, which appears to be of greater relevance in the context of real estate development. This can be argued, as was already outlined in the conceptual framework theme *regulatory and market-driven adaptation* that the EU Taxonomy and its screening criteria in the real estate context primarily focus on the environmental domain in the real estate industry (Norang *et al.*, 2023; Cheema-Fox *et al.*, 2025). The legislation, however, makes far fewer statements in the context of real estate regarding specific social and governance measures, which is why equating it with a comprehensive ESG framework is not accurate. However, adherence to the EU Taxonomy's technical screening criteria is a crucial benchmark in this area. Both literature and empirical findings suggest that environmental measures must align with the EU Taxonomy to ensure the successful implementation of ESG measures and contribute to the success of a project. From a theoretical perspective, the dominance of environmental measures indicates that ESG integration is shaped by institutional pressure. Environmental measures, particularly those related to energy efficiency and carbon emissions reduction, are more clearly reinforced by European or national legislation and market expectations than social or governance measures. For the integration of ESG measures, this suggests that environmental measures are not only prioritised because of their technical relevance, but also because they are supported by coercive and normative pressures in the real estate sector.

In addition to these two key insights, the literature review revealed that the domain of environmental measures is highly fragmented, encompassing a wide range of distinct actions. With the aim of illustrating the broad field of environmental measures in an organised manner, five sub-topics were established in **Table 2. 2**: Biodiversity, water, pollution prevention, energy and emissions, design and implications, and waste and materials. Each sub-topic contains between four and seven measures or indicators, some of which further aggregate various keywords or sub-measures. The empirical data of this study suggests that the presented synthesis matrix includes all the measures deemed meaningful and vital by the experts. However, the level of detail within the five sub-topics could not be

mirrored in the interview data. This is, however, hardly surprising given the research method used for data collection. While the literature review was designed to provide a comprehensive and in-depth analysis of the field of ESG measures, the interviews were primarily intended to capture experiences, opinions, and practical relevance. Against the background of the research question, which aims to identify the key ESG measures rather than all ESG measures in detail, this deviation is in fact purposeful. The synthesis matrix presented in the literature review therefore outlines the full range of potentially relevant ESG measures, whereas the empirical data allows the study to address the core of the research question, namely the identification of the key ESG measures. What could be clearly identified, however, is that energy efficiency and emission reduction are also regarded by the interviewed practitioners as the dominant environmental measures. Beyond this, no clear prioritisation emerged from the empirical data. However, a point of convergence could be identified in the way the measures were grouped. Both the literature and the empirical data suggested a measure-based assignment (Park and Jang, 2021; Morgante *et al.*, 2023; Zhang *et al.*, 2024). This means that a categorisation could be derived on the basis of the objectives pursued by the measures. In reflection of the empirical data, however, this form of classification appeared meaningful only for environmental measures, but not for social or governance measures, as will be explained in the following sections.

Further, it was determined that the appropriateness of applying additional environmental measures must be tailored to the project's specific characteristics. A blanket prioritisation or prescriptive approach to ESG measures in the real estate development market would overlook the inherent heterogeneity that defines real estate development and could lead to less effective ESG integration. Instead, environmental measures should be aligned early on with the characteristics of the project and its objectives. A significant alignment with the research of Rivière *et al.* (2013) can be identified here. In their article, Rivière *et al.* (2013) argue that project objectives should be aligned with environmental issues in order to achieve sustainability. Although their study was conducted in the context of a sustainable town project in a different setting, a clear alignment can be observed regarding the overlapping goals of ESG initiatives and sustainability measures. This highlights the importance of achieving a project's various objectives while taking sustainability aspects into account.

5.2.3 Social measures

The analysis of social measures relevant to real estate projects in Germany found that the landscape is far less precise compared to the findings on environmental measures, which is in line with prevailing literature on social measures in related research fields (Missimer *et al.*, 2017; Gurmu *et al.*, 2022). It could be identified that social measures in German real estate projects lack a clear prioritisation that aligns with a specific overarching objective and is embedded in a supranational or national framework, such as the EU Taxonomy. Instead, social measures consist of numerous individual actions pursuing various objectives.

In *Table 2. 3*, all social measures identified in the reviewed studies are concisely summarised. The analysis revealed that social measures can be grouped into six significant sub-categories: community and municipality, health and well-being, design and implications, human rights, labour, and services. Each of these sub-categories can further encompass three to six measures, which may consist of sub-measures. Whereas the analysis of the primary data collected led to a classification that is less oriented towards the measures and more an application-oriented classification that refers to the project, the surrounding and the users.

In the literature review it could be derived that social measures universally focus on activities that place people at the centre of consideration (Hayat and Orsagh, 2015; Gurmu *et al.*, 2022; Newell, 2023b). The interview findings confirmed this view and provided insights how this can be achieved. It was mentioned that involving users and neighbours of a real estate project in the project's conception phase can help to align it with the needs and interests of the individuals who will live and work in the building or surrounding area for many years. To facilitate this engagement and alignment with public interests, various measures are available, which must be selected individually based on the project's specific characteristics. For residential projects, the provision of affordable housing is a key measure, according to the empirical findings. Similarly, for commercial projects, the affordability of rental spaces for small and local businesses has been identified as necessary. Interestingly, the affordability of residential and commercial space was only mentioned sporadically in the analysed ESG frameworks (Stanitsas *et al.*, 2021; Homagk *et al.*, 2023; Akomea-Frimpong *et al.*, 2024). One possible explanation for this divergence in the prioritisation of affordability as a social measure may lie in the empirical context of the remaining

frameworks. As outlined above, because real-estate-specific ESG frameworks are scarce, the scope of the review was extended to related contexts such as finance, investment, and construction. Nevertheless, it is striking that affordability plays only a subordinate role in these frameworks, while the empirical data in this study suggest that it is assigned a much higher priority.

A further divergence of literature findings and interview findings could be identified in terms of human rights measures. The examination of ESG frameworks showed a greater emphasis on measures related to human rights and labour than was evident in the responses of the senior practitioners interviewed. A possible explanation for this discrepancy could be that the frameworks analysed cover a broader regional scope, with few specifically addressing the German real estate development market. Since compliance with human rights and labour standards in Germany is considered less critical (Matten and Moon, 2008; Antal *et al.*, 2009), these measures may be deprioritised in the context of German real estate development. A convergence between the literature-derived and interview-derived findings was identified with regard to urban quality. At both levels, an increased importance was observed for processes aimed at ensuring the urban quality of real estate projects.

Another set of measures for which divergences in prioritisation between the literature-derived and interview-derived findings relates to community impact (Stanitsas *et al.*, 2021; Morgante *et al.*, 2023; Zhang *et al.*, 2024) and employment in local communities (Stanitsas *et al.*, 2021; Morgante *et al.*, 2023; Akomea-Frimpong *et al.*, 2024). While these measures are regularly emphasised in the literature, the interview data did not provide any indication of a comparable level of prioritisation. Unlike the divergence observed in terms of affordability, a noteworthy distinction in this regard concerns the empirical context of the frameworks examined. The studies under review exhibit a closer alignment with the real estate sector than in the previous case: Morgante *et al.* (2023) investigate ESG criteria for real estate investments, Zhang *et al.* (2024) analyse project-level ESG metrics within the construction and planning sector, Akomea-Frimpong *et al.* (2024) examine ESG indicators for the construction industry. Consequently, the argument pertaining to a divergent empirical context can only be applied with limited validity here. Upon closer examination, however, a more fundamental difference becomes apparent that is rooted in the methodological approach and the overarching orientation of the studies analysed. The present study focusses

on the developer perspective, which is reflected in the participation of practitioners from this field in the data collection process. The practitioner perspective, by contrast, receives little to no consideration in the reviewed studies, as these are primarily concerned with the management level or firm-level analysis. The analysed literature therefore tends to discuss social measures at a broad societal level, wherein real estate projects are evaluated predominantly in terms of their contribution to local or community development. Senior practitioners, however, are more likely to conceptualise real estate projects from an operational standpoint (Dixon, 2019; Candel and Törnå, 2022). Moreover, there appears to be a degree of role-related bias. As has become evident at several points in the analysis, project managers are strongly focussed on the output of their projects and therefore seem to prioritise criteria that are directly related to the project itself. Consequently, this perspective may privilege factors closely linked to project success, while aspects such as community impact or employment creation may be less associated with the project-level from the developers' perspective. In this respect, the individual perspective of the interviewed practitioners appears to exert a significant influence (Döringer, 2021). These differences in perspective offer a compelling explanation for why measures more directly associated with the project itself, such as affordability, urban design quality, and related criteria, feature more prominently in the findings of the present study. Against the background of the research question, however, this perspective provides a particularly valuable insight. From the developers' viewpoint, the key ESG measures are those that are closely tied to project characteristics, even though the academic perspective outlined earlier placed a somewhat different emphasis. Thereby this insight aligns closely with the established working definition of ESG measures in real estate development highlighting the project-specific nature.

Despite the to some extent vague understanding of social measures, it can be concluded that the measures identified in the literature review can be applied in varying forms, depending on the characteristics of the project, in German real estate developments. When determining social measures for a project, the primary focus should always be on stakeholder interests. If these are taken into account, social measures can positively contribute to the project's success.

5.2.4 Governance measures

Following the insights of this study, it can be concluded that the preservation of organisational and project value is at the forefront of governance measures (Pivo, 2008; Bauer *et al.*, 2010; Ifediora and Igwenagu, 2024). It was determined that the identified governance measures in the literature are only partially applicable at the project-level (Müller *et al.*, 2025). In light of the research questions of this study, it can be noted that very few governance measures explicitly address the project-level or find application therein. Rather, it can be observed that governance measures implemented at the corporate level have implications for the project. Factors such as dissatisfied employees, ineffective decision-making processes, a lack of transparency, or inadequate documentation at the organisational level are likely to negatively impact the successful execution of a real estate project.

More clearly than with social measures, it can be stated regarding governance measures that there is a significant discrepancy between the importance of measures identified in the research and their application in practice. In **Table 2. 4** a range of five to 12 measures, along with some sub-measures, are presented under management, staff, project management, and product value. Here, too, the categorisation derived from the literature could not be reflected by the primary data. This was due to the very differentiated picture that emerged from the statements on the governance measures. This was more about the fundamental applicability of governance measures, which is why a classification more related to the area of application (project or company) seemed to make sense here as well.

The significance of a few measures, such as business and market ethics, risk management, and life cycle assessment, was confirmed through the comparison with primary data. However, many other measures are discussed in the academic discourse, but the primary data collection could not conclusively support their importance. Examples are measures in relation to the board-level (Xie *et al.*, 2019; Ziolo *et al.*, 2019; Akomea-Frimpong *et al.*, 2024), compensation policy (Ziolo *et al.*, 2019; Kyriakogkonas *et al.*, 2022; Zhang *et al.*, 2024) and staff satisfaction (Ziolo *et al.*, 2019; Park and Jang, 2021; Stanitsas *et al.*, 2021). To explain the differing emphasis placed on individual governance measures in the reviewed literature and the primary data collected, similar explanations can be applied as in the case of the social measures. On the one hand, the related research fields examined may help to understand this divergence, as they tend to focus on different empirical contexts and, in most

cases, on the company-level. On the other hand, particularly in light of the insights already identified regarding the primary application of governance measures at the corporate level, it can be observed that the interviewed practitioners tend to prioritise those governance measures that also have a direct influence on project outcomes. Examples include life cycle assessment, building certifications, and risk management.

Although the preservation of values was identified as a central objective, indicating that project-specific governance measures should align with, it can be noted that the governance measures applied in practice exhibit a substantial discrepancy from the current state of research. A possible explanation for this discrepancy is that only a few of the respondents hold executive positions in their professional roles. At the same time, most of the participants are primarily engaged at the project-level. It is assumed that, precisely because governance measures are more commonly situated at the corporate level, there is less detailed engagement at the project-level with measures such as audit and control systems, organisational culture, or shareholder rights. Although it is argued that governance measures are mostly connected to the executive level of organisations, this observation warrants further investigation in the specific context of real estate projects (Garvey and Swan, 1994; Bauer *et al.*, 2010; Musawir *et al.*, 2020). From a theoretical perspective, these findings on governance measures suggest that governance should not only be understood as separate ESG pillar, but also as an enabling condition for ESG measures integration. While environmental and social measures are often more visible at the project-level, governance measures influence the company-level and thereby the structure of boards (Xie *et al.*, 2019; Ziolo *et al.*, 2019; Akomea-Frimpong *et al.*, 2024), team composition (Park and Jang, 2021; Stanitsas *et al.*, 2021), incentives (Xie *et al.*, 2019; Ziolo *et al.*, 2019; Kyriakogkonas *et al.*, 2022) and shareholder interests (Ziolo *et al.*, 2019; Park and Jang, 2021; Refinitiv, 2022). This is particularly relevant from a stakeholder perspective, as real estate development involves multiple actors with different interests, roles and levels of influence (Caputo, 2013; Martinez and Olander, 2015). For ESG measures integration, this indicates that governance measures support the alignment of project participants and provide organisational foundation for translation ESG objectives to the project-level.

5.3 Research Question 2: Establishing ESG benefits of German real estate projects

This section clearly addresses the second research question of this research project. Since project benefits are closely linked to project success, the findings related to success in German real estate projects will first be presented, followed by a specific examination of the established ESG benefits.

5.3.1 Project success

To answer the research question regarding ESG benefits and pursue the research aim, it is first necessary to define what constitutes project success in the context of German real estate development. The literature review revealed that for many years the core components of project success have been cost, time, and quality (Atkinson, 1999). However, this view has been expanded to include additional factors, such as the satisfaction of internal and external stakeholders. In the context of German real estate projects, this broader understanding of success can be confirmed, although there is a clear emphasis on economic performance. A noticeable disparity in prioritisation was identified in this study, with the economic performance of a project emerging as the primary criterion for evaluating project success. Thus, the findings align with those of Laning (1978), who identified profit maximisation as a key driver of project success, and van der Krabbe (1994), who recognised economic growth as a fundamental factor contributing to project success. Only after this are other factors considered, such as the satisfaction of stakeholder interests, addressed as collateral benefits in the findings (*see Section 4.4.1*). Real estate project's stakeholders primarily include those who live or work in the neighbourhood of the project or who will live or work in the building itself. While incorporating and satisfying the interests of these stakeholders is an essential factor that influences project success, it is secondary to economic considerations.

The gap identified in the literature review – that ESG measures are not yet considered a component for defining project success – can be confirmed by the findings of this study. The success of German real estate projects is not currently evaluated based on whether ESG measures have been implemented. Instead, the results of this study suggest that considering ESG measures can lead to certain benefits, which in turn positively impact project performance. Therefore, in evaluating project success, the relevant question to assess success in an ESG context is not "Which or how many ESG measures were implemented in a

project?" but rather "How successful is the project economically, and which ESG measures have supported or hindered this economic success?" From a theoretical perspective, these findings indicate that ESG integration extends the understanding of project success in real estate development beyond conventional criteria. While these criteria remain important, the findings suggest that project success in ESG oriented real estate projects is increasingly shaped by ESG-related project outcomes. This indicates that ESG measures are relevant not only as additional project requirements, but as factors that can influence how project success is defined and assessed. For ESG measures integration, this means that project success should be understood as a broader concept that connects traditional real estate development objectives with ESG benefits.

The potential hindrance to project success due to rising costs associated with ESG measures is a highly relevant point that was clearly identified both in the literature and in the primary data collected. In the literature, the implementation of sustainability measures is sometimes viewed as a counter-objective to traditional, more economically focussed project objectives (Carvalho and Rabechini, 2017; Sabini *et al.*, 2019). While this strong assessment could not be fully confirmed by the findings of this study, it is clear from the perspective of German real estate developers that the integration of ESG measures in development requires significant investment in terms of capital, time, and resources. Therefore, this can present a challenge. Developers acknowledge that, while ESG measures can bring long-term benefits, their implementation introduces additional layers of complexity and cost, which must be carefully managed to avoid undermining economic viability. This trade-off highlights the balancing act between sustainability goals and the economic priorities of real estate development projects in Germany.

Furthermore, this underscores the fact that different business models place varying emphasis on the evaluation of project success. This study specifically focuses on projects developed under the business model of a trader-developer, where the property is sold upon completion of construction or even before. As a result, potential long-term benefits of ESG measures do not directly, or at best only indirectly, benefit the trader-developer. Evidence could be found that the definition of project success from the developer's perspective differs from that of a long-term investor or owner who may hold the property for many years. The varying view on project success from the trader-developer perspective is a key aspect to be considered

with regard to the research aim. While the heterogeneity of real estate developers is considered in real estate development research and their varying areas of focus are well known (Dong and Sing, 2017; Moorhead *et al.*, 2023), it was, to the best of the researcher's knowledge, established for the first time that the assessment of project success under ESG criteria can vary depending on the business model of the developer. While long-term benefits such as energy efficiency, reduced operational costs, or increased tenant satisfaction might be crucial for a property owner, they are less relevant for a trader-developer whose primary goal is profitability at the point of exit. This does not imply that other factors are unimportant for real estate developers when measuring success, but economic viability is clearly prioritised in this context.

As highlighted in the literature review, a project must be considered holistically, encompassing all development phases up to building operations, to contribute not only to success at the time of exit but also beyond (Fisher and Robson, 2006; Erdem and Ozorhon, 2015; Kothandath, 2018). By taking a comprehensive view that includes long-term considerations, a project can enhance its overall value. This broader perspective ensures that, even after the developer's exit, the project remains attractive, functional, and sustainable, which indirectly supports its marketability and success in the earlier stages of development.

A better marketability can also be reached by an increased flexibility of the project. Only a project that can adapt to market conditions, user behaviour, and demand will continue to attract interest from both users and buyers, which in turn ensures economic viability for the developer. Flexibility, therefore, becomes a critical factor that indirectly supports the financial success of the project, aligning with the developer's short-term objectives while still addressing broader market needs. Particularly with regard to the integration of ESG measures, the flexibility of a project emerges as a crucial component of project success. To the best of the researcher's knowledge, flexibility was not prominently emphasised in classical considerations of project success and its components (Fisher and Robson, 2006; Erdem and Ozorhon, 2015). This represents an important insight into how ESG activities can contribute to success. An example of this is the adaptation of a project to local needs. Taking project flexibility into account during the planning phase can, for instance, enable the conversion of an unused office building into residential units in an area with high housing

demand. This example aligns with meeting housing demands as a factor for project success, as identified by Gruis and Nieboer (2004).

It was remarkable to observe that, in a total of 23 statements, the general market environment was identified as a significant risk to the success of a real estate project. This clear connection could not be identified within the existing literature. The researcher attributes this intense focus on the market environment by participants to the sharp downturn in the German real estate market since 2022. The research is limited to one country, one industry, and only one business model, which has been severely affected by the recession. After many years of growth, numerous projects once considered successful are now at risk. The research participants surveyed were largely directly or indirectly impacted by this market downturn. It is, therefore, not surprising that this market environment also influenced the findings of the study (Döringer, 2021). The central focus of the data collection was on the opinions, experiences, and perceptions of the research participants. Since the participants, in their professional roles as senior practitioners in the German real estate sector, were confronted daily with the challenges posed by this environment, this explains their strong emphasis on the market context when evaluating project success. As a result, the original definition of project success was essentially turned on its head. In light of ESG considerations, it becomes even more critical that projects not only implement ESG measures but also function effectively in practice. Therefore, it seems all the more interesting to discuss, in the further course of this study, which ESG measures are associated with corresponding benefits.

5.3.2 Tangible ESG benefits

Both in the analysis of the literature on ESG benefits and in the interviews with industry experts, it was found that tangible benefits are given significantly higher priority than intangible benefits. In the working definition of ESG benefits in real estate projects, it was established that ESG benefits represent positive outcomes and advantages for project success resulting from the incorporation of ESG measures. These advantages or positive outcomes are primarily associated with financial performance in both practice and literature (Miller *et al.*, 2008; Eichholtz *et al.*, 2010, 2013; Wiley *et al.*, 2010). The senior practitioners directly linked the marketability of a project to ESG benefits. However, it was also noted that the literature provides a broader differentiation, including aspects such as building quality (Robinson and McIntosh, 2022; USGBC, 2022), reduced costs (Schieg, 2009; Henisz *et al.*,

2019), risk mitigation (Lützkendorf and Lorenz, 2005), or better funding and insurance rates (Lapinski *et al.*, 2006; Selch, 2021). These aspects were only sporadically mentioned in the interviews, if at all. In general, the literature review reveals significantly more benefits associated with ESG than appear to be known or considered relevant in practice. Moreover, for many of these benefits, no clear connection to ESG measures could be established. This once again points to the fundamental complexity and ambiguity of the entire subject area. There seems to be no clear consensus on what exactly constitutes an ESG measure, nor on which benefits can be directly attributed to it. Representative examples are tendering process (Refinitiv, 2022; DGNB, 2023; GRESB, 2023), contractor relations and satisfaction (Park and Jang, 2021; Stanitsas *et al.*, 2021; Kyriakogkonas *et al.*, 2022) board structure (Xie *et al.*, 2019; Ziolo *et al.*, 2019; Kyriakogkonas *et al.*, 2022). While these measures play a role in academic discussions, practitioners were often unaware that they can even be classified as ESG measures. As a result, the potential benefits associated with their implementation – such as increased bidder entries, lower procurement costs (Coviello and Mariniello, 2014), increased satisfaction with effect on project performance (Masrom *et al.*, 2013) or board independence and increased innovation (Prashar and Gupta, 2021; Makkonen, 2022; Huang *et al.*, 2023) – are not recognised or realised as ESG benefits in practice.

The clear focus of the interview participants was on the market value of the project, which could be enhanced through ESG measures by, for example, reducing vacancies or increasing the sale price. Accordingly, it can be concluded that both the literature review and the empirical data indicate a strong alignment in recognising financial performance as the dominant factor in the assessment of ESG-related benefits.

But the adoption of ESG measures cannot only be reasoned with the achievement of certain benefits. Certain ESG measures that are neither legally required nor relevant for EU Taxonomy alignment, may still be implemented because project actors operate within an institutional environment in which legitimacy, visibility, and professional expectations matter. From an institutional theory perspective, this can be explained primarily through mimetic pressure: under conditions of uncertainty, a situation that clearly emerges from a close examination of the current state of ESG in real estate development, firms tend to imitate practices that are already perceived as credible, progressive, and publicly valued within the market. At the same time, normative pressure may also play a role, as sustainability-oriented

design features are often promoted through industry discourse and the expectations of stakeholders as appropriate elements of contemporary development practice (Nyoni *et al.*, 2023). In this sense, certain ESG measures are adopted not because they are formally prescribed or lead to certain tangible benefits but because they are seen as desirable, legitimate, and increasingly standard within the field. Examples that could be found in the empirical data are certain intangible social or governance measures but also circular economy-oriented measures such as timber construction or cradle-to-cradle design. In this regard circular economy can be viewed as follows: Although circular economy is increasingly prominent in policy and academic discourse, it is not yet mandatory in many real estate development decisions. Moreover, the data showed that it is did not perceived as generating sufficiently tangible benefits for the success of a real estate project from the developers perspective. This reflects the implementation gap described by Ambituuni *et al.* (2025) who highlight the tension between the temporary, goal-specific nature of projects and the systemic, long-term transformation required for circular economy. As a result, such measures may be acknowledged as environmentally important but remain secondary when they do not directly support marketability, cost efficiency, planning certainty, or other immediate project-level objectives.

5.3.3 Intangible ESG benefits

While it could be established that the literature discusses significantly more tangible ESG benefits than are perceived to be relevant in the context of real estate development, interestingly, a different picture emerges with regard to intangible ESG benefits. While the literature only sporadically mentions intangible benefits such as employee satisfaction, positive stakeholder attributions, or image advantages (Henisz *et al.*, 2019; Dounghanee *et al.*, 2024) – and these are often discussed in the context of sustainable buildings or corporate social responsibility – the specific connection between intangible ESG benefits and real estate development has been only minimally explored in the literature. However, in practice, this aspect appears to be significantly more relevant. This discrepancy highlights a gap between academic research and practitioner priorities, suggesting that intangible benefits, despite their lesser representation in scholarly discussions, play a more prominent role in the considerations and decision-making processes of practitioners in the real estate sector.

In particular, the positive effect of ESG measures within a project on both the perception of the project itself and of the organisation as a whole is strongly emphasised by the practitioners. This suggests that ESG initiatives can be seen as a strategic means of improving the broader reputation and stakeholder trust in the organisation. This dual impact underscores the importance practitioners place on integrating ESG considerations into their projects and organisational strategies. However, in this context, it is also important to acknowledge the close link between the positive attributes of marketing effects – such as improved reputation – and more critical aspects like greenwashing. This point, frequently raised in discussions with practitioners, also features prominently in the academic discourse. Schramade (2016), for instance, argues in the context of sustainable investments that the focus is often more on achieving marketing success than on genuine application success. Therefore, when it comes to realising intangible benefits, the emphasis should lie on the actual implementation of ESG measures that deliver measurable project outcomes, rather than on merely striving for reputational effects.

Remarkably, the frequently mentioned benefit of contribution to sustainability by the interview participants is not semantically described as an ESG benefit in the literature. Instead, it is presented as a fundamental motivation or reason for the market's engagement with ESG. This discrepancy reveals an interesting insight: the interview participants identified an additional ESG benefit that is not explicitly captured in the literature. A possible reason for this could lie in the fundamental attitude of the respondents towards the topic of ESG. Particularly in Theme 1, the perceptions and convictions of the participants were analysed and outlined. It was observed that, despite differences in generations and job profiles, there is a shared conviction about the importance of implementing ESG measures in projects. As detailed extensively in this study, quantitative research approaches dominate ESG-related studies in the real estate sector (Guy and Henneberry, 2000; Levy, 2006; Newell, 2023a). It is argued that the current research on ESG lacks empirical foundation and neglects practitioner perspectives (Lokuwaduge and Heenetigala, 2017). Newell (2023) argued for the increased use of qualitative research methods, such as practitioner interviews, in real estate research to generate richer and deeper insights. Since this study adopted exactly such an approach, it may explain why an ESG benefit was identified that appears highly significant to the surveyed senior practitioners but has so far received little attention in the literature. This qualitative focus allowed the research to uncover a nuanced perspective,

revealing benefits aligned with practitioners' real-world priorities and motivations, which might otherwise remain unexplored in predominantly quantitative analyses.

However, this supposedly newly identified benefit also stands, to some extent, in contrast to the other benefits, particularly the tangible ones. For those, the importance of the link to economic success was emphasised, whereas for the benefit of contribution to sustainability such a direct connection cannot be established. If at all, it can only be made indirectly, through the positive perception that may come with increased contributions to sustainability. It could be argued that this apparent contradiction also stems from the deeper convictions of the research participants as well as from the economic constraints of profit-oriented real estate companies (*see Sections 4.2.2 and 4.4.1*). A further exploration of this presumed relationship was not undertaken within the scope of this study.

5.4 Research Question 3: Effective ESG measures integration

Finally, this section discusses ESG measures integration and thereby addresses the third research question of this thesis. The framework's development and verification will be based on the results of this chapter and will be presented in *Chapter 6*. The literature review already identified themes related to ESG integration factors, business model integration, and the associated challenges. Building on this, the analysis of the interview findings revealed not only further challenges, but, more importantly, ESG integration factors at the project, company, and external levels. With regard to the achievement of ESG measures integration, the themes derived from both the literature and the empirical findings are now discussed.

5.4.1 ESG integration challenges

With regard to the third research question, which addresses the effective integration of ESG measures into the real estate development process, it is useful to first discuss the insights gained on the factors that challenge ESG integration. Only once a clear understanding of the current integration challenges has been established can a more in-depth analysis of the integration factors begin, ultimately leading to the development of an ESG measures integration framework.

5.4.1.1 Sustainability as counter-objectives in real estate projects

The literature review demonstrated that there are numerous reasons why the consideration of ESG measures in real estate projects appears both relevant and beneficial. At the same time, it also became evident that sustainability can be perceived as a counter-objective to the traditional objectives of a project (Marcelino-Sádaba *et al.*, 2015; Carvalho and Rabechini, 2017). In particular, the high costs associated with sustainability are frequently described as a burden on the integration of ESG measures (Lapinski *et al.*, 2006; Walker and Brammer, 2009; Ochieng *et al.*, 2014). This finding was also confirmed in the interview data analysed in this study. Overall, it can be concluded that the consideration of ESG measures across all three pillars may be associated with increased costs. These costs may arise from greater administrative effort, for example through additional documentation and processes; reduced profitability, for instance through lower-cost rental strategies; and higher material expenditure, such as through additional technologies or building insulation. Although the data also contained some indications that higher upfront costs can, at least in part, be offset by long-term benefits such as reduced operational costs, the trader-developer business model must be taken into account here. For developers operating under this model to benefit from such long-term advantages, the sales value of the completed projects would need to increase.

Although the consideration of ESG aspects is clearly linked to the marketability of a real estate project, as established in **Section 5.3.1**, no evidence was found as to whether this translates into an additional value-enhancing effect in the form of a green premium, or whether ESG has instead become a new market standard, such that the failure to incorporate ESG measures results in value reduction in the form of a brown discount. In this regard, the inconsistent assessments found in the empirical material differ from findings in the literature, which frequently point to enhanced profitability (Chiang *et al.*, 2018; Warren-Myers, 2020; Hsieh *et al.*, 2020). While the findings of this study indicate clear tangible ESG-related benefits associated with the integration of ESG measures, they do not establish a direct connection between these benefits and the increased costs involved. Consequently, the explanatory power of the data on this point remains limited. When viewed through the lens of the trader-developer model, participation in long-term benefits would only be possible through the achievement of a green premium. Otherwise, the additional expenditures would be borne by the developer without generating direct financial benefits. Against this background, it is understandable that the data revealed a particularly strong focus on the additional burdens associated with ESG integration. From a theoretical perspective, the

findings indicate that ESG measures integration is shaped by tensions between ESG-related objectives and established project constraints. In particular, cost, time and quality may conflict with ESG objectives. This can be interpreted through paradox theory, as ESG integration does not simply require the project manager to align project and ESG objectives, but the management of competing demands. For ESG measures integration, this suggests that these challenges should not only be understood as practical barriers, but also as tensions that need to be addressed throughout the entire development process.

5.4.1.2 ESG complexity in real estate development

The analysis of the primary data collected in this study revealed that ESG is not a consolidated concept that can be easily understood or applied to business models. Instead, it requires familiarity with measures across the environmental, social, and governance domains, as well as the ability to identify and implement those measures that are most relevant to the specific project. A key finding of this research is that, while the complexity of ESG is described in the literature and the measures are outlined, there is still relatively little practical knowledge in the field. Therefore, it appears appropriate in this section to relate the codes identified in the data analysis on *complexity and ambiguity* to the *lack of knowledge*, and to discuss them in light of the insights gained from the literature review.

The insight from the literature review that, despite significant attention in both practical applications and scholarly research (Brownill *et al.*, 2013; Shirazi and Keivani, 2019), comprehensive ESG integration has yet to occur (Nosratabadi *et al.*, 2019) is confirmed by the findings of this study. It became evident that there is no consensus among the interview participants regarding what ESG encompasses, which measures are deemed important, or how these measures contribute to achieving ESG benefits. It is not surprising that a unified understanding is lacking, given that, as established in the literature review, such consensus is also absent in academic discourse, and ESG was introduced without a standardised definition. What is more surprising, however, is that pressure from financial and investment markets and regulatory frameworks has not yet led to a more consistent understanding within the German development sector of which measures are critical for projects and how these measures can be implemented. An explanatory approach for this phenomenon can likely be found in the fragmented nature of the real estate development market in Germany. This fragmentation may hinder the development of comprehensive ESG understanding among

market participants. This view is also common in the academic debate as Daugaard (2020) identified market heterogeneity as one of the primary challenges in ESG research. With the exception of environmental measures, where a relatively clear prioritisation emerged that aligns with existing ESG research, no consistent understanding was found across the other areas.

Therefore, in light of the research questions it is essential to engage with ESG and understand which measures are relevant across the three domains. It is equally important to recognise that ESG is not a consolidated concept but rather a modular framework consisting of numerous individual measures with varying levels of relevance. These individual measures must be tailored to the specific context of the company and the individual project. Here, too, an alignment with current research could be identified, as Kothandath (2018) argued that project success criteria should be tailored to specific characteristics of the project. It should also be noted that not every measure directly correlates with corresponding ESG benefits. Instead, ESG benefits can vary depending on the business model, the characteristics of the company, and the unique attributes of the project.

Considering the complexity of the ESG field, it can be concluded that the focus should not necessarily be on mastering all aspects associated with ESG – such as its origins, definitional boundaries and differences, areas of application, measures, mechanisms of impact, and intended benefits. Instead, understanding the complexity of ESG involves recognising the vastness of the topic and identifying what is impactful and relevant for the practitioners within the context of a specific project in a specific company. In this context, Drempetic *et al.*'s (2020) emphasis on a company's capacity is of particular importance. According to their research, firm size and the availability of company resources play a crucial role in the effective implementation of ESG measures. Consequently, the application of ESG measures must not be overly complex to enable organisations of all sizes to consider ESG aspects in their projects. An individualised framework should stand out through its simplicity and practical applicability rather than attempting to encapsulate the entire complexity of the ESG field.

At first glance, the findings of this study seem to contrast with Cappucci's (2018) concept of the "ESG Integration Paradox", which posits that only those who fully adopt ESG can

achieve the greatest benefits. This paradox, identified within the field of investment management, cannot be fully confirmed by the findings of this study. Instead, the focus here lies on identifying and effectively integrating the ESG measures most relevant to the specific project. A key insight of this study is that it is more beneficial to implement a few carefully tailored and effective measures than to attempt to integrate too many. Upon closer examination, however, parallels between Cappucci's (2018) claims and the findings of this study can be identified. Both perspectives emphasise that the goal is not to implement the entire catalogue of ESG measures but rather to embed ESG considerations throughout the process. In Cappucci's (2018) work, ESG considerations involve data quality, measurement standards, and alignment with ESG benefits. Similarly, this study highlights the importance of addressing ESG considerations early in the project life cycle and aligning them with project objectives.

If full integration is understood not as the comprehensive adoption of all possible ESG measures but rather as the consistent incorporation of ESG considerations throughout the entire process, then the findings from investment management research align with those of this study in real estate development. Both emphasise the importance of a process-oriented approach to ESG, where relevance and effectiveness take precedence over quantity. This approach ensures that ESG integration is both effective and accessible for practitioners, aligning closely with their needs and the demands of their projects. The questions already raised in *Section 2.2.5* regarding the meaningfulness and feasibility of a holistic or full integration of ESG can thus be considered through a different lens, which is complemented by the insights provided by Cappucci (2018).

5.4.1.3 Project and organisational heterogeneity

In the previous sections of this chapter, it has already been discussed how important it is to understand the complexity of ESG and that an organisational-level ESG strategy is necessary to implement ESG measures at the project-level effectively. Closely linked to these insights is the recognition that, particularly in this highly complex field, a one-size-fits-all approach to implementing ESG measures in real estate projects is not feasible. This study consistently emphasised the importance of accounting for heterogeneity – both in the companies operating in the market and in the projects themselves – when applying ESG measures. The interviews revealed that, despite all participants being active in the German real estate

development sector, they approached ESG in real estate development from diverse perspectives. Practitioners working for publicly listed investment companies had different priorities compared to those employed at medium-sized development or consultancy firms. This demonstrates that the characteristics of a company influence which ESG measures should and can be effectively implemented. The need for flexibility in the application of ESG measures becomes even more evident when focusing on the project-level. The heterogeneity of projects, including their locations, asset classes, and other characteristics, necessitates the adoption of varied ESG measures. For example, providing affordable housing may be a relevant ESG measure for a residential project but is legally infeasible in an industrial area. This example highlights the importance of tailoring ESG measures to the specific characteristics of a real estate project to achieve tangible benefits.

To the best of the researcher's knowledge, the significance of considering heterogeneity when applying ESG measures is an insight that has not yet been fully addressed in existing research. While Daugaard (2020) mentions the heterogeneity of ESG and the diverse forms of ESG investors as a major challenge for future research, and Morri *et al.* (2024) identified unique aspects of the real estate industry that influenced their study on the ESG performance of real estate entities, this topic has not been explored in detail. Tufinio *et al.* (2013) mentioned the differences of corporate structures and their effect on sustainability considerations without explicitly focusing on ESG measures integration. A possible explanation for this gap could lie in the specific focus of this study. By explicitly examining the project-level, the differences become more apparent in a detailed analysis. It is plausible to conclude that a broader perspective yields findings less dependent on individual projects' specifics. In this research, which is based on senior practitioners' experiences, opinions, and perceptions, it became clear that a broad perspective is ineffective for the realities of project work. Instead, a more detailed view of project-specific differences is required. This detailed perspective allows for identifying and considering unique project characteristics, which is essential for tailoring ESG measures to fit the specific context of each development. The complexity and variability of real estate projects demand a nuanced approach, as a generalised framework may overlook critical aspects necessary for practical implementation and success at the project-level.

5.4.2 ESG integration factors on company-level

The analysis of collected data revealed that the project-level cannot be analysed without taking the company-level into consideration. Therefore, this section discusses ESG integration factors relevant at the company-level. After this, the project-level ESG integration factors will be discussed.

5.4.2.1 *Providing an ESG strategy*

The availability of an ESG strategy is a critical factor in successfully integrating ESG measures at the project-level, as could be identified in the literature (Ziolo *et al.*, 2019; Stanitsas *et al.*, 2021; Kyriakogkonas *et al.*, 2022) and in the primary data. Based on the findings of this study, it is essential to distinguish between the company and project-levels. The interviews conducted with industry experts clearly demonstrated that the availability of an ESG strategy at the company-level is a key determinant for the effective implementation of ESG measures at the project-level. Only when the company-level establishes a clear approach to ESG measures can these be operationalised in practice. This insight aligns with the findings from the literature review. Scholars such as Baumann and Müller (2021) advocate for translating and cascading an overarching sustainability strategy to the project-level. Similarly, Kim and Chang (2022) emphasise the importance of transferring overarching management perspectives regarding ESG to the project-level. In this sense, the findings of this study are consistent with the conclusions drawn in the reviewed literature. While existing research predominantly focuses on the corporate level, leaving the project-level largely unaddressed (Kim and Chang, 2022), the analysis of the interview data revealed a more nuanced picture. The statement by Kim and Chang cannot be fully supported, as ESG measures at the project-level clearly do play a role. The current implementation and importance of ESG measures in German real estate projects were clearly identified. However, where there is alignment with Kim and Chang's (2022) findings is in the absence of a comprehensive approach at the project-level. This study has shown that a holistic and strategic approach has not yet been developed, though it is urgently needed by the industry and individual companies. Knowledge remains highly fragmented, particularly in relation to measures that extend beyond the environmental scope. The general distinction between the project-level and organisational level, as often made in the research (Kyriakogkonas *et al.*, 2022; Akomea-Frimpong *et al.*, 2024; Zhang *et al.*, 2024), appears to be valid. It was found that the measures deemed important at the organisational level differ significantly from those

considered successful at the project-level, even though the overall objectives of these measures are the same.

Another alignment between the findings from the literature review and those derived from the collected primary data can be observed in the research by Crace and Gehmann (2023), who recommend first making ESG indicators salient before incorporating them. This recommendation is particularly relevant at the project-level and is strongly supported by the findings of this study. A key insight of this research is that the individual ESG measurements relevant to a project must be identified very early in the process. Although Crace and Gehmann (2023) make their statements in the context of the quantitative measurement of ESG performance, parallels can be drawn with the findings of this study. Their reference to the socially constructed nature of ESG and contentious issues highlights the importance of an individualised ESG strategy tailored to the stakeholders of a specific company. This characteristic of ESG underscores the necessity of adapting the ESG strategy to the unique context of each organisation. Only when such a strategy is in place can the effective integration of ESG measures at the project-level be achieved.

In connection with the organisational ESG strategy, one point that was repeatedly emphasised by the research participants and is directly linked to ESG measures and ESG-related project success must be mentioned. In the analysis of interview data, a general critique emerged concerning the trader-developer business model, which, to the best of the researcher's knowledge, has not yet been comprehensively addressed in the literature. The short-term horizon of project developers – whose business model spans from land acquisition to the sale of the building, often even before completion – is why ESG criteria are not fully integrated. It was discovered that developers tend to prioritise short-term and visible objectives, while long-term objectives, particularly those related to building operations, are treated as secondary. This creates a critical disconnect within the project life cycle, negatively impacting the success of ESG measures. While the academic debate about how far the project development process should extend into the project life cycle continues, practical experiences highlight that this disconnect is clearly noticeable. In theory, ESG research is approached from various perspectives, such as project management, building operations, or investment. However, there seems to be insufficient research focusing on the critical junctures between these areas of study. The call of Marcelino-Sádaba *et al.* (2015)

for more research into project processes, with a particular focus on the entire project life cycle, can only be reinforced by the findings of this research. This study primarily focuses on examining how ESG measures can be optimally integrated into the existing business model. However, it also allows for the conclusion that other business models, such as that of investor-developers, may enable a more effective or at least different approach to ESG measures. This is because their business model extends to the holding period of the assets, allowing them to benefit from ESG advantages that become evident during this time. However, further research would be required to substantiate this conclusion, focusing on the different ESG integration concepts across various business models.

5.4.2.2 Building an ESG-driven organisational culture

As a further critical factor for the effective integration of ESG measures, it can be concluded that an ESG-driven organisational culture is essential. Without the recognition of the importance of implementing ESG measures and a corresponding conviction within the organisation, it seems unlikely that ESG measures can be integrated into projects in a way that positively impacts project success. Throughout this study, the complexity of ESG and the importance of implementing project-specific measures rather than adopting a half-hearted approach were repeatedly emphasised. The challenges associated with ESG are too extensive to allow for superficial efforts. Therefore, a key insight of this study is that both the organisation and its employees must embrace an ESG mindset. According to findings of this study, this mindset should ideally be supported by the management level of the organisation. Only through such leadership can effective ESG integration be achieved. The organisational culture – comprising norms, values, conventions, and beliefs – must reflect ESG principles. Although Kyriakogkonas *et al.* (2022) highlight the project manager's role as a leader in shaping corporate culture, and Stanitsas *et al.* (2021) refer to an organisational prism concerning the natural and social environment, including values and modes of interaction related to sustainability, existing research has not yet sufficiently examined the importance of an ESG mindset for the effective integration of ESG measures in real estate development projects.

While Silvius and Schipper (2014) argue that incorporating sustainability into project management requires a mindset shift, with project managers assuming responsibility for sustainable development within organisations and society, their research focuses more

broadly on project management and sustainability rather than ESG in real estate development. Similarly, Omamode *et al.* (2024) highlight the evolving role of project managers in embedding sustainability dimensions and emphasise the need to adopt a new perspective on project management tasks. Deden *et al.* (2018) further emphasise the critical role of project teams in enabling sustainable real estate investments. This aspect is also reflected in the ESG frameworks reviewed, which identify the availability of skilled project teams as a relevant condition for ESG integration (Stanitsas *et al.*, 2021; Zhang *et al.*, 2024). In the interview data collected for this study, however, this issue appeared to be of comparatively limited importance, as it was not discussed in greater depth by the participants. Similarly, the coordination of external stakeholder groups, which Gunduz and Almuajebh (2020) and Ferreira *et al.* (2024) describes as an important aspect of ESG measures integration, was not clearly reflected in the primary data. The important role of stakeholder coordination in relation to ESG integration was already identified in the literature review. In particular, the application of stakeholder theory showed that the different stakeholders involved in real estate development may have diverging interests, which can lead to conflicts in relation to ESG integration. Although this aspect played a subordinate role in the fieldwork, it appears to be theoretically and conceptually relevant, as the different interests of the stakeholders involved in real estate development need to be coordinated. While it may be difficult to fully align these interests, the findings on organisational culture and mindset suggest that a substantial degree of shared understanding among the involved stakeholders is at least necessary. This appears particularly important where ESG integration depends not only on formal requirements or technical measures, but also on the willingness of different actors to support common objectives and coordinate their actions across the development process.

Sabini *et al.* (2019) argue that sustainability is a value-based concept, and that the values held by practitioners are influential in achieving sustainability at the project-level. Although their research focuses on sustainable projects and takes less account of the perspective of real estate developers, a connection can nevertheless be drawn between practitioners' values and the necessity for an appropriate mindset among project participants. This also reinforces the research approach chosen in this study and highlights the relevance of involving practitioners in research situated at the intersection of real estate development and ESG. However, the detailed insight that effective ESG integration requires both an ESG-oriented mindset and an organisational culture aligned with ESG considerations has not been

addressed in existing research. This study fills that gap by emphasising that, without such cultural and mindset alignment, the implementation of ESG measures is unlikely to achieve its intended impact.

Furthermore, the findings indicated that a top-down approach plays a crucial role in the context of ESG integration, particularly in fostering organisation-wide acceptance and enabling the effective implementation of ESG considerations. While this perspective was emphasised as essential during the fieldwork, it is noteworthy that the academic literature – especially in the context of organisational culture often adopts a more critical stance towards top-down approaches. For instance, Heyden *et al.* (2016) argue that changes to organisational culture initiated exclusively by top management do not result in greater employee support. A possible explanation for this discrepancy in assessing the effectiveness of top-down approaches may lie in the perceptions of the interviewees themselves. Given their daily involvement with ESG matters, many expressed a desire for stronger managerial support in implementing ESG measures, potentially shaping their favourable view of top-down leadership. In this context, the additional insights from Heyden *et al.* (2016) are particularly relevant: their research highlights that organisational change led by middle management, but supported by top management, is more likely to yield positive outcomes.

5.4.2.3 Building organisational capacity

It has already been discussed extensively that ESG is not only complex but also associated with increased costs. Against this background, the issue of capacity is particularly important to consider. The empirical data of this study indicate that effective ESG integration requires not only an ESG strategy and the corresponding mindset, but also the availability of certain capacities. The interview data suggest that these capacities extend beyond financial resources and also include time and personnel. The literature likewise indicates that ESG integration in real estate is fundamentally a question of capacity, as developers require sufficient resources to implement ESG measures effectively. Although the literature frequently foregrounds capacity in relation to the higher upfront costs (Ahn *et al.*, 2013; Darko *et al.*, 2017) as already discussed in **Section 5.4.1.1**, there are also indications that capacity may also refer to personnel resources, capabilities, and expertise (Zhang *et al.*, 2011; Shen *et al.*, 2017; van der Leer *et al.*, 2026). In addition, the need to account for potentially more complex planning processes and the greater time requirements associated

with ESG measures integration is occasionally addressed in the literature, particularly in the context of sustainable construction and green building technologies (Zhang *et al.*, 2011; Shen *et al.*, 2017; van der Leer *et al.*, 2026). Accordingly, these findings can most directly be substantiated for environmental measures. However, the data collected in this study suggest that they may also hold explanatory value across all three ESG pillars. If this is to be conceptualised as an ESG integration factor, it implies that the necessary capacity must already be made available at the company-level and that firms must actively assess which additional capacity requirements may arise through the integration of ESG measures.

5.4.3 ESG integration factors on project-level

Now that the ESG integration factors at company-level have been discussed, the ESG integration factors at the project-level will be discussed.

5.4.3.1 Ensuring tangible ESG impacts

The literature review showed that project success is often associated with financial performance. At the same time, other traditional determinants of project success—most notably cost, time, and quality—are likewise regarded as central. What these fundamental determinants of project success share is their predominantly quantitative nature and their comparatively high degree of measurability. The literature review also highlighted that the measurability of ESG measures is an important prerequisite for their effective integration (Jonsdottir *et al.*, 2022; Bezerra *et al.*, 2024; Shahid *et al.*, 2024). The interview data support this finding as it was found that consistent and, in particular, comparable performance indicators are essential for effective ESG integration. However, since a considerable number of ESG measures, especially within the social dimension, are of a more qualitative nature, the importance of measurability becomes a critical issue in the context of effective ESG integration. Examples include user well-being, perceived safety, and tenant mix. Although approaches to making social criteria measurable exist (Yu *et al.*, 2017; Homagk *et al.*, 2023) the findings of this study suggest that the objective measurability of ESG measures is of central importance for their integration. In particular, it was found that measurability is essential for the evaluation and assessment of predefined goals. Although it was established that ESG measures can be both qualitative and quantitative (D’Apolito and Iannuzzi, 2017; Li *et al.*, 2021), their practical implementation and perceived relevance appear to place particular emphasis on tangibility and measurability. This is especially important in the

context of ESG integration. Accordingly, quantitative measures appear to be easier to integrate than qualitative ones.

5.4.3.2 Prioritising ESG in initial project phases

The early consideration of ESG measures is arguably the most prominent aspect described in the reviewed literature and the collected primary data. According to current research, this goes beyond merely selecting specific project sustainability criteria. Instead, it requires equal attention to natural resources, the environment, and stakeholders (Yan *et al.*, 2018). Additionally, the successful implementation of ESG measures demands that they be aligned with the project objectives (Rivière *et al.*, 2013). Clear parallels between these findings and the primary data collected were identified. The research participants emphasised that setting project goals at the outset is critical to project success. These goals must extend beyond purely financial metrics to incorporate stakeholders' needs and environmental objectives, considering the entire project life cycle rather than limiting ESG integration to the development or construction phase. Among the senior practitioners interviewed, there was no consensus on the optimal timing for considering ESG measures. While some advocated for early planning stages, others suggested the acquisition phase. Similar arguments are found in the literature. For example, Auer (2022) argues that ESG considerations should be incorporated as early as the land selection process. Mavi *et al.* (2021) highlight the importance of integrating ESG during design and feasibility studies, stressing that ESG must be considered throughout the project life cycle. In any case, the primary data and the literature review strongly indicate that ESG measures should be considered as early as possible in the project process. When further statements from the primary data are taken into account, particularly those addressing the necessity of an ESG strategy at the organisational level, it becomes evident that companies must engage with ESG measures even before a project is initiated. This is especially true for measures like redevelopment or reuse of existing assets, which cannot be implemented in already identified projects or properties. Considering all the collected data, the conclusion can be drawn that the foundations for ESG strategies at the project-level are established through the company-level ESG strategy. Only by integrating ESG considerations into the acquisition phase can ESG measures be comprehensively implemented. The most critical phases for a project itself appear to be the project initiation and conceptualisation phases, where the project is designed. A retrospective integration of ESG measures at later stages would require significant additional effort or, as

Satankar and Jain (2015) argue, may even become impossible to achieve. This underscores the importance of embedding ESG strategies at the earliest stages to ensure effective and sustainable project development.

5.4.3.3 Considering the dynamics of the development process for ESG integration

Already in Healey's (1991) work, it was argued that the real estate development process can be understood most effectively when it is conceptualised and mapped as a process. As shown in **Section 2.1.5.1**, the individual process stages differ substantially in their characteristics, logics, and requirements. From an ESG integration perspective, this implies that the specific objectives and demands of each development stage need to be taken into account rather than assuming a uniform approach across the entire process (Guy & Henneberry, 2000). The literature likewise provides several arguments in favour of mapping the development process explicitly (Healey, 1992; Fisher, 2005). The analysis of the interview data further confirmed that making the development process visible and comprehensible is regarded as essential by practitioners. Against this background, it is all the more remarkable that a process-centric focus has so far received only limited scholarly attention (Newell and Steglick, 2006; Geva and Rosen, 2018; Meijer and Buitelaar, 2023).

Given the complexity of the development process, it appears particularly important to examine the process in its individual components and interrelations in order to integrate ESG measures as effectively as possible. Based on the findings of this study, approaches that focus only on isolated parts of the process appear to be of limited usefulness. Instead, real estate development should be understood as end-to-end value creation that extends beyond a narrow perspective on e.g. project management (Roulac *et al.*, 2006; Gehner and Peek, 2009; Bulloch and Sullivan, 2010). This also implies that ESG integration must be embedded stage by stage, rather than being addressed in a generic or undifferentiated manner.

As already elaborated in the presentation of the findings on project-level integration factors (*see Section 4.5.3*), it is not sufficient to merely decompose the development process into its individual components and make it visible. The insights of this study make particularly clear that a certain degree of flexibility must also be preserved. It is indicated that flexibility is highly important for ESG integration, as it enables actors to respond to changing conditions and emerging realities within the project context. Olsson *et al.* (2015) had already pointed

to the important role of flexibility in real estate development more broadly. Based on the results of this study, this insight can now also be extended to the context of ESG integration.

What was emphasised even more strongly in the interviews, but could only be identified to a limited extent in the literature review, is the importance of a certain degree of simplicity as a factor for ESG integration. While Backes and Traverso (2021) as well as Hollberg *et al.* (2022) argue for simple and user-friendly tools in the context of life-cycle assessments, and Bragança *et al.* (2010) likewise stress the importance of simplicity in a related context, no clear literature-derived theme could be established that explicitly highlights simplicity as a key factor in ESG integration within real estate development. For the practitioners included in this study, however, this factor appears to be highly relevant. One possible explanation for this divergence is the current focus of ESG literature. The literature review showed that the dominant scope of ESG research remains largely at the corporate level (Kyriakogkonas *et al.*, 2022), where financial performance measurement (Cajias *et al.*, 2014; Zhao *et al.*, 2018; Bătae *et al.*, 2020) and portfolio performance (Zheng and Lee, 2025; Hayar *et al.*, 2025) appear to receive greater attention. By contrast, the operationalisation of ESG at the project-level appears to remain limited (Keeris and Langbroek, 2019; Kim and Chang, 2022; Zhang *et al.*, 2024), and interaction with real estate developers is likewise limited (Drane, 2012). Against this background, it seems plausible to explain the discrepancy between the empirical data and the findings from the literature review through a research–practice gap (Rynes *et al.*, 2001; Bansal *et al.*, 2012). It is well established that findings from research on the real estate industry often differ considerably from insights emerging from practice (Hall *et al.*, 2016; Criado-Perez *et al.*, 2020). This also appears to be the case here and further reinforces the argument that developer nature, developer operations, and, more broadly, the business-operational perspective of development remain under-researched (Bushnell and McAllister, 2012; Meijer and Buitelaar, 2023). For the ESG integration framework developed in this study, this finding implies that a certain degree of simplicity is necessary if practical applicability is to be achieved, even if this aspect appears to play only a subordinate role in the existing literature.

Finally, at the project-level, the importance of iteration within the real estate development process was also identified as a key factor. Just as Peiser and Frej (2008) and Olsson *et al.* (2015) place iteration at the centre of their view of the development process, and Bulloch

and Sullivan (2010) likewise emphasise the importance of repeatedly revisiting the process, reworking the design, and proceeding iteratively, the findings of this study also underline the significance of iteration in the context of ESG integration. In this respect, ESG integration should not be understood as a one-off intervention, but rather as an iterative process that requires continuous review, adjustment, and refinement throughout the course of development.

5.4.4 External factors

The recurring references to external factors in the data, extending well beyond the level of the individual real estate project or the company-level of the real estate developer, indicate that practitioners have a strong awareness of the close interdependencies between external conditions such as national and international legislation, funding schemes, and the overall economic environment. In this regard, the findings of the literature review, which emphasise regulatory and market pressure to adapt ESG considerations (Xie *et al.*, 2019; Aldowaish *et al.*, 2022), can be clearly confirmed. Similar to findings in the literature, some practitioners even equated ESG with the EU Taxonomy (Buchetti *et al.*, 2022; Sipiczki, 2022), thereby further illustrating the perceived closeness of this relationship. However, based on the findings of this study, such an equation does not do justice to the broader and more holistic nature of ESG and its modes of impact as was extensively discussed. Given the scope of the study and its research aims, a more in-depth analysis of external factors would go beyond the boundaries of this doctoral thesis. Accordingly, no concrete ESG integration factors can be derived from these insights. What can be concluded, however, is that dynamics in the economy, legislation, and funding conditions exert a substantial influence on the project-level and may therefore also shape ESG integration.

A further aspect that is more appropriately assigned to the external level, and which also lies outside the scope of this study, concerns the ongoing discussion surrounding the trader-developer business model in general. As already derived from the literature, the trader-developer's business model, with its strong focus on project completion and exit, stands in tension with longer-term perspectives such as life-cycle assessment (Ershadi and Goodarzi, 2021; Ferreira *et al.*, 2024; van der Leer *et al.*, 2026). Since this study explicitly focuses on the trader-developer business model, this insight is not explored in greater depth here. Nevertheless, an important conclusion can still be drawn as practitioners appear to engage

critically with the trader-developer model and provide clear indications that a more long-term lifecycle perspective may have a positive effect on ESG performance. Yet because such a perspective often does not align with project objectives from the trader-developer standpoint, the tension identified above emerges.

5.5 Chapter summary

In this chapter, the key findings of this research study were examined and discussed within the context of the analysed literature and the research questions of this work. The discussion was structured around the three research questions. In relation to the first research question, the chapter first addressed the general findings concerning ESG measures before discussing the key ESG measures for real estate projects in greater detail. Subsequently, the key ESG benefits and the findings relating to project success were discussed. Finally, with reference to the third research question, ESG integration factors were examined. However, in order to understand how ESG integration factors operate, the most important ESG integration challenges were discussed first. The ESG integration factors were then analysed across the company-level, project-level, and external level. The insights gained in this chapter directly inform the development of an ESG measures integration framework, which is developed in the following chapter.

CHAPTER SIX: FRAMEWORK DEVELOPMENT AND VERIFICATION

6.1 Introduction

The framework proposed in this chapter aims to incorporate insights from the reviewed literature and findings from the primary data. The goal, in line with the fourth research objective of this study, was to propose a ESG measures integration framework. This, at the same time makes a contribution to answer the third research question of this study that deals with how ESG measures can be effectively integrated into the development process of German real estate development projects to enhance project success.

In a subsequent step, the proposed framework was verified through an additional round of data collection. With the help of focus group discussions, the findings of the study were verified and the framework was refined. This iterative process ensured the framework is both practical and applicable, addressing the specific needs of ESG integration in real estate development.

6.2 Aim of the framework

A framework can be utilised to provide practitioners with a shared language, enabling the implementation of a theoretical concept in the real world. The framework serves as a practical tool for planning, executing, and evaluating the implementation process (Moullin *et al.*, 2020). This research study aimed to propose a framework that incorporates ESG measures and provides a structured approach to integrating these measures into the project development process to enhance project success. The framework was developed to address the issue of the previously insufficient integration of ESG measures into the real estate development process.

The development of the framework was shaped by the literature-derived insights as presented in the conceptual framework (see **Figure 2. 3**) and by the themes developed from the findings of interviews with real estate development experts. As the applicability of the framework in real-world project situations is key to this study, the identified ESG integration

factors were applied in the development of the framework. Firstly, a certain degree of simplicity is essential to ensure applicability, particularly within the highly complex domain of ESG. Additionally, the framework should incorporate a degree of flexibility and avoid proposing a one-size-fits-all approach. The heterogeneity of projects and organisations must be accounted for in the model's development. Given that the core focus of this research is the integration of ESG measures into the real estate development process, the process itself should form the central element of this framework. Beyond the process, including the identified ESG measures and the established ESG benefits are crucial.

The framework to be developed was intended to function within the business model of the real estate trader-developer, which is central to this study. It is not the aim to develop a new business model. Rather, in line with the third research question of this study, the objective is to integrate ESG measures effectively into the development process of German real estate development projects in order to enhance project success. Therefore, during the development and verification of the framework, careful attention was paid to ensuring its practicality and applicability within the existing business model of the real estate trader-developer.

To achieve this, the following aims of the ESG measures integration framework were formulated:

- Present identified ESG measures for integration into the real estate development process.
- Provide factors to enable and improve the integration.
- Enable the enhancement of project success by considering ESG benefits.

To achieve this, the framework should consider the following aspects:

- Enable practical application of the framework.
- Applicability in real estate trader-developer business model.
- Easy-to-understand framework that supports project managers in their daily project work.
- Consideration of organisational and project-specific heterogeneity.
- Process-centric design to reflect the real estate development process.

6.3 Initial framework development

In this section, a framework was developed based on insights derived from the literature and collected data. The fieldwork has made it clear that this needs to cover a wide range and

must focus on both the organisation and the project, while also addressing ESG measures and ESG benefits as well as project success in detail. Therefore, the following section presents the individual components of the framework, followed by the presentation of the initial framework.

6.3.1 Framework elements

The developed framework consists of a variety of elements, which originate from the collected insights of this study. The following section briefly explains each element, its origin and its function, before introducing the initial framework.

Already in the conceptual framework, indications emerged that a distinction between the project-level and the company-level is necessary, and that the overarching strategy must be translated onto the project-level (Baumann and Müller, 2021; Kim and Chang, 2022). The analysis and discussion of the data collected in this study also strongly support making this distinction. Accordingly, the decision was taken to divide ESG strategy into a company-level and a project-level dimension. In addition, both the literature review (see the conceptual framework theme *ESG performance determinants*) and the empirical data made it clear that the integration of ESG measures at project-level cannot be considered independently of the organisational context, since the type, location, and size of the company have a substantial influence on ESG performance.

Therefore, the first element describes the *ESG company strategy*. It provides the foundation for the business model and sets the framework for addressing ESG issues at the project-level. **Figure 6. 1** illustrates the element ESG company strategy with its components *knowledge*, *mindset* and *capacity*, which have been identified as the most important aspects to consider. *Knowledge* was included because the literature review already highlighted the ambiguity, undefined nature, and lack of knowledge associated with ESG integration (see the conceptual framework themes *ESG agenda* and *conceptual ambiguity of ESG*). Beyond this literature-derived need to consider a *knowledge*-component, corresponding evidence also emerged from the empirical findings. Already in Theme 1, it became clear that practitioners in this study hold differing perceptions of ESG. Furthermore, **Section 5.4.1.2** clearly identifies the complexity of ESG as one of the key challenges that must be addressed. It therefore appears reasonable to provide relevant ESG knowledge at the company-level, or to ensure that

project managers are able to acquire such knowledge. This is also directly linked to the inclusion of the component *mindset*. Although the role of an ESG-driven mindset has been described only to a limited extent in the literature as an important factor for ESG integration (see **Section 5.4.2.2**), this aspect was highly prominent in the analysed data. In view of the practitioner-focussed orientation of the framework to be developed, it therefore appears appropriate to include this aspect, given the high relevance attributed to it by the practitioners. A similar observation applies to *capacity*, which must be provided at the project-level in order to enable the implementation of the previously outlined aspects. Although the literature discusses the importance of sufficient company-level capacity in terms of personnel, expertise, time, and budget primarily in adjacent fields of research rather than explicitly in the context of ESG, the data collected in this study clearly indicate that adequate *capacity* constitutes a highly important ESG integration factor at the company-level.

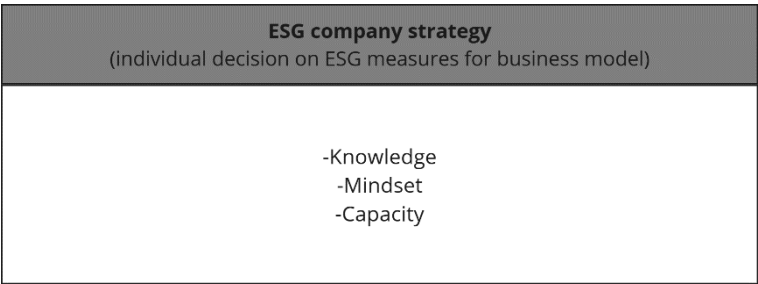


Figure 6. 1: Element 1 – ESG company strategy (initial version)

Source: Researcher (2026)

Following the distinction of company-level and project-level, the second element of the framework to be appraised focuses on the *ESG project strategy*. This element specifically takes into account aspects that explicitly relate to the project and the project team. **Figure 6. 2** illustrates the ESG project strategy with its component’s *simplicity, flexibility, tangible impact, top-down approach, early-stage consideration* and *mapping*. The development of the framework element *ESG project strategy* was primarily informed by the ESG integration factors presented in the conceptual framework under the literature-derived theme *conditions of integration*. In addition, the findings relating to project-level integration factors, presented in Theme 4 and subsequently discussed in **Section 5.4.3**, were incorporated, as their relevance for effective ESG integration was clearly highlighted. Departing somewhat from this structure and serving as a link between the company-level and the project-level, the

component *top-down approach* was also included. Although this aspect was initially discussed at the company-level, its inclusion within the component ESG project strategy helps to underline, first, the influence of the management level on the project and, second, that the project manager must likewise establish appropriate project-specific directions for ESG integration.

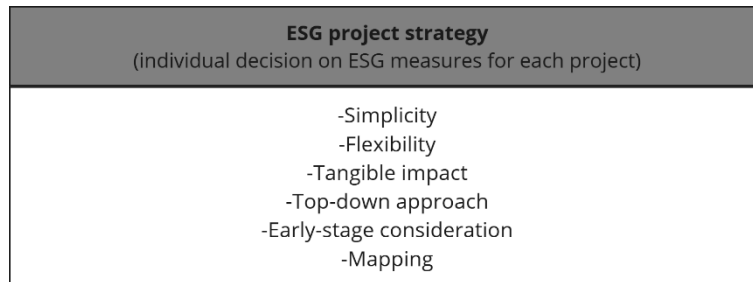


Figure 6. 2: Element 2 – ESG project strategy (initial version)

Source: Researcher (2026)

Given that the *real estate development process* is central to this research, it is logical to incorporate it as an element into the ESG measures integration framework. There are various ways to describe this process; however, the event-sequence model is commonly used to analyse the development process, as extensively outlined in **Section 2.1.5**. For the representation of the development process, the researcher decided to make use of the models of Diederichs (2003) (*see Figure 2. 1*) and Schulte and Bone-Winkel (2008) (*see Figure 2. 2*). Diederichs' (2003) model makes the individual sub-steps of real estate development visible, highlights the decision-making points of each step and underlines the different competencies and resources required at each project stage. This type of representation of the development process was, for example, also used by Masuri (2015) to integrate aspects of facility management into real estate development. In this work, it became clear that an event-sequence model is not only well-suited to represent the development process in a simple way and to capture the heterogeneity of projects and organisations, it has also proven to be very suitable for making specific adjustments aimed at optimising the process from a particular perspective (Masuri, 2015).

However, since this model leaves out essential aspects, particularly from the commercial perspective of real estate development, it seems reasonable to also consider the model by Schulte and Bone-Winkel (2008). This more detailed model covers the essential project

phases but places greater emphasis on commercial decision-making moments. In addition, as already highlighted in the literature, the important aspect of project marketing – including leasing, investment, and sales – is also captured (Schäfer and Conzen, 2007). Since it has been shown that these aspects are crucial for the success of a project (Fisher and Robson, 2006), it seems sensible to include them in the model as well.

Figure 6. 3 illustrates the real estate development process referring to the event-sequence models of Diederichs (2003) and Schulte and Bone-Winkel (2008). To avoid overloading the framework, a more streamlined representation of the phases, as seen in Diederichs (2003), was adopted. The depiction of the successive phases was drawn from the model of Schulte and Bone-Winkel (2008), with particular emphasis on the cross-phase actions such as project marketing and the securing of the project and plot, which, considering the insights from the literature review (Fisher and Robson, 2006; Auer, 2022) and the fieldwork, appeared suitable for illustrating the project development process in the context of this study. Diederichs (2003) further extends his model to include the operational phase of the project, even though this phase does not traditionally fall within the developer's scope of services. However, since various ESG measures are only implemented or take effect during the operational phase, it seems reasonable to also include this element in the framework.

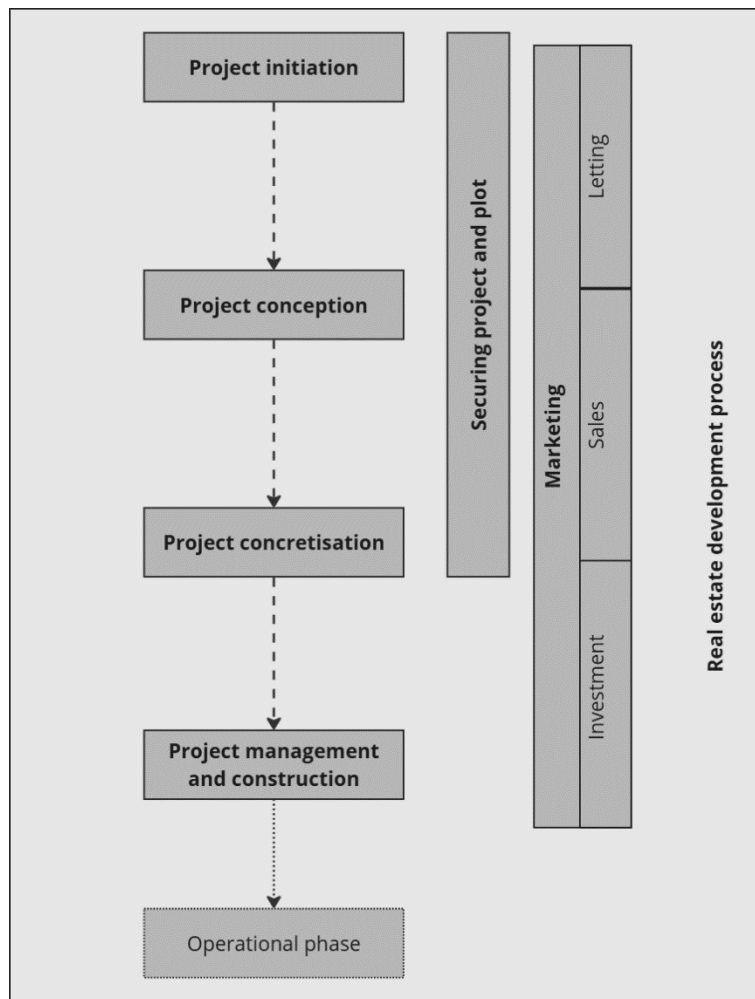


Figure 6. 3: Element 3 – Real estate development process (initial version)

Source: Researcher (2026)

Especially regarding the various development phases, it is important to consider that certain ESG measures should be accounted for at specific times within the project. Only during those phases can ESG measures effectively impact the project outcome. It is beyond the scope of this work to allocate all the ESG measures identified through the literature review and fieldwork precisely to the development phases. However, for a clear understanding of the framework being developed, it is crucial to recognise that such allocation must be made on a company- and project-specific basis. To illustrate this concept, exemplary ESG measures as identified in the literature review have been mapped to the different development phases and the two cross-phase actions. **Figure 6. 4** demonstrates that some ESG measures should be implemented early in the process, such as during land acquisition or project initiation. In contrast, others become relevant only at later stages. Conversely, some measures should span the entire development process, drawing on the cross-phase

actions highlighted by Schulte and Bone-Winkel (2008). This differentiation highlights the necessity for a nuanced approach to integrating ESG measures, ensuring their timing aligns with their intended impact on project outcomes. The ESG measures identified in *Sections 2.3.4 - 2.3.6* and in the fieldwork can be allocated to the matrix below. The ESG measures included in the matrix were exemplary selected without reference to any specific organisation or project and serve solely to illustrate and clarify how ESG measures can be integrated across the various phases of a project over its life cycle. In assigning the measures to the individual areas, the previously discussed blurred boundaries of ESG measures must be taken into account.

		ESG measures		
		Environmental	Social	Governance
Development phases and actions	Securing project and plot (cross-phase action)	e.g. environmental compensations, pollution management	e.g. public investment, community impact	e.g. KYC, AML, shareholder rights
	Project initiation	e.g. site selection, development criteria, climate risk analysis	e.g. infrastructure proximity, heritage sensitivity	e.g. economic stability, contractor relations, project management tools
	Project conception	e.g. renewable energy, land use, environmental design, soil sealing	e.g. address local needs, open space design, urban design quality	e.g. stakeholder participation, building certification, climate change adaptation
	Project concretisation	e.g. energy efficiency measures, reduce water consumption, low carbon technology	e.g. tenant mix, surveillance, mobility offers	e.g. sustainability reporting, brand management, marketing
	Project management and construction	e.g. pollution prevention, material use	e.g. construction site safety, labour laws	e.g. transparent procurement, material disclosure
	Marketing (cross-phase action incl. investment, letting and sales)	e.g. LCA, waste management	e.g. affordability, employment creation	e.g. data protection, KYC & AML, transparent documentation
	Whole development process	e.g. environmental management system, reduction of energy consumption	e.g. skilled project team, human rights	e.g. transparency, business and market ethics, maturity of workforce, efficient decision making

Figure 6. 4: Phase- and action-oriented ESG measures

Source: Researcher (2026)

To improve understanding of the framework, the researcher decided to include a streamlined version of the figure shown above as an element in the framework. *Figure 6. 5* serves as a simplified representation of the *phase- and action-oriented ESG measures*.

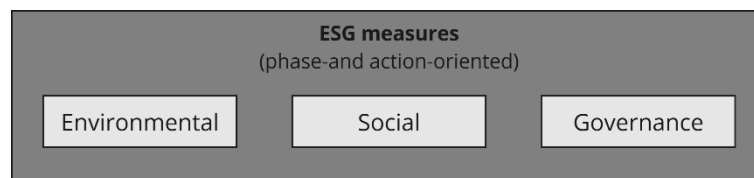


Figure 6. 5: Element 4 – Phase and action-oriented ESG measures (streamlined representation, initial version)

Source: Researcher (2026)

As the fifth element, the framework includes *ESG benefits*, which can be both tangible and intangible. In general, ESG benefits can be distinguished by whether they primarily have an effect at the project-level or at the company-level. **Figure 6. 6** presents element 5, showing the ESG benefits at both the project and company-levels along with the key ESG benefits identified for each. While the literature review did not distinguish explicitly between project-level and company-level ESG benefits, the fieldwork demonstrated that this distinction is helpful in capturing the different levels at which ESG benefits materialise. Already within the conceptual framework (*see rationale for integration*), it became evident that the dominant focus lies on clearly measurable indicators, particularly financial performance, operational performance, and competitive advantage. Based on the fieldwork findings, these aspects were subsequently grouped under the broader label of *marketability*. One ESG benefit that could not be derived from the literature in this form is the *contribution to sustainability*. However, given the frequency with which this aspect was mentioned by interviewees, it is also included here. By contrast, for the further aspects of *user satisfaction* and *finance and insurance conditions*, relevant references could again be identified in the literature, which is why these were also incorporated into the framework element. Although intangible benefits were clearly identified in the literature review, their relevance and differentiation appear to be greater among practitioners. For this reason, four key company-level benefits are identified here, all of which can primarily be classified as intangible benefits.

ESG benefits (tangible / intangible)	
Benefits on project-level - Marketability - Contribution to sustainability - User satisfaction - Finance and insurance conditions	Benefits on company-level - Image - Trustworthiness - Lower risk profile - Recruiting

Figure 6. 6: Element 5 – ESG benefits (initial version)

Source: Researcher (2026)

As the sixth element, *project success* was included in the framework. **Figure 6. 7** illustrates it with its attributes: *economic viability*, *iron triangle*, *meeting defined goals*, *market timing*, *addressing local needs*, *collateral benefits*, and *sustainability*.

Given the strong alignment between the literature-derived themes and the fieldwork findings regarding the importance of the project's *economic viability* and the *iron triangle*, these elements were prioritised in the framework element presented below. Drawing on the insights from Theme 3 in relation to *contingencies and variances* and reflecting the arguments advanced by Flyvbjerg (2009, 2014, 2017), the additional component *meeting defined goals* was included. This component captures, on the one hand, the need to adhere to project parameters established during the earlier planning phases in terms of time, cost, and quality, and, on the other hand, the need to ensure that the intended project outcomes are actually achieved after completion. One aspect that received only limited attention in the literature review and was therefore not included in the conceptual framework is *market timing*. However, given the prominent role it assumed in the analysis of the empirical material, it appears appropriate to incorporate it in the framework, thereby also highlighting the interrelationship between market conditions and real estate projects. The two further components derived from the fieldwork, *address local needs* and *collateral benefits*, are to some extent consistent with literature findings in the context of *stakeholder considerations* and *promised benefits*, and were therefore taken into account accordingly, although the wording now more aligns with the collected data. By contrast, *sustainability* was not explicitly identified in the literature, yet emerged as a highly prominent component in the empirical data. This once again indicates that, in the context of ESG, the achievement of sustainability may itself be understood as a dimension of project success.

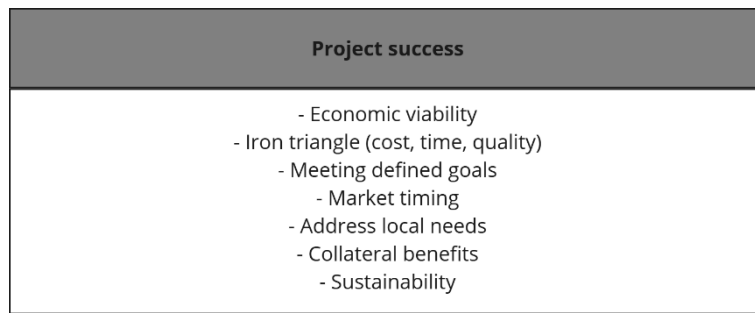


Figure 6. 7: Element 6 – Project success (initial version)

Source: Researcher (2026)

As the final element, the element of the *review and adaptation process* was included. Already the original model by Diederichs (2003) envisioned an iterative process that describes several phases of optimisation. Baumann and Müller (2021) likewise propose a review and adaptation process for effective sustainability integration. This process encompasses all elements of the framework, starting from the ESG company strategy and the ESG project strategy, through the ESG measures across various phases and actions of the project development process, to the ESG benefits and the assessment of project success. On the one hand, the review and adaptation process ensures that the ESG measures have been integrated into the process and the project as planned; on the other hand, tying in with the attribute of *tangible impact* in the ESG project strategy, it enables monitoring and measurability. Additionally, it enables the continuous evaluation of whether the objectives set for each element have been met. For example, the review and adaptation process can help determine whether the *flexibility* was sufficient or whether further adjustments are needed to respond to the individual circumstances of a project. Likewise, it enables an examination of the interplay between the targeted ESG benefits and the intended project's success. Furthermore, it can account for any potential changes in the business model or company strategy and ensure these adjustments cascade down to the project-level accordingly. Importantly, this process reflects the principle of *double-loop learning* as outlined by Argyris (1977), which goes beyond correcting errors within existing parameters and instead questions and revises the underlying assumptions, strategies, and goals. Applying this concept within the framework allows organisations not only to improve ESG implementation but also to critically reflect on and evolve their broader ESG approaches and strategies over time.

6.3.2 Initial ESG measures integration framework

After the previous sections provided a detailed presentation and justification of each individual component of the model, this section now presents the initial ESG measures integration framework in its entirety for the first time.

Figure 6. 8 shows the initial ESG measures integration framework, in which the seven elements developed on the basis of literature-derived themes and the insights of the empirical findings of this study are presented. As the hierarchical connection (indicated by bold arrows) between the elements shows, the framework begins with the element *ESG company strategy* in the upper left corner. This is hierarchically linked to the element *ESG project strategy*, which in turn has an impact on the *development process*. Additional hierarchical connections exist between the *ESG company strategy* and the *ESG benefits*, as well as between the *ESG project strategy* and *project success*.

The element of *phase- and action-oriented ESG measures* includes an ESG measures consideration (indicated by regular arrows) at both the *ESG company* and *ESG project strategy* levels, as well as within the individual phases of the *development process*. Although ESG measures often only show their effects during the operational phase, the real estate developer is often no longer directly involved at this stage, which is why, on the one hand, no ESG measures consideration is shown here, and, on the other hand, the operational phase is visually set apart (indicated by a dotted line). Finally, the dashed line marks the *review and adaptation process*, which runs continuously between the *ESG company strategy*, *ESG project strategy*, *ESG benefits*, and *project success*.

The proposed framework successfully achieves its core aims by systematically integrating the identified ESG measures into the real estate development process and by aligning them with both organisational and project-levels. By mapping ESG measures across the individual phases and cross-phase actions of the development process, the framework provides a clear guide for where and how ESG measures can be applied, making them actionable and project-relevant. Furthermore, the inclusion of key enablers – such as *knowledge*, *mindset*, and *capacity* at the company-level, as well as *simplicity*, *tangible impact*, *flexibility*, *early-stage consideration*, *mapping*, and a *top-down approach* at the project-level – addresses the factors necessary to enable and improve ESG integration. These attributes ensure that both

organisational commitment and project-level strategies are in place to support meaningful ESG measures integration. In terms of enhancing project success, the framework explicitly connects ESG integration to tangible and intangible ESG benefits, such as improved *marketability*, better *financing and insurance conditions*, *contribution to sustainability*, and *trustworthiness*. By doing so, it clarifies how ESG efforts contribute not just to compliance or reputation, but directly to achieving project success.

One of the key objectives of this work was to enable the **practical application** of the framework. The ESG measures framework translates abstract ESG goals into concrete actions and measures across the real estate development process in Germany, supported by feedback mechanisms such as the *review and adaptation process*. This enables a compact representation of the integration process, facilitating its application in practice. Additionally, by incorporating existing event-sequence models that are frequently applied in teaching and research on German real estate development projects, it can be ensured that the framework is **applicable to real estate development**. Since careful attention was also paid to ensuring that all project phases, particularly those that are important from the perspective of the trader-developer, such as the sales phase, are likewise taken into account, while the operational phase, which is only of subsequent relevance to the trader-developer, is also presented only to a limited extent in the proposed framework, it can be assumed that the framework is likewise **applicable to the trader-developer business model**. Despite the enormous complexity of the ESG field, care was taken during the framework development to ensure that it remains **easy to understand**, requires little prior knowledge, and avoids being overloaded with detail. For this reason, elements such as the *ESG measures* and the *development process* were included in a streamlined version, while more detailed representations are provided in the preceding sections. This approach further improves practical applicability. Furthermore, the framework considers the **heterogeneity** of the real estate market by offering concrete guidance on flexibility and the mapping of individual project processes. Its design also allows for cross-project application, as it was intentionally developed to be usable across different organisations and various project types. The framework does not focus on a specific asset class, such as office or residential buildings, nor is it limited to new construction or existing properties. This ensures that the framework meets the demands of the heterogeneous real estate market. Finally, a core goal was to place the **real estate development process** at the centre of the framework. By aligning ESG measures with the specific phases and cross-phase actions of the real estate development

process, the framework reflects the practical realities, uncertainties, and heterogeneity of real estate development.

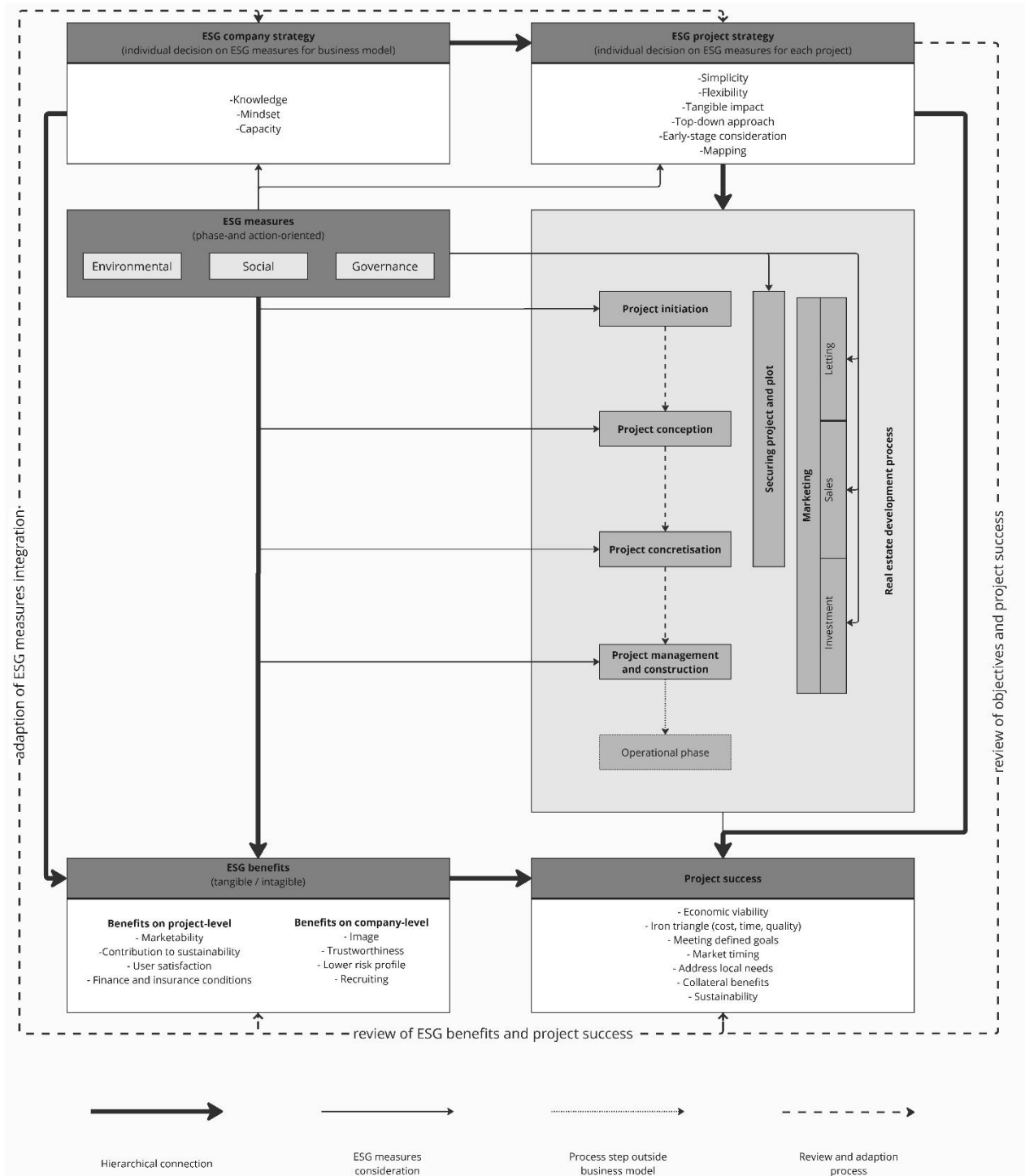


Figure 6. 8: Initial ESG measures integration framework

Source: Researcher (2026)

6.4 Verification process using focus groups

In the description and selection of the most suitable methodology for this research study (see **Section 3.6**), it was determined that a two-stage data collection process is best suited to address the research aim of this study. The objective is not only to propose a framework but also to verify it. The following section outlines the process that was used to verify the framework.

Qualitative research is iterative rather than linear, moving back and forth between design and implementation (Morse *et al.*, 2002). Specifically, the approach of revisiting data collection to verify research findings aligns with Bryman's (2012) statement on the abductive approach to theory development. Bryman (2012) argues that even primarily inductive research approaches incorporate a deductive element, as theories developed in qualitative research are tested by collecting additional data to determine whether they hold true in practice. In this research study, new data is collected to test the developed theories – namely, the initial ESG measures integration framework – through focus groups. The objectives of the verification process were to:

- Present the research findings obtained from the reviewed literature and the qualitative primary data collection.
- Verify whether the perspectives, experiences and perceptions of research participants are correctly presented in the elements of the framework.
- Ensure that the proposed ESG measures integration framework complies with the practical requirements of senior practitioners in the field of German real estate development.
- Verify whether the proposed ESG measures integration framework is suitable for application in the everyday project work of real estate development companies.
- Confirm whether the framework meets the aim of the research study.

All research participants who had taken part in the interviews agreed to be contacted again to participate in the focus groups. The study participants were contacted in writing to confirm whether they were still interested in contributing to the verification of the proposed framework. The ten participants who replied were informed in writing about the procedure for the focus group session. **Table 6. 1** shows the research participants who participated in the focus groups.

Table 6. 1: Focus group participants

Session	No.	Job Description	Gender	Experience
1	A	Project Manager	Male	6-10 years
	C	Project/Sustainability Consultant	Male	11-15 years
	J	Sustainability Manager	Male	11-15 years
	O	Sustainability Manager	Female	Less than 5 years*
2	G	Project/Sustainability Consultant	Female	More than 20 years
	Q	Sustainability Manager	Female	5-10 years
	S	Project Manager	Female	11-15 years
3	B	Project/Sustainability Consultant	Male	5-10 years
	H	Project/Sustainability Consultant	Male	16-20 years
	P	Project Manager	Female	11-15 years

* Participants with less than 5 years of professional experience were able to objectively demonstrate that they could make a valuable contribution to this study. They achieved this either through specialised training in the field of sustainability or by taking on responsible roles within their organisations, allowing them to acquire in-depth knowledge of the subject matter quickly.

Before conducting the focus group discussions, the researcher carried out a pilot study as part of the data collection process. The primary objectives were to review the structure and flow of the discussion, to determine an appropriate time frame, and to refine both the focus group guide (*see Appendix 3*) and the presentation that introduced the research findings and presented the initial framework (*see Appendix 4*). The pilot study was implemented in two rounds. Participants in these sessions were the same practitioners and academics who had previously taken part in the pilot study for the semi-structured interviews. Their feedback proved valuable in testing the discussion guide, identifying potential challenges, and ensuring that the final focus group format was both coherent and feasible for the main study.

At the beginning of the actual focus groups, the researcher gave an approximately 30-minute presentation detailing the study's process, the findings to date, and the developed ESG measures integration framework. This presentation was followed by an approximately one-hour discussion, review, critique and refinement of the framework. The researcher used the focus group guide to structure the discussion. The objective was to stimulate a conversation among the participants based on pre-defined questions related to the topics of general verification, exploration of divergence, practical implications, and refinement. Each participant was initially asked the introductory questions for these four thematic areas. This was followed by a group discussion in which opinions were shared, agreements and divergences were identified, and corresponding viewpoints were deliberated.

6.5 Verification results

The focus group data has been analysed using thematic analysis under consideration of the model to analyse focus group data proposed by Massey (2011). This section is structured by the elements of the framework which were discussed in the focus groups. The verifications and refinements presented here are based primarily on the data generated in the focus groups. Where appropriate, insights from this study's literature review were drawn upon, and, in some cases, additional literature was consulted. However, this served solely the purpose of better explaining emerging phenomena and of contextualising divergences and consistencies in light of the existing body of literature. It is not the aim of this section to revisit the genesis of the individual framework components from the literature-derived themes and findings, as this has already been discussed in detail in *Section 6.3*.

6.5.1 Verification of structure and design

The feedback from the research participants in all three focus group discussions was highly positive, reflecting that the presented framework effectively summarises the complexity of ESG measures integration into the real estate development process in a concise manner. The following exemplary statements further illustrate this feedback:

"I believe this is, first and foremost, a well-structured framework for capturing the entire thematic area. I think it serves as a very useful guide for companies that genuinely intend to engage with the topic."

This was stated by Participant A, a project manager, in session 1. Also, Participant B, a sustainability manager, confirmed in session 3:

"Fundamentally, much of what has been said is already very accurate. If I start from the top, everything is completely correct [...]"

Furthermore, the research participants affirmed that the presented findings, as well as the opinions and perceptions of prior semi-structured interviews, reflected their own experiences and views on ESG integration as expressed in the interviews. This was echoed by Participant O, a sustainability manager at a real estate development company, who remarked in the first session:

"[...] I strongly identify with the framework."

This was also agreed by Participant Q, a sustainability manager in session 2, who stated:

"In my opinion, the framework reflects very well what we already discussed in our previous conversation [...]."

The other participants in the sessions – Participant C and J in session 1, participants G and S in session 2, as well as participants H and P in session 3 – agreed with this positive evaluation of the fundamental structure of the framework and its reflection of the statements expressed in the semi-structured interviews. Therefore, it can generally be assumed that the design and presentation of the framework address the practical requirements of the senior practitioners and that it meets the perspectives, perceptions and opinions of the participants as expressed in the semi-structured interviews. However, in the following sections, the participants' comments, perspectives, and refinement suggestions regarding each element of the framework will be discussed in order to demonstrate in detail to what extent the framework meets the research aim of this study.

6.5.2 Verification and refinement of element 1: ESG company strategy

During the focus group discussions, the importance of the attributes *mindset* and *capacity* was strongly emphasised. In all sessions, participants discussed the critical role these components play at the company-level. However, it also became clear that reordering them might be beneficial. In session 3, Participant P suggested placing *capacity* first in the ESG company strategy. It was argued that *capacity* – especially in a top-down structure – must be allocated by management and is essential for enabling engagement with ESG topics. It was suggested that *capacity* creates the space to address these issues, leading to knowledge development, which in turn fosters awareness of ESG relevance and the need for integration. This suggestion was supported by Participants B and H. A similar debate occurred in session 2. Participant S initiated it by questioning whether the attribute list implied prioritisation. Here, too, Participants G, Q, and S agreed that reordering would be useful. As a result, the order was changed to *capacity*, *knowledge*, and *mindset*.

Beyond reordering, all sessions underscored the complexity of ESG implementation in real estate – a key issue in the research findings. Including *knowledge* in the ESG company

strategy is therefore a well-supported decision, as it enables firms to navigate this complexity effectively.

Furthermore, it became clear that the attribute *top-down approach* is more appropriately assigned to the ESG company strategy, as it is linked to the company's management level. The focus group discussions confirmed that the *top-down approach* is essential for the effective integration of ESG measures. The importance of this attribute was underlined in all three focus group sessions. This shared perspective is illustrated by the exemplary statements of Participant B, Participant C, and Participant Q:

"[ESG integration] really affects absolutely everything. It has to be implemented across all processes, and it requires everyone in a company. That means the top-down approach is absolutely the right way. With a project developer, you first have to convince the leadership level [...] Without them, nothing works."

"I first have to start with a top-down approach [...]. That's how I get people in my company on board, moving from the big picture into the details."

"The top-down approach is the starting point for successfully handling ESG measures. If management isn't behind it, you can forget it. Therefore, it definitely makes sense to include this aspect. However, I would suggest consistently integrating this point into the company strategy. At the project-level, it's already too late."

This refinement was also considered useful by Participants G and S in session 2, as well as by Participants A, C, J, and O in session 1. This aspect was not discussed in session 3. However, it also became evident that a purely *top-down approach* from the management level is not sufficient. There must also be a corresponding internal and external willingness to engage. The importance of a well-functioning team with the right mindset and readiness to tackle the challenges of ESG measure integration was mentioned at various points in the research findings, in alignment with the suggestions of Deden *et al.* (2018). However, through the focus group discussions, it became clear that this aspect should already be included as an attribute of the ESG company strategy to provide a necessary counterbalance to the *top-down approach*. Participant P, a project manager, stated in session 3,

"For me, it is naturally top-down but also a bit bottom-up."

Participant H, a sustainability consultant, further elaborated in the same session,

"It is also a bottom-up issue. When I look at the framework and see the top-down approach, the first thing that comes to my mind is that it won't work without bottom-up as well."

When asked for further clarification, Participant P added,

"[...] It is always said that you need someone on the board or in management who drives the issue from the top as a sponsor; otherwise, it won't be implemented. But at the same time, you also need the bottom-up perspective. It has to be reflected back."

Interestingly, this discussion picks up on the criticism raised by Heyden *et al.* (2016), who questioned the effectiveness of a top-down approach, as discussed in **Section 5.4.2.2**. Through this refinement from the verification process, the insights of Heyden *et al.* (2016) can be incorporated, who recommend that the implementation or transformation of an organisational culture should also originate from middle management and be supported as effectively as possible by top management. This connection could be identified particularly when reflecting on the proposed model by Massey (2011) for the analysis of focus group data and through the application of attributional data theory. Without having asked directly or having explicit information about the participants' positions within their companies, the researcher attributes a middle management role to the research participants and based on this, infers a corresponding attitude towards their top management. Since this attributional data was applicable across all three focus groups, the researcher considers these attributes and the resulting inferences to be justified.

To reflect this in the framework, the attribute *teamwork* was added to the element. This underscores that a purely top-down approach is insufficient; the whole team must be engaged, requiring some bottom-up involvement as well. As the discussion among Participants B, H, and P evolved, it became clear that operational involvement should go beyond the internal team to include external architects, consultants, engineers, and contractors. Thus, *teamwork* encompasses both internal and external (project) teams. The focus group discussions confirmed that including the element *ESG company strategy* in the integration framework is well justified. Although the development process and the project

are central to this study, all 10 participants agreed that real estate development cannot be analysed or improved in isolation from the ESG company strategy. Refining the attributes within this element has further enhanced its practical applicability, ensuring its contribution to the study's aim. **Figure 6. 9** illustrates the refined and verified element 1.

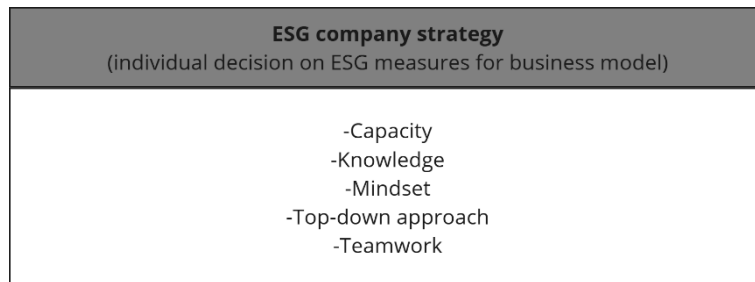


Figure 6. 9: Element 1 – ESG company strategy (final, verified version)

Source: Researcher (2026)

6.5.3 Verification and refinement of element 2: ESG project strategy

In the discussions about the ESG project strategy, the three focus group sessions focussed most intensely on the aspects of *tangible impact* and *early-stage consideration*. Regarding *early-stage consideration*, the discussions centred on emphasising how crucial it is to integrate ESG at an early stage. For example, Participant P, a project manager, explained:

“[ESG integration] is, for me, always something that belongs in a very early project phase – a fundamental decision.”

Across all three sessions, participants agreed that integrating ESG measures requires their consideration as early as possible in the project process. While this point was undisputed and discussed only briefly, the attribute *tangible impact* prompted extensive and dynamic conversation. These discussions revealed that measurability – central to *tangible impact* – is both highly important and complex. Participants debated whether building certifications should be incorporated into the framework, as they, like the EU Taxonomy, offer predefined structures and enhance measurability at the ESG project strategy level. However, due to project and company heterogeneity, including certifications directly in the framework was considered impractical.

Instead, consensus emerged around the importance of processing project data transparently and providing some form of certified data. This could simplify certification processes or facilitate comparability between projects, aligning with the *tangible impact* attribute. As a result, the attribute *transparency* was added to the ESG project strategy. Throughout the three sessions, it became clear that measurability and transparency are closely interrelated. The inclusion of the attributes *simplicity* and *flexibility* in the ESG project strategy was also widely supported, although not deeply debated. *Simplicity* was mainly valued for practical implementation – ensuring the framework remains accessible and does not overwhelm users. *Flexibility* was considered essential across all sessions, particularly due to the diversity in project types and uses. **Figure 6. 10** illustrates the final and verified version of element 2.

ESG project strategy (individual decision on ESG measures for each project)
-Tangible impact -Transparency -Early-stage consideration -Simplicity -Flexibility -Mapping

Figure 6. 10: Element 2 – ESG project strategy (final, verified version)

Source: Researcher (2026)

6.5.4 Verification and refinement of element 3: ESG measures

In the discussion surrounding the ESG measures, there was broad agreement that the way the ESG measures were structured and presented was not only well-executed but also clearly demonstrated – through the differentiation of environmental, social, and governance measures – how many distinct actions can be identified as ESG measures. Particularly with regard to the research questions of this study, this feedback from the focus group discussions is highly valuable. In session 3, Participant P remarked,

“For me, the most interesting part was this matrix with the ESG measures. That’s something that, on an operational level, always raises questions for me. What does that [ESG measure] actually mean?”

A similar discussion was observed in session 2. Participants G, Q, and S exchanged views especially on the social and governance measures listed in the presented ESG measures matrix. It became apparent that several of the measures included in the matrix were not

considered ESG measures by the research participants. This indicates that the ESG measures matrix, underlying element 3, can contribute to sharpening the understanding of ESG measures in practice and to illustrating the complexity and multifaceted nature of ESG measures. This is a key insight, particularly considering the research aim of this study. However, in light of the need for a simple and easy-to-understand framework, the question arose of how the emphasis on a few, but project-relevant measures, should be interpreted. This was particularly discussed in the context of the fact that the framework so far has not offered guidance on which ESG measures are of particular significance. There was a consensus among participants of session 1 and 2 that the necessary simplicity of the framework should not result in an overly simplistic view of ESG measures. For instance, participants argued that selecting only three or four measures for a whole project would be too rudimentary. It became clear that the streamlined version of element 3 required an additional enhancement – one that, on the one hand, emphasises that ESG measures must consider all three dimensions: environmental, social, and governance; and, on the other hand, responds to the explicit desire to include a prioritisation, also with regard to the *ESG benefits*. Participant G, a project and sustainability consultant, proposed specifying three to four measures per ESG pillar, while Participants Q and S argued against prescribing fixed measures, referring to the need for flexibility. Therefore, the researcher decided to incorporate the prioritisation of ESG measures, developed during the semi-structured interviews, into element 3. This approach not only provides a prioritisation of ESG measures but also highlights the different areas of action. In doing so, the researcher followed the recommendations from the discussions in sessions 2 and 3, where the need for further differentiation and detailing of the presentation of was suggested. This makes the prioritisation of measures more apparent – for example, the strong focus on energy efficiency as an environmental measure is now clearly visible in the framework. Additionally, it becomes evident which aspects are relevant in the other areas, namely social and governance. As such, the ESG measures section is now better structured at a glance, without losing the necessary simplicity.

Especially in the context of the practical application of the framework, the EU Taxonomy was repeatedly discussed in all three focus group sessions. It became clear that the EU Taxonomy should be considered within the framework, as it plays a crucial role in prescribing ESG measures for the German real estate market. However, given the highly dynamic nature of regulatory developments, with new legal texts and regulations

continuously emerging, the researcher decided to supplement the ESG measures matrix with the text line “*EU Taxonomy aligned*”. This clearly indicates that the ESG measures should comply with the EU Taxonomy without referring to a specific directive. To avoid the implementation of fewer ESG measures at the expense of others, the researcher decided to follow a suggestion from the focus group session 1. Participant J proposed,

"One has to be careful that it does not become too simple or too rudimentary. In this regard, I find the so-called DNSH criteria of the Taxonomy quite appropriate. 'Do no significant harm' – it is indeed important to focus on certain goals in a project or in its phases. Nevertheless, I consider it extremely important to always uphold certain minimum standards everywhere. Therefore, I think the DNSH approach is the right one."

With this statement, Participant J suggests adopting the concept of DNSH (Do no significant harm) criteria and adapting it to the framework. The DNSH criteria of the EU Taxonomy stipulate that an economic activity must not be carried out at the expense of an environmental objective (EC, 2021b). The EU Taxonomy was also discussed in the semi-structured interviews (see **Sections 4.3.1 and 4.4.3**), however, the aspect of considering the DNSH criteria was only debated during the focus group discussions. When applied to the proposed framework, this means that, while the emphasis on simplicity in the ESG project strategy allows for a focus on a limited number of measures, these should not come at the expense of other ESG measures, as also argued by Raslanas *et al.* (2012). The refinement of the framework in this aspect was further discussed and welcomed by Participants A, C and O. This topic was also discussed in session 2, where it was emphasised that further differentiation is necessary for the integration of ESG measures. In the discussion between Participants G, Q, and S, reference was again made to the DNSH criteria – this time explicitly citing the guidelines of the ZIA (2015). Given this, a refinement of the element at this point appears both appropriate and justified.

Figure 6. 11 illustrates the refined and final version of element 3. The aspects *energy efficiency, materials & circularity*, and *environmental protection* have now been subsumed under environmental measures. *Property conception, property surroundings*, and *users* have been assigned to the social measures. The differentiation between governance measures at the *company-level* and *project-level* has also been incorporated. Moreover, at the bottom of

the figure, the addition of “*do no significant harm*” is now visible, emphasising that the selection and integration of ESG measures should not come at the expense of other measures or ESG dimensions. Additionally, a clear reference to the *EU Taxonomy* is included, highlighting the close interconnection between ESG measures and European legislation.

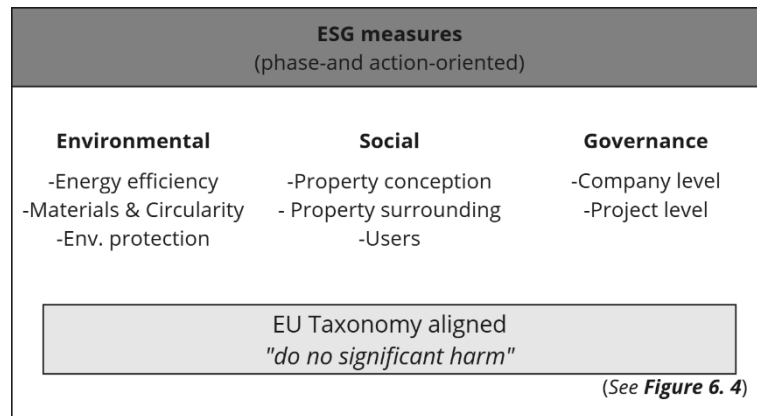


Figure 6. 11: Element 3 – ESG measures (final, verified version)

Source: Researcher (2026)

6.5.5 Verification and refinement of element 4: Real estate development process

There was very little need for discussion regarding the presentation of the real estate development process. The terminology and sequence of the project phases, based on the models of Diederichs (2003) and Schulte and Bone-Winkel (2008), were familiar to some participants. Participant B, a project and sustainability consultant, commented on the real estate development process with the following exemplary statement:

“The development phases shown in the framework are completely right in my opinion. I totally agree with this.”

The other research participants in the focus group sessions did not further comment on the selection and presentation of the real estate development process. The researcher attributes this to the fact that the process phases are, on the one hand, standard practice and, on the other hand, that the models underlying this framework are also familiar to project practitioners. This also indicates that the selection of the event-sequence models underlying the framework was well justified. Although there were no remarks regarding the development process itself, the participants discussed the inclusion of the operational phase within the development process. In the initial framework, this phase was positioned outside

the development process, both in the textual description and in the visual representation, as suggested by Bone-Winkel and Schulte (2008) and Bone-Winkel (1994). However, a consensus among the research participants in the focus group discussions indicated that the *operational phase* should also be assigned to the development process. In response, the researcher adjusted the framework to ensure that, while it remains clear that the *operational phase* does not fall directly within the sphere of influence or business model of trader-developers, a connection to the development process is established. Additionally, a link between *ESG measures* and the *operational phase* was incorporated to highlight that, within the real estate life cycle, this phase – while distinct – still involves measures relevant to the development phase. The discussion regarding the involvement of the *operational phase* in the development process and in the ESG measures integration took place in all three focus group sessions. Especially in session 1, Participants A, C, J, and O found a consensus that the *operational phase* lies outside the scope of the trader-developer business model, but the developer is still responsible for operating the building as many ESG measures – due to the *early-stage consideration* – will have to be integrated to the project in earlier project phases.

Figure 6. 12 illustrates the final and verified version of element 4 presenting the real estate development process. It is clearly shown that the operational phase of the project now lies outside the scope of the real estate development process but is still connected to the remaining project stages. To further highlight this breaking point, a box “*breaking point – end of the developer business model*” has been added.

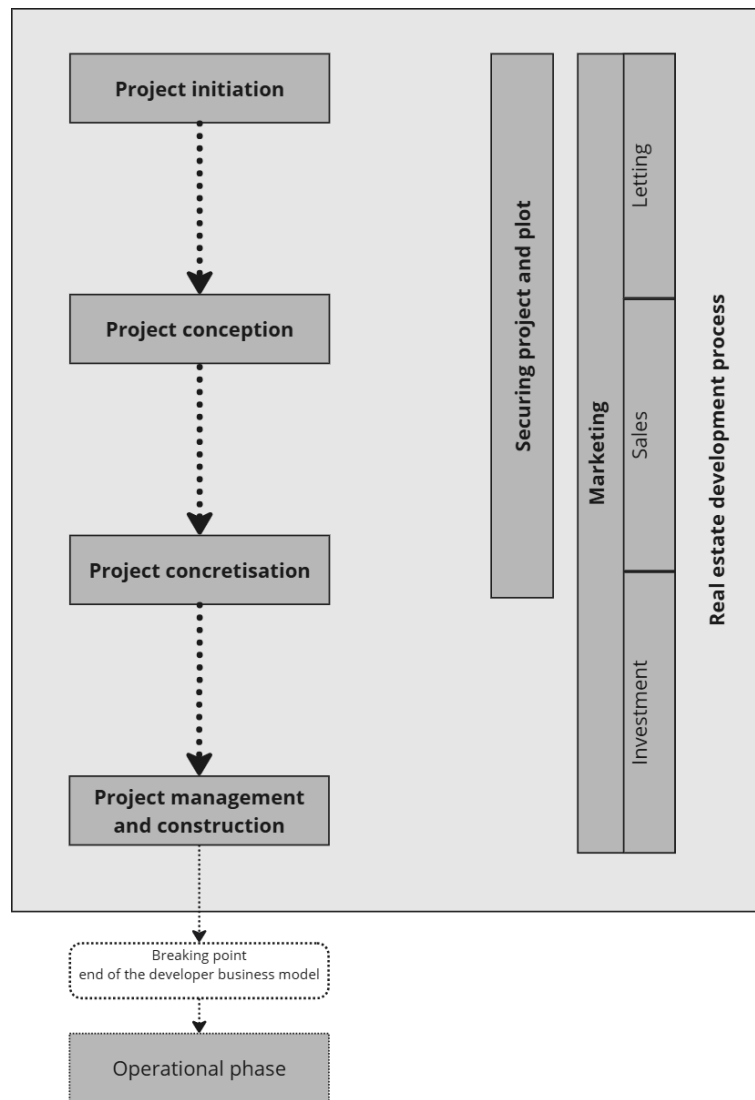


Figure 6. 12: Element 4 – Real estate development process (final, verified version)

Source: Researcher (2026)

6.5.6 Verification of element 5: ESG benefits

A large majority of focus group participants across the three different sessions confirmed once again that the marketability of a project is at the forefront when considering ESG benefits. Throughout the three focus group sessions, Participants C, H, P, G, and S in particular discussed the ESG benefits in the context of real estate development projects. It also became clear that ESG benefits are only associated with the implementation of certain ESG measures. The perspective emerged that environmental measures, and especially those anchored in the EU Taxonomy, are closely linked to ESG benefits. This insight, which was already described in detail in the discussion chapter (*see Section 4.4.3*), was further reinforced by the focus group discussions. However, the intensive discussions in the focus

groups also revealed that many ESG benefits are not well known among the research participants. An exemplary statement from Participant P illustrates this point:

“These benefits – that’s something I perceive as more of an afterthought. I don’t really see these benefits yet. [...] We have the energy standards, which are emphasised very strongly, but I haven’t really noticed all the other points so far. So, these benefits are still very hard for me to grasp.”

This statement exemplifies the debate that took place within the focus groups. It becomes clear that the energy-related perspective of buildings is at the centre of attention for senior practitioners, and that this is where connections to ESG benefits are sought. Since ESG measures in the other dimensions are less well known or less frequently considered, the ESG benefits associated with them are also less central to their considerations. Thus, the findings from the three focus group sessions further support the research findings of this study regarding ESG benefits. Apart from the further elaboration of the still diffuse perception of ESG benefits, no additional requests for adjustments or improvements to element 5 were made by the research participants in the focus groups. **Figure 6. 13** illustrates the unchanged but now verified final version of element 5.

ESG Benefits (tangible / intangible)	
Benefits on project level - Marketability - Contribution to sustainability - User satisfaction - Finance and insurance conditions	Benefits on company level - Image - Trustworthiness - Lower risk profile - Recruiting

Figure 6. 13: Element 5 – ESG benefits (final, verified version)

Source: Researcher (2026)

6.5.7 Verification and refinement of element 6: Project success

In the discussion around *project success*, almost all 10 of the focus group participants agreed that the economic viability of a project is at the centre of how project success is defined. This insight had already emerged from the discussions about ESG benefits. The prioritisation of *economic viability* as the key element of project success was evident both from the direct questioning on this element and from remarks made during discussions about other elements,

which repeatedly reinforced this interpretation. This was not surprising, as this perspective had already been strongly expressed in the semi-structured interviews.

In this context, participants frequently referred to the tension between the costs of implementing ESG measures and the benefits achieved through ESG implementation. This tension was especially highlighted by the focus group participants assigned to the job profile of project managers (Participants A, S, and P) in their discussions. Although a strong commitment to the implementation of ESG measures was evident among all participants, a clear distinction also emerged when it came to economic viability. This ambiguity, which Schanzenbach and Sitkoff (2020) describe as the distinction between a focus on collateral benefits on the one hand and the improvement of risk-adjusted returns on the other, was also a central topic in the discussions. For an ideal ESG measures integration, the focus should primarily be on collateral benefits. However, this approach is often challenged by economic considerations. In this regard as well, the results of the verification processes aligned with the relevant literature, which describes the tension particularly between environmental objectives and purely economic goals (Ochieng, 2008; Carvalho and Rabechini, 2017; Sabini *et al.*, 2019). This finding aligns with the research results concerning project success and ESG benefits. While the research participants in the semi-structured interviews strongly emphasised the importance of ESG measures, it became evident that profit generation remains at the core of project considerations.

Another aspect that repeatedly surfaced – albeit more on the sidelines of the discussions – was that of *market timing*. The following exemplary remarks illustrate this; for instance, Participant P, in the discussion about the tension between costs and benefits and the integration of ESG measures in recent regulatory developments, commented:

“I think it was about much more existential questions than about implementing a new, not yet tangible regulation.”

Participant Q, a sustainability manager, also addressed *market timing* in an entirely different context:

“The past years since 2022 have shown that, no matter how good the ESG strategy and the product are, a market shift like the one we’ve experienced

cannot be offset by ordinary project measures. There was nothing you could do.”

Participant B, a project and sustainability consultant, added his perspective on the interaction between regulation and ESG measures, also reflecting on market timing:

“In real estate development, other issues were more important. It was really about existential questions. It was more like: Will my company still exist next week? Then you focus more on economic issues, which is why [ESG considerations] moved a bit into the background.”

Based on Massey’s (2011) theory of emergent data, this side discussion on project success highlighted the significant role of *market timing*. Although unanticipated, this conversation about the recent market downturn confirmed the researcher’s prior assumptions and underscored how strongly participants perceived these shifts. As a result, it appears justified to adjust the element by giving *market timing* greater priority. Beyond reaffirming the emphasis on *economic viability* and *market timing*, participants saw no need for further changes – indicating the element’s relevance for real estate development. **Figure 6. 14** shows the updated, verified, and final version of element 6 on project success. The element contains the attributes *economic viability*, *market timing*, *iron triangle*, *meeting defined goals*, *address local needs*, *collateral benefits*, and *sustainability*.

Project success
- Economic viability - Market timing - Iron triangle (cost, time, quality) - Meeting defined goals - Address local needs - Collateral benefits - Sustainability

Figure 6. 14: Element 6 – Project success (final, verified version)

Source: Researcher (2026)

6.5.8 Verification and refinement of element 7: Review, control and adaptation process

The importance of the *iterative review and adaptation process* was emphasised and supported by all senior practitioners. In this context, the focus of the discussion was

particularly from the perspective of ESG integration. The key point was that it is necessary to continuously assess how the integration of ESG measures can be successfully achieved, thereby also building a certain level of knowledge that enables improved ESG integration in future projects. The discussions around the *iterative review and adaptation process* clearly revealed parallels to the discussions on the ESG company strategy and the attribute *knowledge* connected to the concept of double-loop learning (Argyris, 1977) (see **Section 6.5.2**). Not only was the importance of the *iterative review and adaptation process* emphasised, but there was also consensus on necessary adjustments. In two focus group sessions, it was discussed that the iterative process in the framework should also be applied between the individual development phases. Participant A noted:

"I believe that this iterative process should also involve continuous questioning within the individual project phases during project development."

Similarly, in session 2, Participants Q, G, and S discussed a necessary adaptation and arrived at the same conclusion. As a result, a corresponding adjustment was made in the visual representation of the framework. The *review and adaptation process* was also incorporated into the visual representation between the project phases to highlight its ongoing implementation throughout the project. This emphasises that continuous reflection and monitoring should be conducted throughout the project's duration. In addition to this adjustment, the discussions – particularly in session 1 with Participants A, C, J, and O, as well as in session 3 with Participants B, H, and P – revealed that a pure *review* of the process and integration success should also be subjected to a *control process*. These discussions were especially held in the context of certifications, transparency, and certified data. The main focus was on establishing a transparent way to verify to what extent ESG measures integration had been successfully implemented, or whether an adaptation of the process was necessary. To reflect this consensus on the need for adaptation, the term *control* was added both in the framework legend and in the textual labelling of the process. Element 7 is henceforth described as the *iterative review, control, and adaptation process*.

6.5.9 Development and verification of element 8: Policy and market

The discussions conducted across all three focus group sessions made it clear that it would be meaningful to expand the framework by adding an additional element. The conversations frequently revolved around an external level – a level encompassing market dynamics and market shifts, as well as legislation, regulation, and national and regional funding programmes.

This study clearly demonstrated how closely the real estate development process is intertwined with external processes. To highlight that the ESG measures integration framework also takes this external level into account, the researcher, building on the near-consensus discussions about the importance of integrating this external level, decided to expand the framework with a corresponding element. **Figure 6. 15** illustrates the eighth element of the framework dealing with *Policy & Market*, representing this external level. The attributes included are those frequently discussed and considered important both in the semi-structured interviews and in the three focus group discussions with the 10 participants. Specifically, these are *legislation*, *subsidies*, and *economic stability*.

Legislation is closely linked to the EU Taxonomy and national legislation, as already discussed in element 3. *Subsidies* address the complex funding landscape at national and local levels and are also closely connected to ESG benefits and project success, as they are considered an economic driver. *Economic stability* reflects the frequent statements by focus group participants about the significance of the broader macroeconomic context and its impact on individual real estate projects.

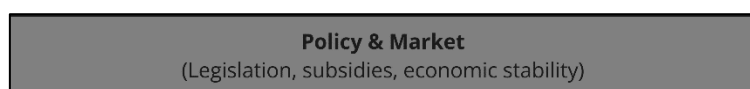


Figure 6. 15: Element 8 – Policy & Market (final, verified version)

Source: Researcher (2026)

6.6 Proposed and final ESG measures integration framework

The initial framework as presented in **Section 6.3.2** developed based on the literature-derived themes as presented in the conceptual framework (see **Figure 2. 3**) and the empirical findings

of this study. In the verification process the initial framework was verified and refined based on the focus group discussions. This section outlines how the objectives of the verification process were achieved.

The first objective was to present research findings from both the literature review and qualitative data. The framework integrates theoretical perspectives on ESG measure integration. For example, the contextual and subjective nature of ESG, discussed by Schanzenbach and Sitkoff (2020) and Hayat and Orsagh (2015), is addressed by incorporating flexibility for different project types and starting points. The framework reflects diverse perspectives from senior practitioners, thereby responding to the inherent subjectivity of ESG and addressing the literature's call to include practice-based insights (Lokuwaduge and Heenetigala, 2017; Sabini *et al.*, 2019). It also aligns areas of overlap between the literature and primary data – for instance, the understanding that ESG is not a unified concept but a collection of individual measures (Kempeneer *et al.*, 2021; Robinson and McIntosh, 2022; Newell *et al.*, 2023). Similarly, the importance of an overarching strategy and *iterative review, control, and adaptation process* is confirmed by both interviews and literature (Baumann and Müller, 2021; Kim and Chang, 2022). The framework draws on existing real estate development process models, particularly those presented by Diederichs (2003) and Schulte and Bone-Winkel (2008). It incorporates their process-based understandings and visualisations but extends them by making explicit how ESG measures can be integrated into the development process. In doing so, the framework does not replace existing process models but adapts and develops them for the specific purpose of ESG measures integration in real estate development. The verification process refined the framework further to enhance its practical value, illustrating how literature, interviews, and focus group findings collectively shaped its final form.

The second objective was to ensure the framework meets practical requirements in German real estate development. It was developed from 20 expert interviews and refined through insights from three focus group sessions with 10 senior practitioners. The inclusion of project managers, sustainability managers, and consultants enabled a multi-perspective examination. Emphasising *simplicity, flexibility*, and real-world project alignment helped ensure relevance and usability. Adjustments – such as integrating the *EU Taxonomy* and the refinement of the *iterative review, control, and adaptation process*, and updating elements

like ESG project strategy and project success – responded directly to practitioner feedback. Participants confirmed its practical value: Participant H noted its relevance for strategic consulting, Participant O suggested its use in internal workshops, and Participant S recommended it for daily development work.

A further objective of the verification process was to verify whether the proposed ESG measures integration framework is suitable for application in the everyday project work of real estate development companies. This objective was addressed by the discussion of the framework and its elements with experienced project practitioners. In the focus group discussions, the framework was initially presented by the researcher and then discussed jointly. This approach enabled the practitioners to assess its applicability, usability, and integration into their daily project processes. Moreover, the consistent positive feedback obtained regarding the framework's structure, the terminology used, and the presentation of the real estate development process verified its potential for application in everyday project work. Particularly considering the complex day-to-day situations in real estate development, the incorporation of key aspects such as *simplicity* and *flexibility* ensures that the framework can contribute to enhancing project success from an ESG perspective – without adding unnecessary complexity.

Finally, it was the objective to validate whether the framework meets the aim of the research study. This objective was achieved through a systematic triangulation of key insights obtained from the theoretical literature review, the semi-structured interviews, and the focus group discussions. Through this multi-stage process, overlaps with the existing literature could be identified, such as those relating to the nature and characteristics of ESG measures and the necessity of an iterative adaptation process. Additionally, new insights were uncovered, for example highlighting the particular importance of mindset and the heterogeneity of projects, aspects that have been less emphasised in the literature to date. Furthermore, it became evident that the representation of ESG measures and ESG benefits in the literature is significantly more comprehensive than what is commonly known or considered in practical reality. It was precisely through the multi-layered data collection and analysis process that these findings could be generated, thus contributing to achieving the aim of this study. Furthermore, the framework also serves to clearly address the research aim outlined in this research study. Through the elements concerning ESG measures and ESG

benefits included in the framework, a clear and concise illustration of the research findings on these two key topics is provided. Additionally, the framework offers a structured and accessible representation of how ESG measures can be integrated into the real estate development process, thereby contributing to project success. *Figure 6. 16* illustrates the final ESG measures integration framework proposed in this study.

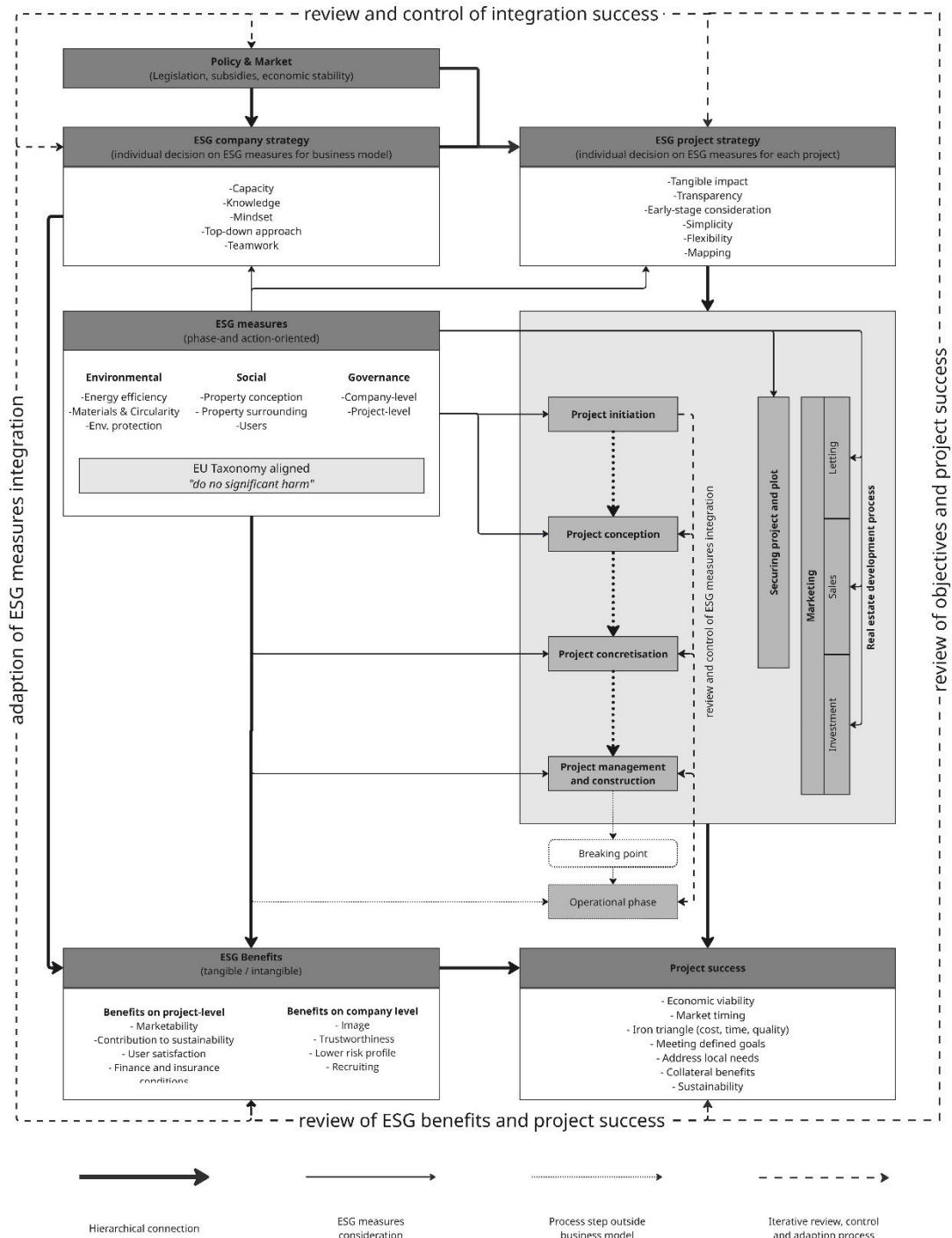


Figure 6. 16: Proposed and verified final ESG measures integration framework

Source: Researcher (2026)

6.7 Chapter summary

In this chapter, the criteria for developing the ESG measures integration framework were presented. It was explained in detail which elements the model consists of and how these are embedded in the research findings of this study. The initial framework was introduced comprehensively to provide the reader with a clear overview of its components and connections. Furthermore, the process of verifying research findings through focus group discussions was transparently outlined. Three focus group discussions, each with three to four participants, were conducted to verify the framework, assess its practical applicability, and refine it. The corresponding adjustments were described in detail, leading to the presentation of the proposed and final ESG measures integration framework. The focus group discussions confirmed the practical relevance of the framework. The next chapter provides the conclusion to this thesis, presenting the study's contributions as well as its limitations.

CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

In the preceding chapter, the development of the ESG measures integration framework was presented, along with the proposed final framework. This chapter highlights the key findings of this study and draws conclusions from these. Further, this chapter discusses contributions, the limitations and makes suggestions for future research.

7.2 Conclusions

This research was rooted in the fields of research surrounding ESG and real estate development. This study aimed to provide insights into the integration of ESG measures in German real estate projects. It became evident that, while there is extensive research on ESG within the real estate industry, the intersection between ESG and real estate development is relatively underrepresented. This research has contributed to closing this gap. The following sections explicitly address how the research questions of this study were met and what insights were gained.

7.2.1 Research Question 1: What are the key ESG measures applied to real estate development projects in Germany?

In answering the first research question, the aim is to determine which ESG measures are being applied in German real estate projects. For addressing this question, the insights of this study regarding the nature and perception of ESG are particularly relevant. It was found that there is no universal list of key ESG measures that can be applied to German real estate projects through a one-size-fits-all approach. Rather, the findings suggest that both the field of research and its practical application are diffuse and characterised by ambiguity. For example, it has been established that there is little consistent knowledge in practice regarding the overlaps and distinctions between ESG and sustainability. Even within the literature, ESG and sustainability are sometimes used interchangeably (Rezaee, 2016; Jebe, 2019; Keeris and Langbroek, 2019; Alsayegh *et al.*, 2020). Among the German real estate experts surveyed, ESG is often equated with the EU Taxonomy, although the latter, as a legislative framework for real estate projects, only prescribes environmental criteria. Nevertheless, the

fieldwork conducted in the context of this study revealed that an understanding of ESG measures beyond the EU Taxonomy is hardly widespread. Although the literature describes a variety of social and governance measures, these appear to be largely unknown among senior practitioners. Moreover, the study identified an inconsistent understanding of the term ESG measures. In academic literature, related terms such as ESG indicators, ESG criteria, ESG actions, ESG measures, and ESG principles are frequently used interchangeably, contributing to conceptual ambiguity. In practice, the application of these terms appears to be limited and inconsistent. Consequently, the study increasingly relied on the broader term "ESG measures" to collectively refer to these various concepts. The study also found that ESG is often used both as a concept and as an umbrella term. However, the research shows that this perspective is inadequate. Based on the findings of this study, it can be concluded that ESG is better understood as a collection of individual measures with environmental, social, and governance objectives. In this context, there is often no transparent allocation of a measure to one of the three areas. Some measures address all three dimensions simultaneously, or the objective of one measure may come at the expense of another. The blurring boundaries of ESG measures and the partially competing objectives have, to the best of the researcher's knowledge, been inadequately described in the literature so far – and have not yet been explicitly explored in the context of real estate development.

These findings are particularly relevant to the first research question because they clarify the conditions under which key ESG measures can be identified in the first place. As it was identified, that ESG is understood inconsistently in both the literature and practice, the answer to the research question cannot be reduced to a fixed or universally accepted catalogue of measures. Instead, the findings suggest that the identification of key ESG measures is shaped by how ESG is perceived, operationalised, and prioritised by practitioners within the German real estate development sector. This is important because a narrow understanding of ESG, for example its frequent reduction to the EU Taxonomy, risks overlooking relevant social and governance measures and thereby distorting the overall picture of ESG implementation in practice. The conceptual ambiguity outlined above is a central explanatory factor for understanding why certain measures are adopted while others remain absent. Establishing this interpretative foundation is essential for answering the research question in a differentiated and empirically grounded manner.

Building on the conceptual foundation, this study further examined individual measures within the three ESG pillars: environmental, social, and governance. Through a detailed analysis of 16 research studies from the real estate sector and related fields, clear matrices were created for each of the three areas. These matrices list all ESG measures mentioned in the studies and provide an overview of how frequently each measure is referenced. Within these matrices, sub-categories were created to group the respective measures. In some cases, these measures were further broken down into additional sub-measures. It was shown that there is no consistent delineation of the level of detail of ESG measures, nor a standardised categorisation. For instance, some publications describe biodiversity as a single measure, whereas other studies subsume a variety of more specific measures under this term. The insight gained here regarding the inconsistent application and discussion of ESG measures in the academic context is therefore also in line with the previously established understanding of the conceptual foundation of ESG. When this foundation is taken into account, this finding appears hardly surprising and may even be regarded as an almost necessary consequence.

A further point of convergence between literature findings and the collected data was found in terms of **environmental measures**. This pillar can be considered the most important within the context of German real estate projects. This is primarily due to the anchoring of environmental measures in the EU Taxonomy. It is therefore unsurprising that the environmental measures explicitly mentioned in the taxonomy – particularly the reduction of greenhouse gas emissions, reduction of energy consumption, and waste measurement and management – are perceived as the most important by practitioners and are also frequently discussed among scholars. In this regard, the findings from the fieldwork and the literature review are strongly aligned. Other measures, such as the reduction of light emissions, recovery of existing buildings, or the availability of green space, are mentioned only infrequently in both academic research and among senior practitioners and are therefore considered to be of lesser relevance. The environmental measures identified in the literature were grouped into six thematic areas: biodiversity, water, pollution prevention, energy and emissions, design and implications, and waste and materials (see *Table 2. 2*). This classification could not be reflected in the fieldwork, as a less broad list of environmental measures was identified with a focus on significantly fewer but relevant measures. These

findings are relevant to answering the research question because they indicate which environmental measures can be regarded as the most important in the context of German real estate development. The strong alignment between the literature and the fieldwork suggests that certain measures are not only conceptually prominent but also practically prioritised. At the same time, the more limited range of measures identified in the fieldwork shows that, in practice, the understanding of key environmental measures is concentrated around those measures that are most visible and linked to the EU Taxonomy. With regard to the research question to be answered here, it can therefore be concluded, in the context of environmental measures, that their categorisation as key measures can be derived from academic discourse, but is also shaped to a considerable extent by their anchoring in practitioners' perceptions and their application in practice, particularly in light of relevant legislation.

In contrast to the environmental measures, the picture regarding **social measures** proved to be significantly less clear. Neither in practice nor through the literature review could any specific measures be identified that are considered particularly relevant. Instead, it became generally apparent that a building, its users, and its surrounding environment must be brought into harmony. The design and conception of a property should be tailored to the needs of its intended users – whether residents, customers, office workers, etc. In addition, the surrounding environment must be taken into account and, ideally, the project should complement its surroundings rather than appear out of place. Otherwise, even negative effects on the project's success are conceivable, according to the findings of this study. In the literature review, six thematic areas were identified: community & municipality, health & well-being, design & implications, human rights, labour, and service. The social measures identified in this study are presented in *Table 2. 3*. Here, too, the grouping depicted from the previous theory could only be partially confirmed by the primary data collected. Here it was more conceptual than less thematic incorporations that could be derived. The wide range of social measures described in the literature appears to be largely unknown among senior practitioners. One possible reason for this is that social measures are not anchored in national or European legislation. Another reason may be that aspects such as human rights, which are frequently discussed in international publications, are considered less relevant in the context of German real estate development projects. These findings are directly relevant to answering the first research question because they show that, unlike environmental measures, key social measures cannot be identified through a similarly clear pattern. Rather than pointing to a small set of commonly recognised measures, the findings suggest that the

social pillar in German real estate development is understood more broadly and conceptually, with emphasis placed on the relationship between the building, its users, and its surrounding. This is important for answering the research question, as it indicates that the relevance of social measures is defined less by legislative anchoring and more by project-specific context, user needs, and local fit. At the same time, the limited overlap between the literature findings and practitioners' perceptions suggests that many social measures discussed in academic discourse have not yet become applied in practice. Consequently, the findings imply that, in the case of social measures, what counts as a key measure is less clearly established and more dependent on context within individual real estate projects.

Finally, the **governance measures** were also examined. Like the social measures, no governance measures could be identified as particularly significant for German real estate projects. In *Table 2. 4*, four governance topics were identified: management, staff, project management, and product & value. This classification could not be found at all in the data collected and analysed. This was more about which measures are relevant for real estate projects at all and where they are applied. It became evident that many governance measures are at least partially – if not entirely – attributable to the company-level of an organisation. As such, the application of specific governance measures, such as compensation policy or organisational culture, can only be addressed to a limited extent at the project-level. Other measures, such as business and market ethics or contractor relations, can be relevant at both the company and project-levels. Only a few governance measures – such as building certifications – can be applied exclusively at the project-level. Given that the interviewed senior practitioners are particularly familiar with the project-level, it is not surprising that many of the governance measures described in the literature were either unknown or only known to a limited extent. A key implication of these findings for the research question is that governance measures cannot be reduced to a clearly defined set of key measures at the project-level. Instead, the findings suggest that the relevance of governance measures depends heavily on the company-level at which they are located and implemented and that governance measures are only partially applicable to real estate development projects themselves. At the same time, the findings help to explain why governance measures appear less visible in practice and less consistently recognised by senior practitioners working primarily at the project-level. Consequently, the study findings indicate that the identification of key governance measures in German real estate development is constrained

not only by limited practitioner awareness, but also by the structural difficulty of distinguishing between company-level and project-level governance measures.

Taken together, the findings of this study indicate that the first research question cannot be answered through the development of a set of key ESG measures. Instead, the study demonstrates that the identification of key ESG measures in German real estate development depends on the specific characteristics of the three ESG dimensions, the way ESG is conceptually understood, and the extent to which individual measures are anchored in legislation, academic discourse, and professional practice. Environmental measures emerged as the most clearly defined and widely recognised, largely due to their institutionalisation through the EU Taxonomy and their strong presence in both the literature and practice. By contrast, social and governance measures proved to be less clearly established, more context-dependent, and in part less visible to practitioners, either because of their limited legislative anchoring or because of their stronger connection to the company-level rather than the project-level. Overall, the findings suggest that key ESG measures in German real estate projects are not fixed in universal terms, but must be understood as differentiated, context-sensitive, and shaped by both conceptual and practical conditions.

7.2.2 Research Question 2: What are the key benefits of ESG measures that can be adopted by project practitioners delivering real estate development projects in Germany?

The second research question of this doctoral thesis addresses the identification of key ESG benefits. In particular, it seeks to understand which advantages practitioners expect for their real estate projects from considering and integrating ESG measures into the development process. The findings suggest that the perception of ESG benefits is linked to the perceived relevance of ESG measures. The implementation of ESG measures embedded in the EU Taxonomy is associated with ESG benefits, whereas practitioners find the benefits of other ESG measures less apparent. The research findings emphasise that, just as with project success, the economic outcome of the project is the primary focus when it comes to ESG benefits. The findings of this research underscore the importance of the economic viability of real estate projects as the major contributor to project success. Additionally, from the perspective of German real estate development, delivering projects within the initially planned cost, time, and quality is considered the baseline for successful projects. Only after

the profitability of a real estate project can be determined are other success factors considered relevant.

The insights from this study suggest that ESG benefits can be both tangible and intangible and can have an impact at both the company and project-level. But the ESG benefits considered most relevant are the ones that are attributed to have an impact on the marketability of the project itself. However, it remains unclear whether the inclusion of ESG measures in the project creates a competitive advantage (green premium) or whether the omission of ESG measures leads to a competitive disadvantage (brown discount).

In addition to the improvements in marketability as the most relevant ESG benefit at the project-level, better finance and insurance conditions could also be identified as relevant. Further benefits at the project-level that are more intangible are the contribution to sustainability and the satisfaction of users. The study suggests that ESG benefits applied at the company-level tend to be more intangible. These include, in particular, an improved image, greater trustworthiness, a lower risk profile, and better talent recruitment.

Apart from this, a discrepancy was identified in the perception of ESG benefits compared to the prevailing literature. While the literature highlights a wide range of benefits – for instance, improved financial performance, increased tenant demand, lower default risks, cost improvements, and enhanced building attractiveness – it has become evident that, in practice, little of this is known or acknowledged. Based on the insights of this study, it can be argued that many measures which could be understood as ESG measures are not perceived as such in practice. As a result, the benefits associated with these measures are not recognised as ESG benefits. This is particularly true for social and governance measures such as transparent procurement processes, stakeholder participation, or community impact. Potential positive effects of incorporating these measures are not perceived as ESG benefits.

However, this does not imply that every ESG measure necessarily leads to corresponding ESG benefits. It became clear that only those ESG measures that can be monetised – whether through EU legislation, subsidies, or other financial mechanisms – result in tangible benefits. This once again highlights the close link between a project's profitability and its overall success. Measures that do not have a direct impact on profitability tend to be considered

secondary in the context of ESG benefits, with the focus shifting more towards intangible benefits. Some ESG measures may even result in no benefits at all or could have a negative impact on project success – especially when the additional costs associated with these measures are not offset by corresponding additional benefits. When the differing perceptions of ESG benefits are viewed through the lens of institutional theory, it can be concluded that some ESG measures are prioritised as a result of coercive pressure. In these cases, ESG benefits are generated through the requirements and incentives created by regulatory, legislative and funding institutions. Other ESG measures, however, may have a less direct connection to clearly identifiable ESG benefits, but are nevertheless implemented in response to normative pressure, for example through market expectations or stakeholder norms.

Taken together, the findings of this study suggest that the key ESG benefits for real estate projects lie in a broader combination of economic, operational, and reputational benefits. At the same time, the findings indicate that these benefits are not perceived equally across all ESG dimensions and are often interpreted through the practical priorities of project delivery. The research question can therefore be answered in the sense that key ESG benefits for real estate projects are primarily understood as those advantages that enhance project resilience, legitimacy, and long-term performance. An important implication of these findings is that the perceived benefit of ESG is closely linked to how practitioners understand and prioritise ESG within the development process. This means that ESG benefits should not be treated as universally fixed, but rather as context-dependent and shaped by regulation, market expectations, and project-specific objectives. Consequently, the findings underline that ESG integration in real estate development is not only a normative or compliance-driven exercise, but increasingly a strategic consideration with tangible implications for project success.

7.2.3 Research Question 3: How can ESG measures be effectively integrated into the development process of German real estate development projects to enhance project success?

In addressing the third and final research question of this study, the focus lies on ESG integration. More specifically, the question concerns how ESG measures can be integrated into the real estate development process in such a way that the project outcome can be positively influenced. In order to answer this question, two research objectives were defined. The first objective in connection with this research question is to examine which ESG

integration factors are relevant in the context of German real estate projects and the real estate development process in order to enhance project success. The second objective then comprises the proposal and verification of an ESG measures integration framework that can be applied in German real estate development.

This study generated important insights into the factors that need to be considered to effectively integrate ESG measures into the real estate development process. It was established that, for the identification of ESG integration factors, it is also essential to understand which challenges exist in the two fields of real estate development and ESG in relation to the research question. Only after a fundamental understanding had been developed of these challenges, such as the ambiguity of ESG measures, the complexity of ESG measures, and the heterogeneity of projects and organisations, was it possible to address the ESG integration factors. Although this study focussed on the development process and the project-level, its findings highlight the importance of considering the company-level to enhance the integration of ESG measures. Developing and providing an ESG company strategy was identified as crucial. Only if ESG measures are prioritised at the management level can they be operationalised at the project-level. Evidence from the fieldwork showed that, in the context of the company-level, an ESG-driven organisational culture also plays an important role in the effective integration of ESG measures. This is also linked to the provision by the organisation of the personnel, financial, and time resources required to address the ESG challenges identified above.

In relation to the project-level, important ESG integration factors could likewise be identified. It was found that the measurability of ESG measures, as well as the tangibility of the effects of a given measure, are important for their integration into the real estate development process. The study further showed that the integration of less tangible ESG measures appears to be more difficult than that of ESG measures that are more readily measurable. In addition, it has been determined that considering ESG measures at a very early stage is necessary to affect project success positively. Otherwise, negative effects may arise, or, at the very least, the optimal implementation of ESG measures may not be possible. Therefore, addressing ESG measures should occur as early as possible, ideally before the project begins. Further, the findings of this study suggest that effective ESG integration in

real estate development requires a process-oriented perspective that recognises the characteristics of the real estate development process and its individual development phases. At the same time, the study shows that effective ESG integration depends not only on transparency regarding the process structure, but also on preserving sufficient flexibility to respond to changing project conditions. In addition, the findings highlight that practical applicability requires a certain degree of simplicity, even though this aspect has so far received limited attention in the academic literature. Finally, the study demonstrates that ESG integration should be understood as an iterative process, requiring continuous review, adjustment, and refinement throughout the course of real estate development.

Building on these findings, the study then turned to the second research objective, namely the development and verification of an ESG measures integration framework for German real estate development. The insights gained in relation to the relevant ESG integration factors did not remain at a purely theoretical level, but directly informed the design of the framework. In this sense, the framework was developed as a practical response to the challenges and factors identified under the first objective, with the aim of translating these findings into a structured and applicable approach for integrating ESG measures into the real estate development process. Through the verification process with senior practitioners, it was ensured that the framework also meets the demands of day-to-day project practice. The framework not only encompasses a comprehensive project strategy and the real estate development process, including its project phases, but also incorporates external factors such as policy and market conditions. Additionally, it highlights key aspects of an ESG company strategy that are essential for the successful integration of ESG measures. The framework considers the key ESG measures identified in this study and demonstrates how they can be applied across the various project phases. This creates a direct link between ESG measures, ESG benefits, and ultimately project success.

7.3 Contributions of the study

This thesis aimed to contribute to the body of knowledge of ESG in the real estate industry and to provide an understanding of ESG measures and ESG benefits in real estate development in Germany. The theoretical, practical, methodological, and policy contributions of this DBA thesis will be outlined in the following sections.

7.3.1 Theoretical contributions

This study contributes to the theoretical understanding of ESG integration in real estate development by explaining how ESG measures, ESG benefits and integration factors are connected within a project-level and developer-focussed context. While ESG research has predominantly emerged from the fields of finance and investment, project-specific research within the real estate industry has been largely neglected (Eccles *et al.*, 2020; Kempeneer *et al.*, 2021; Newell, 2023a). Therefore, this study contributes to expanding the field of research on ESG and the real estate industry. The theoretical contributions of this study need to be understood in relation to the research aim and problem statement as outlined in **Chapter One**. The study addressed the limited understanding of how ESG measures can be integrated into the real estate development process from a project-level and developer-focussed perspective in ways that enhance project success. The theoretical contribution therefore lies not only in identifying relevant ESG measures, benefits and integration factors, but in explaining how these elements are connected within the specific context of German real estate development. The study contributes to ESG research, real estate development theory and selected aspects of institutional theory, stakeholder theory and paradox theory.

The **first theoretical contribution** lies in extending ESG research. Existing ESG research has predominantly focused on the company-level and portfolio-level and has often been finance-oriented and quantitatively driven. This study shifts attention towards a project-level and practitioner-focussed understanding of ESG integration. By focusing on the project-level and incorporating the practitioner perspective, the study directly addresses what has been described as a distance between academic research and the practitioner world, as well as a neglect of practitioners' perspectives in existing research. (Lokuwaduge and Heenetigala, 2017; Sabini *et al.*, 2019). Using the methodology applied in this study, the opinions, experiences, and perceptions of industry practitioners were brought into focus, thereby addressing the identified gap. By specifically taking the practitioners' perspective into account, valuable insights were gained into the handling of ESG measures – for example, that significantly more ESG measures are described in the literature than are considered relevant from the perspective of industry experts. Thus, this study confirms the gap between practical applications and research described in the literature and contributes to narrowing this gap by placing the practitioners' perspective at the centre of the analysis. While ESG-related research has primarily concentrated on investment vehicles, with real estate development projects largely neglected, this study specifically targets this previously

underexplored intersection. By focusing exclusively on real estate development, the study was able to identify differences in the perception and application of ESG measures. It contributed to the understanding that specific ESG measures can only be applied at either the project-level or the company-level. This means that studies primarily concerned with real estate funds or companies like Hayar *et al.* (2025) or Zheng and Lee (2025) take a different perspective. Insights gained at the project-level cannot simply be equated with those at the company-level.

Hence, this study contributes to ESG research by showing how ESG is understood, prioritised and implemented by practitioners involved in real estate development projects. It demonstrates that ESG integration is not simply a matter of applying ESG criteria to an existing asset or portfolio, but involves project-level decisions concerning measures, benefits, constraints and enabling factors. The study therefore extends ESG research by shifting attention from ESG as an investment or performance concept towards ESG as a practice-based integration issue in real estate development. In doing so, it contributes to a more differentiated understanding of ESG by showing that ESG measures must be examined in relation to the development process, the developer perspective and project success.

The research has also contributed to sharpening the understanding of ESG measures in their application within German real estate development. It was found that ESG is not a consolidated concept, but rather a collection of individual measures. Even though this is certainly not an entirely new insight and research tends to refer to individual measures (Kempeneer *et al.*, 2021; Robinson and McIntosh, 2022; Newell *et al.*, 2023) rather than an overarching ESG concept, there are still scholars who describe ESG as a coherent concept (Kostrikin and Andreeva, 2023; Wang and Wen, 2023), or speak of ESG-compliant buildings (Wagner *et al.*, 2022; Herkströter *et al.*, 2023; Straube, 2024). From the perspective of real estate development, this study has helped to clarify that such compliance is not realistically achievable. This is due in part to the lack of clarity around which measures should be considered ESG measures and how they should be implemented, measured, or evaluated. The study has shown that, in the context of German real estate projects, it is more appropriate to speak of taxonomy compliance as the EU Taxonomy has a significant impact on real estate projects and – unlike ESG measures – sets out specific, measurable targets.

The **second theoretical contribution** lies in extending real estate development theory. Real estate development process models have been extended by incorporating ESG measures, ESG benefits and ESG integration factors. While previous studies have focussed on ESG integration in equity portfolios (Bender *et al.*, 2017), by rating agencies (Escrig-Olmedo *et al.*, 2019), or in the investment process (Briand *et al.*, 2011; Aldowaish *et al.*, 2022), this study is among the first to consider the real estate development process explicitly. Existing real estate development process models provide important process-based understandings of development phases, activities and decision points (Healey, 1991; Diederichs, 2003; Schulte and Bone-Winkel, 2008). However, these models do not sufficiently explain how ESG measures can be selected, prioritised and integrated across the development process. This study builds on these process-based understandings and extends them by making explicit how ESG measures can be embedded into real estate development. The contribution does not lie in replacing existing development process models, but in adapting and developing them for the purpose of ESG measures integration. The proposed framework connects ESG measures with project phases, company-level and project-level strategies, ESG benefits, project success, review and control mechanisms, and external market and policy conditions. In this way, the study contributes to real estate development theory by conceptualising ESG integration as part of the development process itself. It therefore provides a process-centric explanation of how ESG can be integrated into real estate development projects.

It also contributes to a more holistic perception of the development process, rather than focusing solely on the construction phase or project management, as is commonly the case in existing research (Kim and Chang, 2022; Kyriakogkonas *et al.*, 2022; Hossain and Rahman, 2025). Through this comprehensive approach, the study demonstrates that ESG measures are relevant not only during construction, but also during earlier phases such as land acquisition and marketing, and even beyond project exit. Thus, this research highlights the importance of not limiting ESG considerations to individual project phases but instead examining the entire development process as an integrated whole.

The **third theoretical contribution** of this study lies in explaining ESG integration through institutional, stakeholder and paradox perspectives. This provides a theory-informed

explanation of why ESG integration in real estate development remains difficult at the project-level.

The findings show that ESG integration is shaped by coercive and normative pressures. Coercive pressure arises from European and national legislation, funding requirements and financing conditions. Normative pressure arises from market expectations, investor requirements and broader stakeholder expectations. These pressures influence which ESG measures are perceived as relevant and which benefits are recognised by practitioners. The contribution to institutional theory lies in showing that these pressures do not automatically lead to ESG integration at the project-level. Instead, they must be interpreted and operationalised by developers within the real estate development process. The study therefore contributes to institutional theory by showing how institutional ESG pressures are translated into project-level decisions and practices. The study thus extends institutional theory by demonstrating how coercive and normative pressures shape ESG measures integration at the project-level.

A further contribution relates to stakeholder theory. Real estate development involves multiple actors, including developers, investors, planners, consultants, contractors, tenants, authorities and wider public stakeholders. These actors may have different interests, expectations, responsibilities and levels of influence. The findings show that ESG integration depends not only on identifying relevant ESG measures, but also on coordinating these different interests across the development process. The study contributes to stakeholder theory by showing that ESG integration in real estate development should be understood as a stakeholder coordination issue. Developers occupy a central role because they must connect ESG objectives with the expectations of these stakeholders. At the same time, stakeholder interests may diverge, particularly where ESG objectives affect cost, time, quality or other project success determinants. The study therefore extends stakeholder theory in the context of real estate development by showing that stakeholder coordination is a necessary condition for the project-level integration of ESG measures.

The study also theoretically contributes to paradox theory. The findings show that ESG integration is shaped by tensions between ESG objectives and established project constraints. These tensions include the relationship between ESG ambitions and cost,

between long-term value and short-term project feasibility, and between broader stakeholder expectations and the economics of real estate development. ESG integration therefore cannot be understood simply as the alignment of compatible objectives. The study contributes to paradox theory by showing that ESG integration requires the management of competing but interrelated demands. ESG measures may contribute to project success through tangible and intangible benefits, but they may also create tensions with profitability, timing, risk and marketability. The theoretical contribution lies in conceptualising ESG integration as an ongoing balancing process rather than a linear implementation task. This helps explain why ESG measures are more likely to be prioritised where their benefits are clear, while measures with less direct or less measurable benefits remain more difficult to integrate. In this way, the study extends the theoretical understanding of ESG integration by showing that project success in ESG-oriented real estate development involves managing persistent tensions.

Taken together, these three contributions show that the study does not contribute only by proposing a practical ESG measures integration framework. Its theoretical contribution lies in conceptualising ESG integration in real estate development as a project-level operationalisation process. This process is shaped by ESG concepts, real estate development process structures, institutional pressures, stakeholder coordination and paradoxical tensions between ESG and economic objectives. The study therefore addresses the research gap by explaining how ESG measures, ESG benefits and integration factors can be connected within the real estate development process to enhance project success.

7.3.2 Practical contributions

The insights from this study enable real estate developers to understand better which ESG measures are particularly relevant for real estate projects in Germany, and which are of lesser importance. This research enables real estate developers to establish clear connections between ESG measures and their corresponding benefits, thereby gaining a deeper understanding of which ESG measures contribute to project success and which do not. By understanding which ESG measures lead to tangible or intangible benefits at the project or company-level, practitioners can allocate their resources more effectively and in a more targeted manner.

Moreover, the industry is provided with an ESG measures integration framework developed based on the insights, experiences, and perceptions of industry experts and verified in collaboration with them. By anchoring this framework within the individual phases of the development process, from land acquisition through the construction phase and beyond the exit, this framework contributes to optimising the integration of ESG measures at each stage in a way that enhances the project success of German real estate projects.

The findings of this study suggest that practitioners should consider ESG measures as early as possible in the development process. Based on the study results, it is furthermore recommended that real estate developers consider the company-level. Without a corresponding anchoring of the ESG strategy at the company-level – supported by an appropriate organisational culture and sufficient capacity – successful ESG integration cannot be achieved.

7.3.3 Methodological contributions

Newell (2023a) argued that the qualitative research methods employed in this study can lead to new insights in the real estate sector. The findings of this study confirmed the relevance of using qualitative methods in the otherwise predominantly quantitatively driven research landscape of the real estate industry. Through the application of a two-stage qualitative research design, the experiences, beliefs, and conception of real estate experts could be captured. Based on these findings, this study contributes methodologically by proposing an ESG measures integration framework tailored to the real estate development process in Germany – an area where prior empirical frameworks were lacking.

The qualitative research methods employed in this study – specifically, semi-structured interviews and focus groups – significantly contributed to a more nuanced understanding of ESG measures. Conducting semi-structured interviews provided a deeper knowledge of ESG measures and their application in the real estate industry. The use of these qualitative methods enabled the exploration of new elements and relationships, such as the relevance of organisational culture, the necessity of a top-down approach, or the requirement for flexibility and simplicity in ESG measures' application, that might not have been captured through a purely quantitative study. Especially, the use of focus groups proved to be a highly effective method for conducting a kind of quality control of the research findings through

the involvement of study participants. The group discussions helped minimise potential researcher bias and ensured that no individual opinions were disproportionately weighted. This study has therefore also contributed to confirming the use of qualitative research methods within real estate research and highlighting their relevance.

In this study, data collection for the semi-structured interviews and focus group discussions was conducted exclusively online. While this is not a novel approach in qualitative research, the advantages described in the literature (Kerr and Murthy, 2004; Morse, 2015; de Villiers *et al.*, 2022; Poliandri *et al.*, 2023) were confirmed. The online format enabled participation of experts from the German real estate industry across the country and abroad, eliminating the need for travel. This research thus confirms the applicability of online data collection for qualitative research projects, particularly when participants are interviewed in the context of their professional activities and have limited time availability.

7.3.4 Policy contributions

By anchoring this research project in the context of German real estate development, this study provides essential insights for policy decision-makers into how ESG measures are perceived and applied within German real estate development. The study highlights the close interconnection between the financial and capital markets, on the one hand, and legislation, on the other. It helps to understand how market pressure leads to the increasing incorporation of ESG measures into real estate projects. Furthermore, the study demonstrates how EU-level legislation plays a decisive role in determining which ESG measures are considered relevant in German real estate development since only environmental criteria are currently embedded in the legislation these are prioritised, while social and governance measures tend to be neglected.

The study also contributes to understanding that there is no uniform definition of ESG measures and that the EU Taxonomy is often used almost synonymously with ESG. At the same time, this research clearly shows that this equivalence is misleading and that there are significantly more ESG measures than those recognised by legislators or regulatory authorities.

Additionally, this study also clearly demonstrates how strongly legislation, and the behaviour of financial and capital markets influence the decisions of real estate developers: only those ESG measures are implemented in projects that are appropriately rewarded. This also shapes the perception of project success in the context of ESG. ESG measures are typically only adopted when they provide a benefit to the project – such as through access to subsidies or public funding. This key insight can support policymakers in aligning future legislation or funding programmes more effectively with the practical ESG needs of the real estate sector.

7.4 Study limitations

The following sub-sections address the limitations of this study in terms of the chosen methodology, validation, the selected context and the dynamics of the research field. As the limitations affect the interpretation, transferability and validation of the research findings, it is important to acknowledge them explicitly.

7.4.1 Qualitative research

This study was based on an interpretivist research philosophy. This means that, to answer the research questions, it was crucial to capture the personal opinions, perceptions, and experiences of the research participants. To arrive at the corresponding research findings, the methodology of this research project involved identifying patterns and themes, which are subject to the researcher's interpretations.

Therefore, a key limitation of this study is that its findings are interpretive in nature and depend partly on the researcher's analytical judgement in identifying patterns and themes. The results should therefore be understood as contextually grounded interpretations rather than objectively verifiable or universally replicable facts (Mwita, 2022). Even though the assumptions made by the researcher to objectify the respective research findings were described in detail and data triangulation was carried out, it cannot be ruled out that the identified elements may be reflected differently in other contexts or future research projects. By conducting further research studies or projects using a similar research design – or intentionally employing different designs, such as surveys – the relationship between ESG measure integration and project success could be further explored. This study employed a

cross-sectional research design, which involves surveying research participants at a specific point in time. A longitudinal research design may yield different insights, particularly regarding the dynamics of the research field.

Additionally, as it is typical for qualitative research, a relatively small sample of participants was selected for the semi-structured interviews and focus groups. Consequently, one of the limitations of qualitative research is its lower generalisability (Vasileiou *et al.*, 2018). This study relies exclusively on the opinions, experiences, and perceptions of the 20 participants in the semi-structured interviews and the 10 participants in the focus groups. As only project managers, sustainability managers, and project consultants have participated in the data collection, broader generalisability to different contexts is not entirely feasible (Busetto *et al.*, 2020). Accordingly, the findings of this study are not statistically generalisable and should not be interpreted as representative of the entire German real estate sector. Rather, their value lies in the depth of insight they provide into how senior practitioners perceive and address ESG integration. Since the aim of this study was to gain an in-depth understanding of ESG integration from the perspective of senior practitioners, it would not have been appropriate – due to time and cost constraints – to include a significantly larger number of research participants within the scope of this doctoral thesis. It was precisely this intensive engagement with the participants that enabled the valuable insights into ESG integration. Increasing the number of participants might have come at the expense of research depth. Therefore, future research studies could aim for further exploration and extend the research focus to additional professional groups to investigate the research contributions and validity of the findings from different perspectives, such as contractors, municipality, or other external stakeholders. Moreover, building on the findings of this study, future quantitative research could be conducted to develop hypotheses about key ESG integration factors and test them using quantitative methods to achieve a higher degree of generalisability.

All participants in this study were employed by companies in the real estate sector. Although efforts were made during both the interviews and focus groups to ensure a pleasant and open atmosphere – and participants generally shared their views and assessments very openly – it cannot be ruled out that they may have been influenced by their companies' internal guidelines or made statements that portrayed themselves or their organisations in a more

favourable light. This introduces a further limitation, as some responses may have been shaped by organisational interests, professional roles, or reputational considerations rather than reflecting entirely unconstrained personal views.

7.4.2 Validation

The proposed framework was verified through three focus group discussions with 10 participants in total. This verification provided important insights into the framework's clarity, understandability and practical applicability. However, verification should not be equated with validation. A further validation of the framework would be necessary to validate the research findings objectively. A key limitation of this study is therefore that, although the framework was verified by practitioners, it was not validated through application in real-world project settings. Therefore, the framework needs to be tested in different organisations, projects, and contexts over a more extended period. The framework needs to be applied in various day-to-day project situations to assess and validate its practical applicability critically. This kind of extensive validation was not feasible within the scope of this research project, as this phase of data collection would have to examine the whole development process which spans over multiple years. Therefore, it cannot be ruled out that further adjustments may be necessary when the framework is applied in practice. Accordingly, the framework should be understood as an empirically informed and practitioner-verified framework, but not as a fully validated model whose effectiveness has already been comprehensively demonstrated in practice.

7.4.3 Limited focus on real estate development in Germany

This study focuses exclusively on the German real estate development market. While EU regulations influence the entire European economic area, the findings of this study cannot be fully generalised to other markets. A clear limitation of the study is therefore its context-specificity. The findings should be transferred to other national markets, regulatory systems, or development environments only with caution. As the EU legislation affects real estate markets across Europe, it may be valuable to explore ESG integration in further European countries to align findings with this research project.

Furthermore, this study specifically examines the business model of trader-developers. Although this business model is highly relevant to the real estate development market in Germany, the applicability of the study's findings to other business models is limited. This means that the conclusions drawn in this thesis cannot automatically be assumed to apply to other forms of real estate development companies. While the focus on trader-developers was appropriate for the purposes of this study, expanding the scope to include other business models – such as service-developers or investor-developers – could provide an opportunity to examine the reliability and generalisability of the research findings within other research contexts.

7.4.4 Dynamics of the research field

As discussed in detail in the literature review of this study, the research field surrounding ESG is highly dynamic. This is partly because ESG, as a topic within the financial and real estate sectors, is still relatively young, and academic engagement with it has only recently intensified. Additionally, legislation and regulations related to ESG measures are constantly evolving and are influenced by political debates. Although the literature review of this study has been continuously updated over the past four years, incorporating new research articles and regulatory developments, a limitation remains in the validity of this study regarding future dynamics. The findings of this thesis therefore reflect the state of ESG discourse, regulation, and practice during the specific period in which the research was conducted. As these conditions are subject to ongoing change, some of the conclusions may become less applicable over time or may require revision in light of future developments.

7.5 Future research

Building on the limitations outlined in *Section 7.4*, several directions for future research can be identified. These directions arise directly from the methodological, contextual, and validation-related limitations of this study.

- **Validation**
A large-scale validation project could serve both to confirm the validity of this research and to generate important insights into its practical applicability. By involving a diverse range of companies and professional groups, and by applying the

framework across various project types – such as existing buildings and new developments, office and residential projects, and urban and rural settings – the framework's flexibility could be critically tested. Furthermore, through repeated application, it could be assessed to what extent the iterative review, control, and adaptation process outlined in this study is suitable for continuously adjusting the framework to specific project situations.

- **Methodological extension:**

Future research studies could investigate the integration of ESG measures using different methods and research designs. For example, a quantitative approach involving surveys could include a larger group of senior practitioners and allow for the testing of hypotheses derived from this study. This could generate broader and more robust insights based on a wider participant base. A longitudinal research design could be used to reflect the findings of this thesis about long-term developments. This study has demonstrated the importance of incorporating the perspectives and experiences of practitioners. A longitudinal approach would allow researchers to examine how experience accumulates over time and how perspectives may evolve, thereby providing additional insights into ESG integration.

- **Broader sample:**

The research focus could be expanded to include other professional groups, beyond the selected sample of project managers, sustainability managers and project consultants. This study highlighted the importance of teamwork and the consideration of stakeholder interests in project work. Investigating the perspectives of building users, contractors, or other stakeholders could help contrast different understandings of ESG benefits and project success.

- **Contextual extension:**

It was identified that the national context plays a crucial role in the acceptance and implementation of ESG measures. In this regard, conducting further research in other countries, both within and outside the European Union, would be highly valuable. In particular, studies outside the EU could provide additional insights into the interconnectedness of the EU Taxonomy and ESG measures.

- Business model extension:

Finally, this research primarily focussed on the business model of trader-developers. However, it also allows for the conclusion that other business models, such as that of investor-developers, may enable a more effective or at least different approach to ESG measures. This is because their business model extends to the holding period of the assets, allowing them to benefit from ESG advantages that become evident over time. This interpretation should be treated with caution, as it was not the primary focus of the present study. Further research would therefore be needed to examine ESG integration across different business models and to assess whether and how their structural characteristics influence the implementation and benefits of ESG measures.

Taken together, these avenues for future research would help to test the transferability, practical applicability, and long-term validity of the findings presented in this thesis.

LIST OF REFERENCES

- Adams, R.B., Licht, A.N. and Sagiv, L.** (2011) ‘Shareholders and stakeholders: How do directors decide?’, *Strategic Management Journal*, 32(12), pp. 1331–1355. Available at: <https://doi.org/10.1002/smj.940>.
- Addae-Dapaah, K., Hiang, L.K. and Neo Yen Shi, S.** (2009) ‘Sustainability of Sustainable Real Property Development’, *Journal of Sustainable Real Estate*, 1(1), pp. 203–225.
- Adebayo, A. and Ackers, B.** (2024) ‘Managing Trade-Offs Between Environmental, Social, Governance and Financial Sustainability in State-Owned Enterprises: Insights from an Emerging Market’, *Australian Accounting Review*, 34(1), pp. 55–73. Available at: <https://doi.org/10.1111/auar.12415>.
- Adobor, H. and McMullen, R.** (2007) ‘Supplier diversity and supply chain management: A strategic approach’, *Business Horizons*, 50(3), pp. 219–229. Available at: <https://doi.org/10.1016/j.bushor.2006.10.003>.
- Agyekum-Mensah, G., Knight, A. and Coffey, C.** (2012) ‘4Es and 4 Poles model of sustainability Redefining sustainability in the built environment’, *Structural Survey*, 30(5), pp. 426–442. Available at: <https://doi.org/10.1108/02630801211288206>.
- Agyemang, E.A., Musonda, I. and Zulu, S.** (2025) ‘Stakeholder theory and shareholder theory application in construction field: systematic scoping review’, *Construction Economics and Building*, 25(2). Available at: <https://doi.org/10.5130/AJCEB.v25i2.9346>.
- Ahn, Y.H., Pearce, A.R., Wang, Y. and Wang, G.** (2013) ‘Drivers and barriers of sustainable design and construction: The perception of green building experience’, *International Journal of Sustainable Building Technology and Urban Development*, 4(1), pp. 35–45. Available at: <https://doi.org/10.1080/2093761X.2012.759887>.
- Akbari, S., Sheikhhoshkar, M., Pour Rahimian, F., El Haouzi, H.B., Najafi, M. and Talebi, S.** (2024) ‘Sustainability and building information modelling: Integration, research gaps, and future directions’, *Automation in Construction*, 105420(163). Available at: <https://doi.org/10.1016/j.autcon.2024.105420>.
- Akin, I. and Akin, M.** (2024) ‘Promoting sustainable practices through green investments in the United Kingdom real estate industry’, *Sustainable Development*, pp. 1–19. Available at: <https://doi.org/10.1002/sd.3194>.

- Akomea-Frimpong, I., Agar, C.E., Alidu, A.-R., Yaa Ohenewaa-Ayisi, M., Baah, B., Oduro, S., Acheampong, M.O., Konadu, E.A., Emmanuel, M., Arimiyaw, D., Tumpa, R.J., Kuutiero, R.M., Ghanbaripour, A.N. and Boadi, C.** (2024) ‘A Literature Review of Environmental, Social and Governance (ESG) Indicators in the Construction Industry’. Available at: <https://doi.org/10.20944/preprints202408.0203.v1>.
- Alamillos, R.R. and de Mariz, F.** (2022) ‘How Can European Regulation on ESG Impact Business Globally?’, *Journal of Risk and Financial Management*, 15(7). Available at: <https://doi.org/10.3390/jrfm15070291>.
- Alasco** (2022) *Wettbewerbsfaktor Nachhaltigkeit: ESG in Immobilienprojekten*. Munich, GER.
- Aldowaish, A., Kokuryo, J., Almazyad, O. and Goi, H.C.** (2022) ‘Environmental, Social, and Governance Integration into the Business Model: Literature Review and Research Agenda’, *Sustainability*, 14(5), pp. 1–20. Available at: <https://doi.org/10.3390/su14052959>.
- Al-haimi, B., Khalid, H., Zakaria, N.H. and Jasimin, T.H.** (2025) ‘Digital transformation in the real estate industry: A systematic literature review of current technologies, benefits, and challenges’, *International Journal of Information Management Data Insights*, 5(1), p. 100340. Available at: <https://doi.org/10.1016/j.jjime.2025.100340>.
- Aliyu, A.A., Usman, H. and Alhaji, M.U.** (2015) ‘Real Estate Developers’ Perception on Conventional Borrowing in Financing Residential Developments: A Review of Emerging Literature’, *International Journal of Economics and Finance*, 7(7). Available at: <https://doi.org/10.5539/ijef.v7n7p240>.
- Almeida, M., Ascione, F., Iovane, T., Mastellone, M. and Mateus, R.** (2024) ‘Impact of life cycle assessment analysis on energy efficiency projects in Mediterranean residential buildings’, *Energy*, 295, p. 130994. Available at: <https://doi.org/10.1016/j.energy.2024.130994>.
- Alsayegh, M.F., Rahman, R.A. and Homayoun, S.** (2020) ‘Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure’, *Sustainability (Switzerland)*, 12(9). Available at: <https://doi.org/10.3390/su12093910>.
- Aluchna, M. and Roszkowska-Menkes, M.** (2019) ‘Integrating Corporate Social Responsibility and Corporate Governance at the Company Level. Towards a Conceptual Model’, *Engineering Economics*, 30(3), pp. 349–361. Available at: <https://doi.org/10.5755/j01.ee.30.3.17511>.

Alzyood, M., Aveyard, H., Brooke, J.M. and Jackson, D. (2020) ‘The use of focus group data from countries with linguistic differences: A discussion of methodological and pragmatic issues’, *Nurse Research*, 1(17), pp. 17–24.

Ambituuni, A., Osobajo, O.A., Kamudyariwa, X.B. and Adu, D.A. (2025) ‘Project-Based Enactment of Circular Economy (CE) Business Models: A Systematic Literature Review of the CE–Project Research Nexus’, *Business Strategy and the Environment* [Preprint]. Available at: <https://doi.org/10.1002/bse.70143>.

An, X. and Pivo, G. (2020) ‘Green Buildings in Commercial Mortgage-Backed Securities: The Effects of LEED and Energy Star Certification on Default Risk and Loan Terms’, *Real Estate Economics*, 48(1), pp. 7–42. Available at: <https://doi.org/10.1111/1540-6229.12228>.

Antal, A.B., Oppen, M. and Sobczak, A. (2009) ‘(Re)discovering the Social Responsibility of Business in Germany’, *Journal of Business Ethics*, 89(S3), pp. 285–301. Available at: <https://doi.org/10.1007/s10551-010-0390-8>.

Appraisal Institute (2013) ‘The Appraisal of Real Estate’, *The Appraisal of Real Estate*, 14, pp. 1–847.

Argyris, C. (1977) ‘Double loop learning in organizations’, *Harvard Business Review*, pp. 115–127.

Armenia, S., Dangelico, R.M., Nonino, F. and Pompei, A. (2019) ‘Sustainable Project Management: A Conceptualization-Oriented Review and a Framework Proposal for Future Studies’, *Sustainability*, 11(9), p. 2664. Available at: <https://doi.org/10.3390/su11092664>.

Arocena, P., Orcos, R. and Zouaghi, F. (2021) ‘The impact of ISO 14001 on firm environmental and economic performance: The moderating role of size and environmental awareness’, *Business Strategy and the Environment*, 30(2), pp. 955–967. Available at: <https://doi.org/10.1002/bse.2663>.

Atkinson, R. (1999) ‘Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria’, *International Journal of Project Management*, 17(6), pp. 337–342. Available at: [https://doi.org/10.1016/S0263-7863\(98\)00069-6](https://doi.org/10.1016/S0263-7863(98)00069-6).

Aubry, M., Boukri, S. El and Sergi, V. (2021) ‘Opening the Black Box of Benefits Management in the Context of Projects’, *Project Management Journal*, 52(5), pp. 434–452. Available at: <https://doi.org/10.1177/87569728211020606>.

Auer, U. (2022) ‘Ohne die Evolution des Wertesystems kein nachhaltiges ESG’, *Fondsforum - ESG kompakt*, pp. 6–9.

Autio, P., Pulkka, L. and Junnila, S. (2023) ‘Creating a strategy framework for investor real estate management’, *Journal of European Real Estate Research*, 1753–9269, pp. 1–20. Available at: <https://doi.org/10.1108/JERER-09-2022-0027>.

AuYong, H.N., Yip, C.Y., Woo, K.H. and Senadjki, A. (2018) ‘The Dynamics of Housing Prices in Malaysia: Findings from Focus Group Discussions’, *MATEC Web of Conferences*, 150, p. 05088. Available at: <https://doi.org/10.1051/mateconf/201815005088>.

Ayuso, S., Rodríguez, M.A., García-Castro, R. and Ariño, M.A. (2014) ‘Maximizing Stakeholders’ Interests’, *Business & Society*, 53(3), pp. 414–439. Available at: <https://doi.org/10.1177/0007650311433122>.

Baccarini, D. (1999) ‘The Logical Framework Method for Defining Project Success’, *Project Management Journal*, 30(4), pp. 25–32. Available at: <https://doi.org/10.1177/875697289903000405>.

Backes, J.G. and Traverso, M. (2021) ‘Life Cycle Sustainability Assessment—A Survey Based Potential Future Development for Implementation and Interpretation’, *Sustainability*, 13(24), p. 13688. Available at: <https://doi.org/10.3390/su132413688>.

Baldenius, T., Kohl, S. and Schularick, M. (2020) ‘The new housing question. Winners and losers in times of the german housing boom’, *Leviathan (Germany)*, 48(2), pp. 195–236. Available at: <https://doi.org/10.5771/0340-0425-2020-2-195>.

Banerjee, A., Das, P. and Fuerst, F. (2024) ‘Are green and healthy building labels counterproductive in emerging markets? An examination of office rental contracts in India’, *Journal of Cleaner Production*, 455, p. 141838. Available at: <https://doi.org/10.1016/j.jclepro.2024.141838>.

Bansal, P., Bertels, S., Ewart, T., MacConnachie, P. and O’Brien, J. (2012) ‘Bridging the Research–Practice Gap’, *Academy of Management Perspectives*, 26(1), pp. 73–92. Available at: <https://doi.org/10.5465/amp.2011.0140>.

Barrett, S., Stewart, M. and Underwood, J. (1978) *The land market and the development process*. Bristol.

Bassen, A. and Kovács, A.M. (2008) ‘Environmental, social and governance key performance indicators from a capital market perspective’, *Zeitschrift für Wirtschafts- und Unternehmensethik*, 9(2), pp. 182–192. Available at: www.ssoar.info (Accessed: 27 February 2023).

Bătae, O.M., Dragomir, V.D. and Feleagă, L. (2020) ‘Environmental, social, governance (ESG), and financial performance of European banks’, *Journal of Accounting and*

Management Information Systems, 19(3). Available at: <https://doi.org/10.24818/jamis.2020.03003>.

Bauer, R., Eichholtz, P. and Kok, N. (2010) ‘Corporate Governance and Performance: The REIT Effect’, *Real Estate Economics*, 38(1), pp. 1–29. Available at: <https://doi.org/10.1111/j.1540-6229.2009.00252.x>.

Baumann, R. and Müller, J. (2021) ‘Praxiserfahrungen zur Entwicklung und Implementierung von Nachhaltigkeitsstrategien’, in T. Veith, C. Conrads, and F. Hackelberg (eds.) *ESG in der Immobilienwirtschaft*. Freiburg: Haufe-Lexware, pp. 377–396.

Bell, R. and Bell, M.P. (2015) ‘Real Estate Research Methods’, *The Appraisal Journal*, 83(4), pp. 310–318.

Bender, J., Bridges, T., He, C. and Lester, A. (2017) ‘A Blueprint for Integrating ESG into Equity Portfolios’, *The Journal of Investment Management*, 16(1). Available at: <https://ssrn.com/abstract=3080381>.

Berrone, P., Fosfuri, A., Gelabert, L. and Gomez-Mejia, L.R. (2013) ‘Necessity as the mother of “green” inventions: Institutional pressures and environmental innovations’, *Strategic Management Journal*, 34(8), pp. 891–909. Available at: <https://doi.org/10.1002/smj.2041>.

Bezerra, R.R.R., Martins, V.W.B. and Macedo, A.N. (2024) ‘Validation of Challenges for Implementing ESG in the Construction Industry Considering the Context of an Emerging Economy Country’, *Applied Sciences (Switzerland)*, 14(14). Available at: <https://doi.org/10.3390/app14146024>.

Biasin, M., Delle Foglie, A. and Giacomini, E. (2024) ‘Addressing climate challenges through ESG-real estate investment strategies: An asset allocation perspective’, *Finance Research Letters*, 63, p. 105381. Available at: <https://doi.org/10.1016/j.frl.2024.105381>.

Bienert, S. (2016) *METASTUDIE: NACHHALTIGKEIT CONTRA RENDITE? Die Implikationen nachhaltigen Wirtschaftens für offene Immobilienfonds am Beispiel der Deka Immobilien Investment GmbH und der WestInvest GmbH*. Regensburg. Available at: www.irebs.de.

Bienert, S. and Ansari, N. (2017) *CORPORATE GOVERNANCE ALS TREIBER DER UNTERNEHMENSPERFORMANCE*. Dusseldorf and Regensburg.

Billio, M., Costola, M., Hristova, I., Latino, C. and Pelizzon, L. (2021) ‘Inside the ESG ratings: (Dis)agreement and performance’, *Corporate Social Responsibility and*

Environmental Management, 28(5), pp. 1426–1445. Available at: <https://doi.org/10.1002/csr.2177>.

Blaszke, M., Oleńczuk-Paszal, A., Sompolska-Rzechuła, A. and Śpiewak-Szyjka, M. (2024) ‘Demographic Change and the Housing Stock of Large and Medium-Sized Cities in the Context of Sustainable Development’, *Sustainability*, 16(24), p. 10907. Available at: <https://doi.org/10.3390/su162410907>.

Blinova, E., Ponomarenko, T. and Knysh, V. (2022) ‘Analyzing the Concept of Corporate Sustainability in the Context of Sustainable Business Development in the Mining Sector with Elements of Circular Economy’, *Sustainability*, 14(13), p. 8163. Available at: <https://doi.org/10.3390/su14138163>.

Blokpoel, S.B., Reymen, I. and Dewulf, G. (2005) ‘Uncertainty management in Real Estate Development: Studying the potential of SCRUM design methodology’, *International Conference on Innovation in Architecture, Engineering and Construction*. Rotterdam: AEC.

BMWK (2022) *BMWK - Förderung für energieeffiziente Gebäude der KfW vorläufig gestoppt - Bundesregierung ordnet Förderung und gesetzliche Standards für Neubau neu*. Available at: <https://www.bmwk.de/Redaktion/DE/Meldung/2022/20220124-foerderung-fur-energieeffiziente-gebäude-durch-kfw.html> (Accessed: 28 December 2024).

BMWSB (2025) *Bau-Turbo trifft Praxis: Auftakt zum Umsetzungslabor mit Bundesbauministerin Verena Hubertz, Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen*. Available at: <https://www.bmwsb.bund.de/SharedDocs/pressemitteilungen/DE/2025/10/Bau-Turbo-umsetzungslabor.html?nn=42910> (Accessed: 16 February 2026).

Boffo, R. and Patalano, R. (2020) ‘ESG Investing: Practices, Progress and Challenges’, *OECD Paris*, www.oecd.org/finance/ESG-Investing-Practices-Progress-and-Challenges.pdf [Preprint].

Bogna, F., Raineri, A. and Dell, G. (2020) ‘Critical realism and constructivism: merging research paradigms for a deeper qualitative study’, *Qualitative Research in Organizations and Management: An International Journal*, 15(4), pp. 461–484. Available at: <https://doi.org/10.1108/QROM-06-2019-1778>.

Bone-Winkel, S. (1994) ‘Das strategische Management von offenen Immobilienfonds - unter besonderer Berücksichtigung der Projektentwicklung von Gewerbeimmobilien’, in K.-W. Schulte (ed.) *Schriften zur Immobilienökonomie*. Cologne.

- Bone-Winkel, S., Isenhöfer, B., Hofmann, P. and Franz, M.** (2016) 'Projektentwicklung', in Schulte. K.-W. (ed.) *Immobilienökonomie*. München: Oldenbourg Verlag, pp. 175–245.
- Botha, B., Adendorff, C. and Smallwood, J.** (2014) 'PROPERTY DEVELOPMENT: A BUSINESS PROCESS MODEL', *Journal of Construction Project Management and Innovation*, 4(2), p. 10121033.
- Bowen, G.A.** (2006) 'Grounded Theory and Sensitizing Concepts', *International Journal of Qualitative Methods*, 5(3), pp. 12–23. Available at: <https://doi.org/10.1177/160940690600500304>.
- bpb** (2022) *Armut in Deutschland wächst* | [bpb.de](https://www.bpb.de), Bundeszentrale für politische Bildung. Available at: <https://www.bpb.de/kurz-knapp/hintergrund-aktuell/516505/armut-in-deutschland-waechst/> (Accessed: 13 January 2023).
- Brabec, J. and Macháč, J.** (2025) 'Impacts of the EU Taxonomy implementation: a systematic literature review', *Climate Policy*, pp. 1–13. Available at: <https://doi.org/10.1080/14693062.2025.2526683>.
- Bragança, L., Mateus, R. and Koukkari, H.** (2010) 'Building Sustainability Assessment', *Sustainability*, 2(7), pp. 2010–2023. Available at: <https://doi.org/10.3390/su2072010>.
- Braun, V. and Clarke, V.** (2006) 'Using Thematic Analysis in Psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101.
- Breuer, W. and Steininger, I.** (2020) 'Recent trends in real estate research: a comparison of recent working papers and publications using machine learning algorithms', *Journal of Business Economics*, 90, pp. 963–974. Available at: <https://doi.org/10.1007/s11573-020-01005-w>.
- Briand, R., Urwin, R. and Chia, C.P.** (2011) 'Integrating ESG into the Investment Process- From Aspiration to Effective Implementation', *MSCI ESG Research - Research Insight*, pp. 1–17.
- Brinkmann, S.** (2014) 'Unstructured and Semi-Structured Interviewing', in P. Leavy (ed.) *The Oxford Handbook of Qualitative Research*. New York: Oxford University Press, pp. 277–299.
- Brislin, R.W.** (1970) 'Back-translation for cross-cultural research', *Cross-Cultural Psychology*, 1(3), pp. 185–216.
- Brownill, S., Keivani, R. and Pereira, G.** (2013) 'Olympic legacies and city development strategies in London and Rio; beyond the carnival mask?', *International Journal of Urban*

Sustainable Development, 5(2), pp. 111–131. Available at: <https://doi.org/10.1080/19463138.2013.840637>.

Bruce, C.S. (1994) ‘Research students’ early experiences of the dissertation literature review’, *Studies in Higher Education*, 19(2), pp. 217–229. Available at: <https://doi.org/10.1080/03075079412331382057>.

Bryman, A. (1988) *Quantity and Quality in Social Research*. London: Routledge.

Bryman, A. (2012) *Social Research Methods*. 4th ed. Oxford: Oxford University Press.

Bryman, A. and Burgess, R.G. (1994) ‘Reflections on Qualitative Data Analysis’, *Analyzing Qualitative Data*. London: Routledge.

Buchetti, B., Arduino, F.R. and De Vito, A. (2022) ‘A Systematic Literature Review on Corporate Governance and ESG research: Trends and Future directions’, *SSRN Electronic Journal* [Preprint]. Available at: <https://doi.org/10.2139/ssrn.4286866>.

Buhr, B. (2017) ‘Assessing the sources of stranded asset risk: a proposed framework’, *Journal of Sustainable Finance and Investment*, 7(1), pp. 37–53. Available at: <https://doi.org/10.1080/20430795.2016.1194686>.

Bulloch, B. and Sullivan, J. (2010) ‘Information – The Key to the Real Estate Development Process’, *Cornell Real Estate Review*, 8, pp. 78–87.

bulwiengesa AG (2025) *RIWIS Development Monitor*.

Bundesministerium der Justiz (2019) *KSG - Bundes-Klimaschutzgesetz*. Berlin: Bundesministerium der Justiz. Available at: <https://www.gesetze-im-internet.de/ksg/BJNR251310019.html> (Accessed: 30 December 2022).

Burrell, G. and Morgan, G. (2016) *Sociological Paradigms and Organisational Analysis*. Abingdon: Routledge.

Burroughs, S. (2017) ‘Development of a Tool for Assessing Commercial Building Resilience’, *Procedia Engineering*, 180, pp. 1034–1043. Available at: <https://doi.org/10.1016/j.proeng.2017.04.263>.

Busetto, L., Wick, W. and Gumbinger, C. (2020) ‘How to use and assess qualitative research methods’, *Neurological Research and Practice*, 2(1), p. 14. Available at: <https://doi.org/10.1186/s42466-020-00059-z>.

Bushnell, C. and McAllister, P. (2012) ‘Ownership Advantages in Cross-border Real Estate Development: Some Evidence from European markets’, *Working Papers in Real Estate & Planning 01/12 - University of Reading*, pp. 1–29.

Van der Byl, C.A. and Slawinski, N. (2015) 'Embracing Tensions in Corporate Sustainability', *Organization & Environment*, 28(1), pp. 54–79. Available at: <https://doi.org/10.1177/1086026615575047>.

Byrne, D. (2022) 'A worked example of Braun and Clarke's approach to reflexive thematic analysis', *Quality and Quantity*, 56(3), pp. 1391–1412. Available at: <https://doi.org/10.1007/s11135-021-01182-y>.

Cadman, D. (2000) 'The vicious circle of blame', *RICS Research Foundation*, cited in *Keeping, M. (2000), What about demand? Do investors want sustainable buildings?* [Preprint].

Cajias, M., Fuerst, F., McAllister, P. and Nanda, A. (2014) 'DO RESPONSIBLE REAL ESTATE COMPANIES OUTPERFORM THEIR PEERS?', *International Journal of Strategic Property Management*, 18(1), pp. 11–27. Available at: <https://doi.org/10.3846/1648715X.2013.866601>.

Candel, M. and Törnå, N. (2022) 'Housing developers' perceived barriers to implementing municipal sustainability requirements in Swedish sustainability-profiled districts', *Journal of Housing and the Built Environment*, 37(4), pp. 1693–1721. Available at: <https://doi.org/10.1007/s10901-021-09923-z>.

Cappucci, M. (2018) 'The ESG Integration Paradox', *Journal of Applied Corporate Finance*, 30(2). Available at: <https://doi.org/10.1111/jacf.12296>.

Caputo, A. (2013) 'Systemic Stakeholders' Management for Real Estate Development Projects', *Global Business and Management Research: An International Journal*, 5(1), pp. 66–82. Available at: <https://www.researchgate.net/publication/260638592>.

Cartwright, A., Khalatbari-Soltani, S. and Zhang, Y. (2025) 'Housing conditions and the health and wellbeing impacts of climate change: A scoping review', *Environmental Research*, 270, p. 120846. Available at: <https://doi.org/10.1016/j.envres.2025.120846>.

Carvalho, M.M. and Rabechini, R. (2017) 'Can project sustainability management impact project success? An empirical study applying a contingent approach', *International Journal of Project Management*, 35(6). Available at: <https://doi.org/10.1016/j.ijproman.2017.02.018>.

Chan, A.P.C. and Oppong, G.D. (2017) 'Managing the expectations of external stakeholders in construction projects', *Engineering, Construction and Architectural Management*, 24(5). Available at: <https://doi.org/10.1108/ECAM-07-2016-0159>.

- Chan, A.P.C., Scott, D. and Chan, A.P.L.** (2004) 'Chan, A. P. C., Scott, D., and Chan, A. P. L. (2004). □Factors affecting the success of a construction project.', *Journal of Construction Engineering and Management*, 130(1), pp. 153–155. Available at: [https://doi.org/10.1061/\(ASCE\)0733-9364\(2004\)130:1\(153\)](https://doi.org/10.1061/(ASCE)0733-9364(2004)130:1(153)).
- Chand, M.** (2006) 'The relationship between corporate social performance and corporate financial performance: industry type as a boundary condition', *The Business Review*, 5(1), pp. 240–245.
- Chau, C.K., Tse, M.S. and Chung, K.Y.** (2010) 'A choice experiment to estimate the effect of green experience on preferences and willingness-to-pay for green building attributes', *Building and Environment*, 45(11), pp. 2553–2561.
- Chawla, V.K., Chanda, A.K., Angra, S. and Chawla, G.R.** (2018) 'The sustainable project management: A review and future possibilities', *Journal of Project Management*, pp. 157–170. Available at: <https://doi.org/10.5267/j.jpm.2018.2.001>.
- Cheema-Fox, A., Czaronis, M., Kontu, P. and Serafeim, G.** (2025) 'Corporate alignment with the EU taxonomy for sustainable activities: First evidence from financial accounting data', *Journal of Applied Corporate Finance*, 37(2), pp. 85–103. Available at: <https://doi.org/10.1111/jacf.12667>.
- Chiang, K.C.H., DeWitt, R.-L., Folkman, D. and Jiao, L.** (2018) 'REIT Governance, Entrepreneurial Control, and Corporate Value', *Journal of Real Estate Research*, 40(2), pp. 241–266. Available at: <https://doi.org/10.1080/10835547.2018.12091499>.
- Chih, Y.-Y. and Zwikael, O.** (2015) 'Project benefit management: A conceptual framework of target benefit formulation', *International Journal of Project Management*, 33(2), pp. 352–362. Available at: <https://doi.org/10.1016/j.ijproman.2014.06.002>.
- Chin, H., Hills, J. and Luo, W.** (2021) *ESG & Real Estate: Top 10 Things Investors Need to Know*. Hong Kong.
- Christensen, P.** (2012) *KEY STRATEGIES OF SUSTAINABLE REAL ESTATE DECISION-MAKING IN THE UNITED STATES: A DELPHI STUDY OF THE STAKEHOLDERS*. Clemson University.
- Clark, G.L., Feiner, A. and Viehs, M.** (2015) 'From the Stockholder to the Stakeholder: How Sustainability Can Drive Financial Outperformance', *SSRN Electronic Journal* [Preprint]. Available at: <https://doi.org/10.2139/ssrn.2508281>.
- Clarke, V. and Braun, V.** (2017) 'Thematic analysis', *The Journal of Positive Psychology*, 12(3), pp. 297–298. Available at: <https://doi.org/10.1080/17439760.2016.1262613>.

- Cloutier, D.** (2020) 'The New Norm: ESG as a Material Risk and Opportunity for Real Estate', *Real Estate Issues*, 44(16), pp. 1–6.
- Cloutier, D., Robinson, S. and Sullivan, G.** (2021) 'The Coming U.S. Regulatory Oversight of, and Demand for, Climate Disclosure', *Real Estate Issues*, 45(28).
- Collins, D., Haugen, T., Lindkvist, C. and Aamodt, C.** (2019) 'Bridging the gap between sustainable FM and sustainable buildings – an exploratory study of six public buildings in Norway', *Facilities*, 37(9/10), pp. 639–652. Available at: <https://doi.org/10.1108/F-01-2018-0007>.
- Colwell, S.R. and Joshi, A.W.** (2013) 'Corporate Ecological Responsiveness: Antecedent Effects of Institutional Pressure and Top Management Commitment and Their Impact on Organizational Performance', *Business Strategy and the Environment*, 22(2), pp. 73–91. Available at: <https://doi.org/10.1002/bse.732>.
- Costello, G. and Preller, F.** (2010) 'Property Development Principles and Process – An Industry Analysis: An Industry Analysis', *Pacific Rim Property Research Journal*, 16, pp. 171–189.
- Coviello, D. and Mariniello, M.** (2014) 'Publicity requirements in public procurement: Evidence from a regression discontinuity design', *Journal of Public Economics*, 109, pp. 76–100. Available at: <https://doi.org/10.1016/j.jpubeco.2013.10.008>.
- Crace, L. and Gehman, J.** (2023) 'What Really Explains ESG Performance? Disentangling the Asymmetrical Drivers of the Triple Bottom Line', *Organization & Environment*, 36(1), pp. 150–178. Available at: <https://doi.org/10.1177/10860266221079408>.
- Creswell, J.W.** (2014) *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage.
- Criado-Perez, C., Collins, C.G., Jackson, C.J., Oldfield, P., Pollard, B. and Sanders, K.** (2020) 'Beyond an “informed opinion”: evidence-based practice in the built environment', *Architectural Engineering and Design Management*, 16(1), pp. 23–40. Available at: <https://doi.org/10.1080/17452007.2019.1617670>.
- Crotty, M.** (1998) *The Foundations of Social Research*. London: Sage.
- Cruz Rios, F., Grau, D. and Bilec, M.** (2021) 'Barriers and Enablers to Circular Building Design in the US: An Empirical Study', *Journal of Construction Engineering and Management*, 147(10). Available at: [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0002109](https://doi.org/10.1061/(ASCE)CO.1943-7862.0002109).

- Da Cunha Bezerra, M.C., Audia, C., Gohr, F. and Morioka, S.N.** (2019) ‘Organizational capabilities towards corporate sustainability benefits: A systematic literature review and an integrative framework proposal’, *Journal of Cleaner Production*, 247(119114), pp. 1–18. Available at: <https://doi.org/10.1016/j.jclepro.2019.119114>.
- Dănilă, A., Horga, M.G., Oprișan, O. and Stamule, T.** (2022) ‘Good Practices on ESG Reporting in the Context of the European Green Deal’, *Amfiteatru Economic*, 24(61), pp. 847–860. Available at: <https://doi.org/10.24818/EA/2022/61/847>.
- D’Apolito, E. and Iannuzzi, A.P.** (2017) ‘Incentive Plans, Pay-for-non-financial Performance and ESG Criteria: Evidence from the European Banking Sector’, *International Business Research*, 10(10), p. 169. Available at: <https://doi.org/10.5539/ibr.v10n10p169>.
- D’arcy, É.** (2006) ‘Markets, Market Structures and Market Change: Expanding the Real Estate Research Paradigm’, *Pacific Rim Property Research Journal*, 12(4), pp. 446–464. Available at: <https://doi.org/10.1080/14445921.2006.11104395>.
- Darko, A., Chan, A., Ameyaw, E., He, B. and Olanipekun, A.** (2017) ‘Examining issues influencing green building technologies adoption: The United States green building experts’ perspectives’, *Energy and Buildings*, 144, pp. 320–332. Available at: <https://doi.org/10.1016/j.enbuild.2017.03.060>.
- Daugaard, D.** (2020) ‘Emerging new themes in environmental, social and governance investing: a systematic literature review’, *Accounting & Finance*, 60(2), pp. 1501–1530. Available at: <https://doi.org/10.1111/acfi.12479>.
- Deden, I., Doe, N.J. and Tacke, F.** (2018) *Leitfaden für ethisch-nachhaltige Immobilieninvestments*. Frankfurt am Main .
- Deloitte** (2020) *#managetogreen ESG, der EU Action Plan und die Real Estate Akteure*.
- Deloitte** (2021) ‘ESG Real Estate Insights 2021 | Article #1 Sustainable Finance Disclosure Regulation (SFDR) in the Real Estate Industry’, *ESG Real Estate Insights* [Preprint].
- dena** (2022) *Keine Energiewende ohne Wärmewende*, Deutsche Energie Agentur. Available at: <https://www.dena.de/themen-projekte/energieeffizienz/gebaeude/> (Accessed: 3 January 2023).
- Denyer, D. and Tranfield, D.** (2009) ‘Producing a Systematic Review’, in D.A. Buchanan and A. Bryman (eds.) *The Sage Handbook of Organisational Research Methods*. London: Sage, pp. 671–689.
- Denzin, N.K.** (2001) ‘The reflexive interview and a performative social science’, *Qualitative Research*, 1(1), pp. 23–46.

Denzin, N.K. and Lincoln, Y.S. (2018) *The Sage Handbook of Qualitative Research*. 5th ed. London: Sage.

Destatis (2021) *Pressemitteilung Nr. 261 vom 4. Juni 2021 - Abfallaufkommen in Deutschland im Jahr 2019 weiter auf hohem Niveau*, Statistisches Bundesamt.

Destatis (2023) *Bevölkerungsstand*. Available at: <https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Bevoelkerungsstand/Tabellen/deutsche-nichtdeutsche-bevoelkerung-nach-geschlecht-deutschland.html> (Accessed: 25 March 2025).

Destatis (2025) *16,8 % weniger Baugenehmigungen für Wohnungen im Jahr 2024*, Destatis Pressemeldung Nr. 061.

DGNB (2023) *DGNB Kriterienkatalog Gebäude Neubau, Version 2023 – Kommentierung | DGNB, DGNB - Deutsche Gesellschaft für Nachhaltiges Bauen*. Available at: <https://www.dgnb.de/de/verein/system/version-2023/index.php> (Accessed: 22 March 2023).

Diederichs, C.J. (1996) 'Grundlagen der Projektentwicklung', in K.-W. Schulte (ed.) *Handbuch Immobilien-Projektentwicklung*, pp. 17–80.

Diederichs, C.J. (2003) *Beispielsammlung zu den Grundleistungen der Projektsteuerung - Handlungsbereich C, Kosten und Finanzierung*. Wuppertal: DVP-Verlag.

Diederichs, C.J. (2006) *Immobilienmanagement im Lebenszyklus*. 2nd ed. Berlin Heidelberg: Springer Verlag.

Dieterich, C., Herrmann, E. and Parzeller, M. (2020) 'Tod bei der Arbeit – eine Analyse tödlicher Arbeitsunfälle von 2005 bis 2016 im Obduktionsgut des Instituts für Rechtsmedizin in Frankfurt am Main', *Rechtsmedizin*, 30(3), pp. 144–152. Available at: <https://doi.org/10.1007/s00194-020-00372-6>.

DiMaggio, P.J. and Powell, W.W. (1983) 'The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields', *American Sociological Review*, 48(2), p. 147. Available at: <https://doi.org/10.2307/2095101>.

Dixon, T. (2019) 'Measuring the Social Sustainability of New Housing Development: A Critical Review of Assessment Methods', *Journal of Sustainable Real Estate*, 11(1), pp. 16–39. Available at: <https://doi.org/10.22300/1949-8276.11.1.16>.

Dong, Z. and Sing, T.F. (2017) 'Developers' heterogeneity and real estate development timing options', *Journal of Property Investment & Finance*, 35(5), pp. 472–488. Available at: <https://doi.org/10.1108/JPIF-07-2016-0058>.

- Dorfleitner, G., Hornuf, L., Schmitt, M. and Weber, M.** (2017) ‘The FinTech Market in Germany’, *FinTech in Germany*. Berlin: Springer International Publishing, pp. 13–46. Available at: https://doi.org/10.1007/978-3-319-54666-7_4.
- Döringer, St.** (2021) “‘The problem-centred expert interview’”. Combining qualitative interviewing approaches for investigating implicit expert knowledge’, *International Journal of Social Research Methodology*, 24(3), pp. 265–278. Available at: <https://doi.org/10.1080/13645579.2020.1766777>.
- Doungmanee, P., Anantapant, P., Kankar, J.R., Thongmar, T. and Sirirat, C.** (2024) ‘TOWARDS ESG SCHEME OF THE REAL ESTATE AND CONSTRUCTION INDUSTRY IN THAILAND’.
- Drago, C., Costantiello, A., Arnone, M. and Leogrande, A.** (2025) ‘Bridging Sustainability and Inclusion: Financial Access in the Environmental, Social, and Governance Landscape’, *Journal of Risk and Financial Management*, 18(7), p. 375. Available at: <https://doi.org/10.3390/jrfm18070375>.
- Drane, J.** (2012) ‘A View From The Ground Implications for the literature on the “models of the development process” based on a model of praxis and an associated mapping study’, *AESOP 26th Annual Congress*. Ankara: METU, pp. 1–41.
- Drane, J.** (2013) ‘THE STATE OF CONTEMPORARY PROPERTY DEVELOPMENT THEORY’, *19TH ANNUAL PACIFIC-RIM REAL ESTATE SOCIETY CONFERENCE*. Melbourne, pp. 1–16.
- Drees & Sommer** (2013) ‘Nachhaltigkeit – Zertifizierung als Wettbewerbsvorteil’, *DGNB im Rahmen des Green Building Summit*.
- Drempetic, S., Klein, C. and Zwergel, B.** (2020) ‘The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review’, *Journal of Business Ethics*, 167, pp. 333–360. Available at: <https://doi.org/10.1007/s10551-019-04164-1>.
- Du, S., Bhattacharya, C.B. and Sen, S.** (2011) ‘Corporate Social Responsibility and Competitive Advantage: Overcoming the Trust Barrier’, *Management Science*, 57(9), pp. 1528–1545. Available at: <https://doi.org/10.1287/mnsc.1110.1403>.
- Dullien, S. and Krebs, T.** (2021) ‘Öffentlicher Wohnungsbau als Element einer breit verstandenen Grundsicherung’, in F. Blank, C. Schäfer, and D. Spannagel (eds.) *Grundsicherung weiterdenken*. Band 198. Hans-Böckler Stiftung, pp. 171–188.

Dumrose, M., Rink, S. and Eckert, J. (2022) ‘Disaggregating confusion? The EU Taxonomy and its relation to ESG rating’, *Finance Research Letters*, 48(102928). Available at: <https://doi.org/10.1016/J.FRL.2022.102928>.

Duque-Grisales, E. and Aguilera-Caracuel, J. (2021) ‘Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack’, *Journal of Business Ethics*, 168(2). Available at: <https://doi.org/10.1007/s10551-019-04177-w>.

DVFA (2010) *KPIs for ESG*. Available at: https://www.dvfa.de/fileadmin/downloads/Publikationen/Standards/KPIs_for_ESG_3_0_Final.pdf (Accessed: 27 February 2023).

Dworkin, S.L. (2012) ‘Sample Size Policy for Qualitative Studies Using In-Depth Interviews’, *Archives of Sexual Behavior*, 41, pp. 1319–1320.

EBA (2021) *EBA REPORT ON MANAGEMENT AND SUPERVISION OF ESG RISKS FOR CREDIT INSTITUTIONS AND INVESTMENT FIRMS EBA/REP/2021/18 EBA REPORT ON MANAGEMENT AND SUPERVISION OF ESG RISKS FOR CREDIT INSTITUTIONS AND INVESTMENT FIRMS 2*.

Eberhardt, S. and Klaubetz, J. (2022) ‘Grundlagen der Immobilienprojektentwicklung’, in S. Eberhardt and J. Klaubetz (eds.) *Handbuch Immobilienprojektentwicklung*. 2. Vienna: Linde Verlag, pp. 1–10.

EC (2020) *A new Circular Economy Action Plan*. Brussels. Available at: <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/> (Accessed: 20 March 2023).

EC (2021a) *ANNEX to the Commission Delegated Regulation (EU)*. Brussels.

EC (2021b) *Do No Significant Harm, European Commission Glossary*. [https://knowledge4policy.ec.europa.eu/glossary-item/do-no-significant-harm_en#:~:text='do%20no%20significant%20harm'%20means,\(EU\)%202020%2F852](https://knowledge4policy.ec.europa.eu/glossary-item/do-no-significant-harm_en#:~:text='do%20no%20significant%20harm'%20means,(EU)%202020%2F852).

EC (2021c) *Renovation Wave - The European Green Deal - Affordable Housing Initiative*. Brussels.

Eccles, N.S. and Viviers, S. (2011) ‘The Origins and Meanings of Names Describing Investment Practices that Integrate a Consideration of ESG Issues in the Academic Literature’, *Journal of Business Ethics*, 104(3). Available at: <https://doi.org/10.1007/s10551-011-0917-7>.

- Eccles, R.G., Lee, L.E. and Strohle, J.C.** (2020) ‘The Social Origins of ESG: An Analysis of Innovest and KLD’, *Organization and Environment*, 33(4), pp. 575–596. Available at: <https://doi.org/10.1177/1086026619888994/FORMAT/EPUB>.
- Edmans, A.** (2022) ‘The End of ESG’, *Financial Management* [Preprint]. Available at: <https://doi.org/10.1111/FIMA.12413>.
- Eichholtz, P., Kok, N. and Quigley, J.M.** (2010) ‘Doing Well by Doing Good? Green Office Buildings’, *The American Economic Review*, 100(5), pp. 2492–2509. Available at: <https://doi.org/10.1257/aer>.
- Eichholtz, P., Kok, N. and Quigley, J.M.** (2013) ‘THE ECONOMICS OF GREEN BUILDING’, *The Review of Economics and Statistics*, 95(1), pp. 50–63.
- Eichholtz, P. and Lindenthal, T.** (2014) ‘Demographics, human capital, and the demand for housing’, *Journal of Housing Economics*, 26, pp. 19–32. Available at: <https://doi.org/10.1016/j.jhe.2014.06.002>.
- Eisele, J., Harzdorf, A., Hüttig, L., Otto, J., Stroetmann, R., Trautmann, B. and Weller, C.** (2020) ‘Umnutzung bestehender Gebäudestrukturen’, *Multifunktionale Büro- und Geschäftshäuser*. Wiesbaden: Springer Vieweg, pp. 1–14. Available at: https://doi.org/10.1007/978-3-658-28458-9_1.
- Elkington, J.** (1998) ‘Partnerships from cannibals with forks: The triple bottom line of 21st-century business’, *Environmental Quality Management*, 8(1), pp. 37–51.
- Erdem, D. and Ozorhon, B.** (2015) ‘Assessing Real Estate Project Success Using an Analytic Network Process’, *Journal of Management in Engineering*, 31(4). Available at: [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000281](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000281).
- Ershadi, M. and Goodarzi, F.** (2021) ‘Core capabilities for achieving sustainable construction project management’, *Sustainable Production and Consumption*, 28, pp. 1396–1410. Available at: <https://doi.org/10.1016/j.spc.2021.08.020>.
- Escrig-Olmedo, E., Fernández-Izquierdo, M., Ferrero-Ferrero, I., Rivera-Lirio, J. and Muñoz-Torres, M.** (2019) ‘Rating the Raters: Evaluating how ESG Rating Agencies Integrate Sustainability Principles’, *Sustainability*, 11(3), p. 915. Available at: <https://doi.org/10.3390/su11030915>.
- (EU 2020/852)** (2020) *EU 2020/852*. Available at: <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX:32020R0852> (Accessed: 29 January 2023).
- FADA** (2020) *Rassistische Diskriminierung auf dem Wohnungsmarkt Ergebnisse einer repräsentativen Umfrage*. Berlin.

- Fahrion, M.-S., Sobek Green, W., Draeger, S., Lakatos, M., Schmidt, T., Nickl, C., Brombacher, M., Bangalore, D. and Sundermann, W.** (2019) *KLIBAU-Weiterentwicklung und Konkretisierung des Klimaangepassten Bauens Im Auftrag des Bundesinstituts für Bau-, Stadt-und Raumforschung (BBSR) im Bundesamt für Bauwesen und Raumordnung (BBR) bearbeitet von*. Berlin. Available at: <https://doi.org/10.08.17.7-18.33>.
- Falkenberg, J. and Brunsæl, P.** (2011) 'Corporate Social Responsibility: A Strategic Advantage or a Strategic Necessity?', *Journal of Business Ethics*, 99(S1), pp. 9–16. Available at: <https://doi.org/10.1007/s10551-011-1161-x>.
- Fastenrath, S. and Braun, B.** (2018) 'Sustainability transition pathways in the building sector: Energy-efficient building in Freiburg (Germany)', *Applied Geography*, 90, pp. 339–349. Available at: <https://doi.org/10.1016/j.apgeog.2016.09.004>.
- Fedchenko, E., Gusarova, L., Lysenko, A., Chaykovskaya, L. and Vankovich, I.** (2023) 'Legal frameworks for national projects: standardized audit as a factor in achieving sdgs', *Journal of Law and Sustainable Development*, 11(1), pp. 1–23. Available at: <https://doi.org/10.37497/sdgs.v11i1.259>.
- Feld, L., Carstensen, S., Gerling, M., Wandzik, C. and Simons, H.** (2024) *Frühjahrgutachten Immobilienwirtschaft 2024 des Rates der Immobilienweisen*.
- Fern, E.F.** (2001) *Advanced focus group research*. Thousand Oaks: Sage Publications.
- Ferreira, M. d. A. V., Morgado, C.D.R. V. and Lins, M.P.E.** (2024) 'Organizations and stakeholders' roles and influence on implementing sustainability requirements in construction projects', *Heliyon*, 10(1). Available at: <https://doi.org/10.1016/j.heliyon.2023.e23762>.
- Fisher, P.** (2005) 'The property development process: Case studies from Grainger Town', *Property Management*, 23(3), pp. 158–175. Available at: <https://doi.org/10.1108/02637470510603510>.
- Fisher, P. and Robson, S.** (2006) 'The Perception and Management of Risk in UK Office Property Development', *Journal of Property Research*, 23(2), pp. 135–161. Available at: <https://doi.org/10.1080/09599910600800484>.
- Fisher, P., Tyne, upon and Collins, T.** (1999) 'The commercial property development process', *Property Management*, 17(3), pp. 263–7472. Available at: <http://www.emerald-library.com>.

Flyvbjerg, B. (2009) ‘Survival of the unfittest: why the worst infrastructure gets built-and what we can do about it’, *Oxford Review of Economic Policy*, 25(3), pp. 344–367. Available at: <https://doi.org/10.1093/oxrep/grp024>.

Flyvbjerg, B. (2014) ‘What you should know about megaprojects and why: An overview’, *Project Management Journal*, 45(2), pp. 6–19. Available at: <https://doi.org/10.1002/PMJ.21409>.

Flyvbjerg, B. (2017) ‘Introduction: The Iron Law of Megaproject Management’, *The Oxford Handbook of Megaproject Management*. Oxford: Oxford University Press, pp. 1–18. Available at: <https://ssrn.com/abstract=2742088> (Accessed: 31 March 2023).

Franco, C. De, Nicolle, J. and Tran, L.-A. (2021) ‘Sustainable Investing: ESG versus SDG’, *The Journal of Impact and ESG Investing*, p. jesg.2021.1.019. Available at: <https://doi.org/10.3905/jesg.2021.1.019>.

Frankland, J. and Bloor, M. (1999) ‘Some Issues Arising in the Systematic Analysis of Focus Group Materials’, *Developing Focus Group Research*. 6 Bonhill Street, London England EC2A 4PU United Kingdom : SAGE Publications Ltd, pp. 144–155. Available at: <https://doi.org/10.4135/9781849208857.n10>.

Freeman, R.E. (1984) *Strategic management: A stakeholder approach*. Boston.

Friede, G., Busch, T. and Bassen, A. (2015) ‘ESG and financial performance: aggregated evidence from more than 2000 empirical studies’, *Journal of Sustainable Finance & Investment*, 5(4), pp. 210–233. Available at: <https://doi.org/10.1080/20430795.2015.1118917>.

Fuerst, F. and McAllister, P. (2009) ‘New Evidence on the Green Building Rent and Price Premium’, *Annual Meeting of the American Real Estate Society*. Monterey: University of Reading.

Fuerst, F. and McAllister, P. (2011) ‘Green Noise or Green Value? Measuring the Effects of Environmental Certification on Office Values’, *Real Estate Economics*, 39(1), pp. 45–69. Available at: <https://doi.org/10.1111/j.1540-6229.2010.00286.x>.

Fuerst, Franz, Dalton, Ben, Fuerst, F and Dalton, B (2019) ‘Gibt es einen wissenschaftlichen Konsens zur Wirtschaftlichkeit nachhaltiger Immobilien? Is there a scientific consensus on the economic viability of sustainable buildings?’, *Immobilienökonomie*, 5, pp. 173–191. Available at: <https://doi.org/10.1365/s41056-019-00041-0>.

- Galati, G. and Teppa, F.** (2017) ‘Heterogeneity in House Price Dynamics’, *SSRN Electronic Journal* [Preprint]. Available at: <https://doi.org/10.2139/ssrn.3014766>.
- Garcia, A.S., Mendes-Da-Silva, W. and Orsato, R.** (2017) ‘Sensitive industries produce better ESG performance: Evidence from emerging markets’, *Journal of Cleaner Production*, 150. Available at: <https://doi.org/10.1016/j.jclepro.2017.02.180>.
- Garrido, E., González, C. and Orcos, R.** (2020) ‘ISO 14001 and CO2 emissions: An analysis of the contingent role of country features’, *Business Strategy and the Environment*, 29(2). Available at: <https://doi.org/10.1002/bse.2402>.
- Garvey, G.T. and Swan, P.L.** (1994) ‘The economics of corporate governance: Beyond the Marshallian firm’, *Journal of Corporate Finance*, 1(2), pp. 139–174. Available at: [https://doi.org/10.1016/0929-1199\(94\)90001-9](https://doi.org/10.1016/0929-1199(94)90001-9).
- Gehner, E. and Peek, G.-J.** (2009) ‘REAL ESTATE DEVELOPMENT STRATEGIES AND THEIR IMPACT ON THE RISK PROFILE OF A PROJECT’, *CIB Joint International Symposium 2009 - CONSTRUCTION FACING WORLDWIDE CHALLENGES*, pp. 853–863.
- Geva, Y. and Rosen, G.** (2018) ‘The regeneration deal: Developers, homeowners and new competencies in the development process’, *Geoforum*, 96, pp. 10–20. Available at: <https://doi.org/10.1016/j.geoforum.2018.07.011>.
- Gillan, S.L., Koch, A. and Starks, L.T.** (2021) ‘Firms and social responsibility: A review of ESG and CSR research in corporate finance’, *Journal of Corporate Finance*, 66, p. 101889. Available at: <https://doi.org/10.1016/J.JCORPFIN.2021.101889>.
- Gischer, H. and Weiß, M.** (2007) ‘Entwicklung der Immobilienpreise im Euroraum: Bestandsaufnahme und makroökonomische Konsequenzen’, *ifo Schnelldienst*, 60(19), pp. 27–42. Available at: https://www.ifo.de/DocDL/ifosd_2007_19_4.pdf (Accessed: 17 October 2022).
- Global Data** (2022) *ESG Strategy Survey 2021*. London.
- Glunz, A., Scheidel, S., Koldijk, A. and von Prittwitz, J.** (2022) *Business Destination Germany 2022*.
- Gobert, J.** (2016) *Widerstand gegen Großprojekte*. Wiesbaden: SpringerFachmedien.
- Godfrey, P.C., Merrill, C.B. and Hansen, J.M.** (2009) ‘The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis’, *Strategic Management Journal*, 30(4), pp. 425–445. Available at: <https://doi.org/10.1002/SMJ.750>.

- Goh, C.S., Chong, H.Y., Jack, L. and Mohd Faris, A.F.** (2020) 'Revisiting triple bottom line within the context of sustainable construction: A systematic review', *Journal of Cleaner Production*, 252, p. 119884. Available at: <https://doi.org/10.1016/j.jclepro.2019.119884>.
- Goldkuhl, G.** (2012) 'Pragmatism vs interpretivism in qualitative information systems research', *European Journal of Information Systems*, 21(2), pp. 135–146. Available at: <https://doi.org/10.1057/ejis.2011.54>.
- Goles, T. and Hirschheim, R.** (2000) 'The paradigm is dead, the paradigm is dead...long live the paradigm: the legacy of Burrell and Morgan', *Omega*, 28, pp. 249–268.
- Gondring, H.** (2004) *Immobilienwirtschaft - Handbuch für Studium und Praxis*. 3rd ed. München: Verlag Franz Vahlen.
- Goodchild, R. and Munton, R.** (1985) *Development and the Landowner*. London: Allen and Unwin.
- Gore, T. and Nicholson, D.** (1991) 'Models of the Land-Development Process: A Critical Review', *Environment and Planning A: Economy and Space*, 23(5), pp. 705–730. Available at: <https://doi.org/10.1068/a230705>.
- Gradillas, M., Castro, A. and Salandra, R.** (2021) 'Understanding the adoption of voluntary environmental, social and governance (ESG) standards in the real estate sector', *THE BARTLETT SCHOOL OF SUSTAINABLE CONSTRUCTION, University College London* [Preprint].
- Grazieschi, G., Asdrubali, F. and Thomas, G.** (2021) 'Embodied energy and carbon of building insulating materials: A critical review', *Cleaner Environmental Systems*, 2, p. 100032. Available at: <https://doi.org/10.1016/j.cesys.2021.100032>.
- Greenley, G.E. and Foxall, G.R.** (1997) 'Multiple Stakeholder Orientation in UK Companies and the Implications for Company Performance', *Journal of Management Studies*, 34(2), pp. 259–284. Available at: <https://doi.org/10.1111/1467-6486.00051>.
- GRESB** (2022) *SFDR Real Estate Reference Guide*, *GRESB Real Estate*. Available at: https://documents.gresb.com/generated_files/real_estate/2022/sfdr/reference_guide/complete.html (Accessed: 25 February 2023).
- GRESB** (2023) *GRESB Real Estate Scoring Document*, *GRESB Real Estate*. Available at: https://documents.gresb.com/generated_files/real_estate/2023/real_estate/scoring_document/complete.html#performance-energy (Accessed: 10 February 2023).
- Groff, R.** (2004) *Critical Realism, Post-positivism and the Possibility of Knowledge*. New York: Routledge.

Gruis, V. and Nieboer, N. (2004) 'Strategic housing management', *Property Management*, 22(3), pp. 201–213. Available at: <https://doi.org/10.1108/02637470410544995>.

Guba, E.S. and Lincoln, Y.S. (1989) *Fourth Generation Evaluation*. Newbury Park: Sage.

Guest, G., Namey, E. and Chen, M. (2020) 'A simple method to assess and report thematic saturation in qualitative research', *PLOS ONE*, 15(5), p. e0232076. Available at: <https://doi.org/10.1371/journal.pone.0232076>.

Gunduz, M. and Almuajebh, M. (2020) 'Critical success factors for sustainable construction project management', *Sustainability*, 12(5). Available at: <https://doi.org/10.3390/su12051990>.

Gurmu, A., Shooshtarian, S., Mahmood, M.N., Hosseini, M.R., Shreshta, A. and Martek, I. (2022) 'The state of play regarding the social sustainability of the construction industry: a systematic review', *Journal of Housing and the Built Environment*, 37(2), pp. 595–624. Available at: <https://doi.org/10.1007/s10901-022-09941-5>.

Guy, S. and Henneberry, J. (2000) 'Understanding urban development processes: Integrating the economic and the social in property research', *Urban Studies*, 37(13), pp. 2399–2416. Available at: <https://doi.org/10.1080/00420980020005398>.

Hahn, T., Figge, F., Pinkse, J. and Preuss, L. (2018) 'A Paradox Perspective on Corporate Sustainability: Descriptive, Instrumental, and Normative Aspects', *Journal of Business Ethics*, 148(2), pp. 235–248. Available at: <https://doi.org/10.1007/s10551-017-3587-2>.

Hahn, T., Preuss, L., Pinkse, J. and Figge, F. (2014) 'Cognitive Frames in Corporate Sustainability: Managerial Sensemaking with Paradoxical and Business Case Frames', *Academy of Management Review*, 39(4), pp. 463–487. Available at: <https://doi.org/10.5465/amr.2012.0341>.

Halecker, B. (2015) 'ACTION CASE STUDY - A RESEARCH STRATEGY BASED ON ABDUCTION FOR RELEVANT AND RIGOROUS MANAGEMENT RESEARCH', *International Journal of Business Research*, 15(3), pp. 1–15.

Hall, S., Oldfield, P., Mullins, B.J., Pollard, B. and Criado-Perez, C. (2016) 'Evidence based practice for the built environment: Can systematic reviews close the research - practice gap? ', *International High- Performance Built Environment Conference – A Sustainable Built Environment Conference 2016*, pp. 1–15.

Hansen, S. (2021) 'CHARACTERIZING INTERVIEW-BASED STUDIES IN CONSTRUCTION MANAGEMENT RESEARCH: ANALYSIS OF EMPIRICAL

LITERATURE EVIDENCES’, *The 2nd International Conference on Innovations in Social Sciences Education and Engineering (ICoISSEE)*, pp. 1–12.

Hanson, M., Bernstein, M. and Hammon, R. (2006) ‘The Role of Energy Efficiency in Homebuying Decisions: Results of Initial Focus Group Discussions¹’, *ACEEE Summer Study on Energy Efficiency in Buildings*, pp. 1–137.

Harper Ho, V. (2016) ‘Risk-Related Activism: The Business Case for Monitoring Nonfinancial Risk’, *The Journal of Corporation Law*, 41, p. 3. Available at: <http://ssrn.com/abstract=2478121> (Accessed: 22 January 2023).

Hayar, B., Muckenhaupt, J. and Zhu, B. (2025) ‘The impact of ESG factors on performance of real estate equities’, *Journal of Property Research*, pp. 1–26. Available at: <https://doi.org/10.1080/09599916.2025.2455166>.

Hayat, U. and Orsagh, M. (2015) *Environmental, Social, and Governance Issues in Investing: A Guide for Investment Professionals*. New York: CFA Institute.

Haynes, B.P. (2012) ‘Corporate real estate asset management: aligned vision’, *Journal of Corporate Real Estate*, 14(4), pp. 244–254. Available at: <https://doi.org/10.1108/JCRE-10-2012-0022>.

Haynes, K. (2012) ‘Reflexivity in qualitative research’, in C. Cassel and B. Lee (eds.) *Challenges and Controversies in Management Research*. New York: Routledge.

Healey, P. (1991) ‘Models of the development process: A review’, *Journal of Property Research*, 8(3), pp. 219–238. Available at: <https://doi.org/10.1080/09599919108724039>.

Healey, P. (1992) ‘An institutional model of the development process’, *Journal of Property Research*, 9(1), pp. 33–44. Available at: <https://doi.org/10.1080/09599919208724049>.

Henger, R. and Voigtländer, M. (2024) *Stimmungsrückschlag in der Immobilienwirtschaft - Aktuelle Ergebnisse des ZIA-IW-Immobilienstimmungsindex (ISI)*. Cologne.

Henisz, W., Dorobantu, S. and Nartey, L. (2011) ‘SPINNING GOLD: THE FINANCIAL RETURNS TO EXTERNAL STAKEHOLDER ENGAGEMENT’, *Academy of Management Proceedings*. Academy of Management Briarcliff Manor, NY 10510, pp. 1–6. Available at: <https://doi.org/10.5465/AMBPP.2011.65870608>.

Henisz, W., Koller, T. and Nuttall, R. (2019) ‘Five ways that ESG creates value Getting your environmental, social, and governance (ESG) proposition right links to higher value creation. Here’s why’, *McKinsey Quarterly* [Preprint].

- Hennink, M. and Kaiser, B.N.** (2022) ‘Sample sizes for saturation in qualitative research: A systematic review of empirical tests’, *Social Science & Medicine*, 292, p. 114523. Available at: <https://doi.org/10.1016/j.socscimed.2021.114523>.
- Hennink, M.M., Kaiser, B.N. and Marconi, V.C.** (2017) ‘Code Saturation Versus Meaning Saturation’, *Qualitative Health Research*, 27(4), pp. 591–608. Available at: <https://doi.org/10.1177/1049732316665344>.
- Herkströter, C., Jilge, B. and Beckers, C.** (2023) ‘ESG-Konformität – Entwicklungen bei der Regulierung im Immobiliensektor’, in O. Everling and P. Salostowitz (eds.) *Rating von Industrieimmobilien*. Wiesbaden: Springer Gabler, pp. 167–185.
- Heron, J.** (1996) *Co-operative Inquiry: Research into the Human Condition*. London: Sage.
- Herr, T.** (2011) ‘Nachhaltigkeit in der Immobilienwirtschaft’, in N.B. Rottke and M. Thomas (eds.) *immobilienwirtschaftslehre band I management*. Cologne: Immobilien Manager Verlag, pp. 481–500.
- Herz, M. and Krezdorn, N.** (2022) ‘Epic fail: Exploring project failure’s reasons, outcomes and indicators’, *Review of Managerial Science*, 16(4), pp. 1169–1193. Available at: <https://doi.org/10.1007/s11846-021-00479-4>.
- Heyden, M.L.M., Fourné, S.P.L., Koene, B.A.S., Werkman, R. and Ansari, S.** (2016) ‘Rethinking “top-down” and “bottom-up” roles of top and middle managers in organizational change: implications for employee support’, *Journal of Management Studies* [Preprint], (14). Available at: <https://doi.org/10.17863/CAM.7235>.
- Heyl, B.S.** (2001) ‘Ethnographic interviewing’, in P. Atkinson, A. Coffey, S. Delamont, J. Lofland, and L. Lofland (eds.) *Handbook of Ethnography*. London: Sage, pp. 369–383. Available at: <https://doi.org/10.4135/9781848608337>.
- Heywood, C. and Arkesteijn, M.** (2017) ‘Alignment and theory in Corporate Real Estate alignment models’, *International Journal of Strategic Property Management*, 21(2), pp. 144–158. Available at: <https://doi.org/10.3846/1648715X.2016.1255274>.
- Hill, J.** (2020) *Environmental, Social, and Governance (ESG) Investing - A Balanced Analysis of the Theory and Practice of a Sustainable Portfolio*. 1st ed. Amsterdam: Elsevier Science.
- Hirsch, J., Spanner, M. and Bienert, S.** (2019) ‘The Carbon Risk Real Estate Monitor—Developing a Framework for Science-based Decarbonizing and Reducing Stranding Risks within the Commercial Real Estate Sector’, *Journal of Sustainable Real Estate*, 11(1), pp. 174–190. Available at: <https://doi.org/10.22300/1949-8276.11.1.174>.

- Ho, A.M.Y., Lai, J.H.K. and Chiu, B.W.Y.** (2021) ‘Key performance indicators for holistic evaluation of building retrofits: Systematic literature review and focus group study’, *Journal of Building Engineering*, 43, p. 102926. Available at: <https://doi.org/10.1016/j.jobbe.2021.102926>.
- Hoesli, M.** (2016) ‘Real estate research in Europe’, *Journal of European Real Estate Research*, 9(3), pp. 220–230. Available at: <https://doi.org/10.1108/JERER-06-2016-0025>.
- Hollberg, A., Tjäder, M., Ingelhart, G. and Wallbaum, H.** (2022) ‘A Framework for User Centric LCA Tool Development for Early Planning Stages of Buildings’, *Frontiers in Built Environment*, 8. Available at: <https://doi.org/10.3389/fbuil.2022.744946>.
- Hölzel, M. and Krön, E.** (2019) ‘Partizipation bei der Projektentwicklung’, *RaumPlanung*, 201(2), pp. 55–62.
- Homagk, L.-M., von Malottki, C. and Scharmanski, A.** (2023) *Soziale Nachhaltigkeit bei Wohnimmobilien Ein Baukasten mit messbaren Kriterien Februar 2023*. Wiesbaden.
- Hong, T., Malik, J., Krelling, A., O’Brien, W., Sun, K., Lamberts, R. and Wei, M.** (2023) ‘Ten questions concerning thermal resilience of buildings and occupants for climate adaptation’, *Building and Environment*, 244, p. 110806. Available at: <https://doi.org/10.1016/j.buildenv.2023.110806>.
- Hong, Y. and Rosli, R.** (2024) ‘Exploring determinants of environmental, social, and governance scores for listed firms: An organizational context’, *Journal of Governance and Regulation*, 13(4), p. 207. Available at: <https://doi.org/10.22495/jgrv13i4art20>.
- Hossain, R. and Rahman, A.** (2025) ‘Sustainable Project Management: Integrating ESG Goals into the Project Lifecycle’, *The Science Post*, 1(2).
- Hsieh, H.-C., Clareta, V. and Bui, T.** (2020) ‘Green Building, Cost of Equity Capital and Corporate Governance: Evidence from US Real Estate Investment Trusts’, *Sustainability*, 12(9), p. 3680. Available at: <https://doi.org/10.3390/su12093680>.
- HTW Berlin and CC PMRE** (2023) *PMRE MONITOR Spezial Process Management Real Estate Monitor - Social Real Estate: The Attraction of Social Action*. Berlin: Hochschule für Technik und Wirtschaft Berlin, CC PMRE GmbH. Available at: <http://www.ccpmre.de>.
- Huang, P., Lu, Y. and Wu, J.** (2023) ‘Does board diversity in industry-experience boost firm value? The role of corporate innovation’, *Economic Modelling*, 128, p. 106504. Available at: <https://doi.org/10.1016/j.econmod.2023.106504>.

- Hui, E.C., Tse, C. and Yu, K.** (2014) 'The effect of ISO14001 certification in property management on property price', *Journal of Facilities Management*, 12(2), pp. 97–117. Available at: <https://doi.org/10.1108/JFM-03-2013-0015>.
- Humble, N. and Mozelius, P.** (2021) 'Content Analysis or Thematic Analysis: Similarities, Differences and Applications in Qualitative Research', in M. Au-Yong-Oliviera and C. Costa (eds.) *ECRM 2022 21st European Conference on Research Methods in Business and Management*. Aveiro: University of Aveiro, pp. 76–81.
- Humphreys, N.** (2020) *The EU Taxonomy for sustainable finance: FAQs for financial market participants* | Bloomberg Professional Services. Available at: <https://www.bloomberg.com/professional/blog/the-eu-taxonomy-for-sustainable-finance-faqs-for-financial-market-participants/> (Accessed: 21 March 2022).
- Hussin, M.J., Rahman, I.A. and Menom, A.M.** (2013) 'The Way Forward in Sustainable Construction: Issues and Challenges', *International Journal of Advances in Applied Sciences*, 2(1), pp. 31–42.
- Hwang, B.G. and Tan, J.S.** (2012) 'Green building project management: obstacles and solutions for sustainable development', *Sustainable Development*, 20(5), pp. 335–349. Available at: <https://doi.org/10.1002/sd.492>.
- Hwang, S., Tongsopit, S. and Kittner, N.** (2023) 'Transitioning from diesel backup generators to PV-plus-storage microgrids in California public buildings', *Sustainable Production and Consumption*, 38, pp. 252–265. Available at: <https://doi.org/10.1016/j.spc.2023.04.001>.
- ICG** (2023) *Corporate Governance Kodex der deutschen Immobilienwirtschaft*. Berlin.
- Ifediora, C.O. and Igwenagu, C.L.** (2024) 'Identifying Environmental, Social and Governance (ESG) Factors as Key Factors in Residential and Commercial Properties/Real Estate Investment Decision', *International Journal of Energy and Environmental Research*, 12(3), pp. 1–19.
- IPCC** (2007) *Climate Change 2007 Synthesis Report*. Geneva .
- Isenhöfer, B.** (1999) *Strategisches Management von Projektentwicklungsunternehmen*. Edited by K.-W. Schulte. Cologne: Müller.
- Ishak, N.M. and Bakar, A.Y.A.** (2014) 'Developing Sampling Frame for Case Study: Challenges and Conditions', *World Journal of Education*, 4(3). Available at: <https://doi.org/10.5430/wje.v4n3p29>.

- Islam, M.A. and Aldaihani, F.M.F.** (2022) ‘Justification for Adopting Qualitative Research Method, Research Approaches, Sampling Strategy, Sample Size, Interview Method, Saturation, and Data Analysis’, *Journal of International Business and Management*, 5(1), pp. 1–11.
- Janssens, M. and Zanoni, P.** (2014) ‘Alternative diversity management: Organizational practices fostering ethnic equality at work’, *Scandinavian Journal of Management*, 30(3), pp. 317–331. Available at: <https://doi.org/10.1016/j.scaman.2013.12.006>.
- Jebe, R.** (2019) ‘The Convergence of Financial and ESG Materiality: Taking Sustainability Mainstream’, *American Business Law Journal*, 56(3), pp. 645–702. Available at: <https://doi.org/10.1111/ablj.12148>.
- Jenner, S.** (2009) ‘Realising Benefits from Government ICT Investment: A Fool’s Errand?’, *Academic Conferences Limited*.
- Johansen, A., Eik-Andresen, P. and Ekambaram, A.** (2014) ‘Stakeholder Benefit Assessment – Project Success through Management of Stakeholders’, *Procedia - Social and Behavioral Sciences*, 119, pp. 581–590. Available at: <https://doi.org/10.1016/J.SBSPRO.2014.03.065>.
- Jonsdottir, B., Sigurjonsson, T.O., Johannsdottir, L. and Wendt, S.** (2022) ‘Barriers to Using ESG Data for Investment Decisions’, *Sustainability (Switzerland)*, 14(9). Available at: <https://doi.org/10.3390/su14095157>.
- Just, T., Voigtländer, M., Eisfeld, R., Henger, R., Hesse, M. and Toschka, A.** (2017) *Wirtschaftsfaktor Immobilien 2017*. Berlin. Available at: www.deutscher-verband.org (Accessed: 12 October 2022).
- Kadel, D., von Richthofen, J. and Rädiker, L.** (2024) *ESG in Real Estate Valuation 2.0*.
- Kady, N.** (2021) ‘An Institutional Analysis of Social Value in Property Development’, *27th Annual European Real Estate Society Conference*. European Real Estate Society. Available at: https://doi.org/10.15396/eres2021_108.
- Kaiser, E.J. and Weiss, S.F.** (1970) ‘Public Policy and The Residential Development Process’, *Journal of the American Institute of Planners*, 36(1), pp. 30–37. Available at: <https://www.tandfonline.com/doi/pdf/10.1080/01944367008977277?needAccess=true> (Accessed: 25 October 2022).
- K’Akumu, O.A.** (2023) ‘What is real estate? Five ontological questions for the discipline’, *Journal of European Real Estate Research*, 16(2), pp. 155–171. Available at: <https://doi.org/10.1108/JERER-08-2022-0022>.

- Kallio, H., Pietilä, A.-M., Johnson, M. and Kangasniemi, M.** (2016) ‘Systematic methodological review: developing a framework for a qualitative semi-structured interview guide’, *Journal of Advanced Nursing*, 72(12), pp. 2954–2965. Available at: <https://doi.org/10.1111/jan.13031>.
- Karji, A., Namian, M. and Tafazzoli, M.** (2020) ‘Identifying the Key Barriers to Promote Sustainable Construction in the United States: A Principal Component Analysis’, *Sustainability*, 12(12), p. 5088. Available at: <https://doi.org/10.3390/su12125088>.
- Kats, G., Alevantis, L., Berman, A., Mills, E. and Perlman, J.** (2003) *The Costs and Financial Benefits of Green Buildings*.
- Keeping, M.** (2000) *WHAT ABOUT DEMAND? DO INVESTORS WANT GREEN BUILDINGS?*
- Keeris, W.G. and Langbroek, R.A.R.** (2019) ‘Global Real Estate Sustainability Benchmarking: An Essential Tool for Real Estate Management’, *Sustainable Real Estate Multidisciplinary Approaches to an Evolving System*. Walker T., Krosinsky C., Hasan L. N., Kibsey S. D., pp. 165–196. Available at: https://doi.org/10.1007/978-3-319-94565-1_7.
- Keeyes, L.A. and Huemann, M.** (2017) ‘Project benefits co-creation: Shaping sustainable development benefits’, *International Journal of Project Management*, 35(6), pp. 1196–1212. Available at: <https://doi.org/10.1016/j.ijproman.2017.02.008>.
- Kempeneer, S., Peeters, M. and Compernelle, T.** (2021) ‘Bringing the User Back in the Building: An Analysis of ESG in Real Estate and a Behavioral Framework to Guide Future Research’, *Sustainability*, 13(6), p. 3239. Available at: <https://doi.org/10.3390/su13063239>.
- Kerr, D.S. and Murthy, U.S.** (2004) ‘Divergent and Convergent Idea Generation in Teams: A Comparison of Computer-Mediated and Face-to-Face Communication’, *Group Decision and Negotiation*, 13(4), pp. 381–399. Available at: <https://doi.org/10.1023/B:GRUP.0000042960.38411.52>.
- KfW** (2026) *KfW – Responsible banking*, <https://www.kfw.de/About-KfW/>. Available at: <https://www.kfw.de/About-KfW/> (Accessed: 12 February 2026).
- Kiani Mavi, R., Gengatharen, D., Kiani Mavi, N., Hughes, R., Campbell, A. and Yates, R.** (2021) ‘Sustainability in Construction Projects: A Systematic Literature Review’, *Sustainability*, 13(4), p. 1932. Available at: <https://doi.org/10.3390/su13041932>.
- Kim, S. and Chang, S.** (2022) ‘Construction Project Level-based Environmental, Social, and Governance (C-ESG): A Review’, *EPiC Series in Built Environment*, 3, pp. 236–244.

Kinater (2011) 'Projektentwicklung', in N.B. Rottke and M. Thomas (eds.) *immobilienwirtschaftslehre - management*. Cologne: immobilien manager verlag, pp. 503–531.

Kinzing, J. and Ouvarova, I. (2022) 'Einfluss von ESG-Kriterien auf Immobilieninvestments', in H. Schäfer, E. Stephan, and Vogel. F. (eds.) *Innovative Nachhaltigkeit in Einrichtungen der betrieblichen Altersversorgung*. Wiesbaden: Springer, pp. 219–231.

Klotschke, K., Wagner, B. and Pfnür, A. (2022) 'Potentials and challenges of agile project management in real estate development', *Arbeitspapiere zur immobilienwirtschaftlichen Forschung und Praxis*, 44, pp. 1–35.

Koch, C., Buser, M. and Andersson, R. (2023) 'The Impact of the EU Taxonomy of Sustainable Finance on the Building Field', in G. Lindahl and S.C. Gottlieb (eds.) *SDGs in Construction Economics and Organization*. Wiesbaden: Springer, pp. 283–296. Available at: https://doi.org/10.1007/978-3-031-25498-7_20.

Koch, T., Ehrentraut, O., Neumann, M. and Pivac, A. (2017) *Prognos Studie Wohnungsbautag 2017*. Berlin. Available at: www.bdb-bfh.de (Accessed: 3 January 2023).

Kohlhepp, D.B. (2012) 'The Real Estate Development Matrix'. St. Petersburg, FL: The American Real Estate Society Meetings.

Konadu, R., Ahinful, G.S. and Owusu-Agyei, S. (2021) 'Corporate governance pillars and business sustainability: does stakeholder engagement matter?', *International Journal of Disclosure and Governance*, 18(3), pp. 269–289. Available at: <https://doi.org/10.1057/s41310-021-00115-3>.

Kostrikin, P. and Andreeva, A. (2023) 'ESG-criteria for low-rise housing construction projects', *VIII INTERNATIONAL SCIENTIFIC AND TECHNICAL CONFERENCE "SOLVING ENVIRONMENTAL PROBLEMS IN THE CONSTRUCTION INDUSTRY*. Ho Chi Minh City, p. 050003. Available at: <https://doi.org/10.1063/5.0133359>.

Kothandath, S. (2018) 'Project Success Criteria Preferences', *IUJ journal of management*, 6(2), pp. 73–77.

Kotulla, T. (2020) *Preisgebundener Mietwohnungsbau in Deutschland: Identifikation relevanter Entwicklungspotentiale für die Neubauförderung*. Schriftenreihe des Lehr- und Forschungsgebiets für Immobilienprojektentwicklung.

van der Krabben, E. and Boekema, F. (1994) 'Missing links between urban economic growth theory and real estate development processes: Economic growth and building

investments in the city of 's-Hertogenbosch', *Journal of Property Research*, 11(2), pp. 111–129. Available at: <https://doi.org/10.1080/09599919408724109>.

Krieger, S., Kortmann, K., Kott, K. and Schöneich, C. (2021) *Wohnen Auszug aus dem Datenreport 2021*. Wiesbaden.

Krueger, R. and Casey, M. (1998) *Moderating focus groups (Focus Group Kit 4)*. Thousand Oaks: Sage Publications.

Krueger, R.A. and Casey, M.A. (2014) *Focus Groups A Practical Guide for Applied Research*. Los Angeles: Sage.

Kumar, S. (2023) 'A REVIEW OF ESG INTEGRATION & RETURN OF FINANCIAL INSTRUMENTS IN VARIOUS MARKET SEGMENT AND SOCIETIES Synthesis of Ethical Issues in Credit Derivatives View project', *Academy of Marketing Studies Journal*, 27(3), pp. 1–8. Available at: <https://www.researchgate.net/publication/366594045>.

Kumar, S. and Antonenko, P. (2014) 'Connecting practice, theory and method: Supporting professional doctoral students in developing conceptual frameworks.', *Tech Trends*, 58(4), pp. 54–62.

Kurzrock, B.-M. (2011) 'Lebenszyklus von Immobilien', *immobilienwirtschaftslehre - management*. Cologne: Immobilien Manager Verlag, pp. 421–446.

Kyriakogkonas, P., Garefalakis, A., Pappa, E. and Kagias, P. (2022) 'Sustainable Project Management under the Light of ESG Criteria: A Theoretical Approach', *Theoretical Economics Letters*, 12(06), pp. 1517–1538. Available at: <https://doi.org/10.4236/tel.2022.126083>.

de la Cruz López, M.P., Cartelle Barros, J.J., Del Caño Gochi, A. and Lara Coira, M. (2021) 'New approach for managing sustainability in projects', *Sustainability (Switzerland)*, 13(13). Available at: <https://doi.org/10.3390/su13137037>.

Labaree, R. V. (2013) *Organizing Your Social Sciences Research Paper*. Los Angeles.

Lai, L.W.C. and Lorne, F.T. (2019) 'Sustainable Urban Renewal and Built Heritage Conservation in a Global Real Estate Revolution', *Sustainability*, 11(3), p. 850. Available at: <https://doi.org/10.3390/su11030850>.

Lakenbrink, S. (2021) 'Instrumente zur Messung von ESG Kriterien und Taxonomie', in T. Veith, C. Conrads, and F. Hackelberg (eds.) *ESG in der Immobilienwirtschaft*. Freiburg: Haufe Lexware, pp. 273–282.

- Lampert, T. and Ziese, T.** (2005) *Armut, soziale Ungleichheit und Gesundheit*. Berlin . Available at: http://www.armuts-und-reichtumsbericht.de/SharedDocs/Downloads/Berichte/zweiter-armuts-reichtumsbericht-publikation-armut-soziale-ungleichheit-und-gesundheit.pdf%3F__blob%3DpublicationFile%26v%3D2 (Accessed: 13 January 2023).
- Laning, D.L.** (1978) ‘Some Interrelated Aspects of Real Estate Development Planning’, *Cumb. L. Rev.*, p. 789.
- Lapinski, A.R., Horman, M.J. and Riley, D.R.** (2006) ‘Lean Processes for Sustainable Project Delivery’, *Journal of Construction Engineering and Management*, 132(10). Available at: [https://doi.org/10.1061/\(asce\)0733-9364\(2006\)132:10\(1083\)](https://doi.org/10.1061/(asce)0733-9364(2006)132:10(1083)).
- Latif, B., Mahmood, Z., Tze San, O., Mohd Said, R. and Bakhsh, A.** (2020) ‘Coercive, Normative and Mimetic Pressures as Drivers of Environmental Management Accounting Adoption’, *Sustainability*, 12(11), p. 4506. Available at: <https://doi.org/10.3390/su12114506>.
- Lebhuhn, H., Holm, A., Junker, S. and Neitzel, K.** (2017) *Wohnverhältnisse in Deutschland-eine Analyse der sozialen Lage in 77 Großstädten ‘Sozialer Wohnversorgungsbedarf’*. Berlin/Dusseldorf. Available at: <https://www.boeckler.de/11145.htm?projekt=2016-299-4> (Accessed: 3 January 2023).
- Lederer, L., Ellingerová, H., Ďubek, S., Bočkaj, J. and Ďubek, M.** (2024) ‘Construction Price Forecasting Models in the Construction Industry: A Comparative Analysis’, *Buildings*, 14(5), p. 1325. Available at: <https://doi.org/10.3390/buildings14051325>.
- Lee, C.L., Yam, S., Susilawati, C. and Blake, A.** (2024) ‘The Future Property Workforce: Challenges and Opportunities for Property Professionals in the Changing Landscape’, *Buildings*, 14(1), p. 224. Available at: <https://doi.org/10.3390/buildings14010224>.
- van der Leer, J., Femenias, P. and Granath, K.** (2026) ‘Implementing minimum energy performance requirements “from the middle”: shifting levels of agency and capacity of housing developers in Sweden’, *Energy Policy*, 208, p. 114901. Available at: <https://doi.org/10.1016/j.enpol.2025.114901>.
- Leshem, S. and Trafford, V.** (2007) ‘Overlooking the conceptual framework’, *Innovations in Education and Teaching International*, pp. 93–105. Available at: <https://doi.org/10.1080/14703290601081407>.
- Lester, S.** (2004) ‘Conceptualising the practitioner doctorate’, *UK Studies in Higher Education*, 29(5), pp. 1–13.

Levy, D. (2006) 'Qualitative Methodology and Grounded Theory in Property Research', *Pacific Rim Property Research Journal*, 12(4), pp. 369–388. Available at: <https://doi.org/10.1080/14445921.2006.11104216>.

Levy, D. and Henry, M. (2003) 'A COMPARATIVE ANALYSIS OF US, UK AND AUSTRALIAN PUBLISHED PROPERTY RESEARCH METHODOLOGIES AND METHODS', *Pacific rim property research journal*, 9(2), p. 148162.

Li, F., Liu, X., Hu, D., Wang, R., Yang, W., Li, D. and Zhao, D. (2009) 'Measurement indicators and an evaluation approach for assessing urban sustainable development: A case study for China's Jining City', *Landscape and Urban Planning*, 90(3–4). Available at: <https://doi.org/10.1016/j.landurbplan.2008.10.022>.

Li, T.-T., Wang, K., Sueyoshi, T., Wang, D.D. and Almeida, F. (2021) 'ESG: Research Progress and Future Prospects', *Sustainability*, 13(11663), pp. 1–28. Available at: <https://doi.org/10.3390/su132111663>.

Li, Y., Li, M., Sang, P., Chen, P. and Li, C. (2022) 'Stakeholder studies of green buildings: A literature review', *Journal of Building Engineering*, 54, p. 104667. Available at: <https://doi.org/10.1016/j.jobbe.2022.104667>.

Lincoln, Y.S. and Guba, E.G. (1985) *Naturalistic Inquiry*. Beverly Hills: Sage.

Lincoln, Y.S., Lynham, S.A. and Guba, E.G. (2018) 'Paradigmatic controversies, contradictions and emerging confluences revisited', in N.K. Denzin and Y.S. Lincoln (eds.) *The Sage Handbook of Qualitative Research*. Los Angeles: Sage, pp. 108–150.

Lindheim, T. (2022) 'Participant Validation: A Strategy to Strengthen the Trustworthiness of Your Study and Address Ethical Concerns', *Researching Values*. Cham: Springer International Publishing, pp. 225–239. Available at: https://doi.org/10.1007/978-3-030-90769-3_13.

Lindholm, A.-L. and Nenonen, S. (2006) 'A conceptual framework of CREM performance measurement tools', *Journal of Corporate Real Estate*, 8(3), pp. 108–119. Available at: <https://doi.org/10.1108/14630010610711739>.

Liu, N., Zhao, Y., Yan, B. and Hutchison, N. (2025) 'Tenants' ESG: influence on preferences and rent premiums for green buildings in commercial real estate', *Journal of Property Research*, 42(4), pp. 321–355. Available at: <https://doi.org/10.1080/09599916.2025.2494562>.

Lokuwaduge, C.S.D.S. and Heenetigala, K. (2017) 'Integrating Environmental, Social and Governance (ESG) Disclosure for a Sustainable Development: An Australian Study',

Business Strategy and the Environment, 26(4), pp. 438–450. Available at: <https://doi.org/10.1002/bse.1927>.

Lucuik, M., Trusty, W., Larsson, N. and Charette, R. (2012) *A Business Case for Green Buildings in Canada*, Ottawa. Ottawa.

Luo, B.N., Tang, Y., Chen, E.W., Li, S. and Luo, D. (2020) ‘Corporate Sustainability Paradox Management: A Systematic Review and Future Agenda’, *Frontiers in Psychology*, 11. Available at: <https://doi.org/10.3389/fpsyg.2020.579272>.

Lützkendorf, T. and Balouktsi, M. (2022) ‘Embodied carbon emissions in buildings: explanations, interpretations, recommendations’, *Buildings and Cities*, 3(1), pp. 964–973. Available at: <https://doi.org/10.5334/bc.257>.

Lützkendorf, T. and Lorenz, D. (2005) *Nachhaltigkeitsorientierte Investments im Immobilienbereich –Trends, Theorie und Typologie*. Karlsruhe: Stiftungslehrstuhl Ökonomie und Ökologie des Wohnungsbaus, Universität Karlsruhe (TH).

Ma, L., Liu, H.J., Edwards, D.J. and Sing, M.C.P. (2021) ‘Housing price dynamics on residential construction: A case study of the Australian property sector’, *Structural Change and Economic Dynamics*, 59, pp. 525–532. Available at: <https://doi.org/10.1016/j.strueco.2021.10.001>.

Di Maddolini, F. (2018) *Stakeholder Inclusiveness in Megaprojects: Managing the locals for sustainable developments*. London: Kingston University London.

Makkonen, T. (2022) ‘Board diversity and firm innovation: a meta-analysis’, *European Journal of Innovation Management*, 25(6), pp. 941–960. Available at: <https://doi.org/10.1108/EJIM-09-2021-0474>.

Marcelino-Sádaba, S., González-Jaen, L.F. and Pérez-Ezcurdia, A. (2015) ‘Using project management as a way to sustainability. from a comprehensive review to a framework definition’, *Journal of Cleaner Production*, 99, pp. 1–16. Available at: <https://doi.org/10.1016/j.jclepro.2015.03.020>.

Marshall, B., Cardon, P., Poddar, A. and Fontenot, R. (2013) ‘Does Sample Size Matter in Qualitative Research?: A Review of Qualitative Interviews in is Research’, *Journal of Computer Information Systems*, 54(1), pp. 11–22. Available at: <https://doi.org/10.1080/08874417.2013.11645667>.

Martens, M.L. and Carvalho, M.M. (2017) ‘Key factors of sustainability in project management context: A survey exploring the project managers’ perspective’, *International*

Journal of Project Management, 35(6), pp. 1084–1102. Available at: <https://doi.org/10.1016/j.ijproman.2016.04.004>.

Martinez, C. and Olander, S. (2015) ‘Stakeholder Participation for Sustainable Property Development’, *Procedia Economics and Finance*, 21, pp. 57–63. Available at: [https://doi.org/10.1016/S2212-5671\(15\)00150-1](https://doi.org/10.1016/S2212-5671(15)00150-1).

Martinsen, Å.R., Andersson Nordbø, E.C. and Ihlebæk, C. (2025) ‘Revisiting the conceptualization of social sustainability from a health promotion perspective: a scoping review’, *Scandinavian Journal of Public Health*, 53(2), pp. 172–183. Available at: <https://doi.org/10.1177/14034948241277863>.

Mason, M. (2010) ‘Sample Size and Saturation in PhD Studies Using Qualitative Interviews’, *FORUM: QUALITATIVE SOCIAL RESEARCH SOZIALFORSCHUNG*, 3(8), pp. 1–20.

Masrom, M.A., Skitmore, M. and Bridge, A. (2013) ‘Determinants of contractor satisfaction’, *Construction Management and Economics*, 31(7), pp. 761–779. Available at: <https://doi.org/10.1080/01446193.2013.814919>.

Massey, O.T. (2011) ‘A proposed model for the analysis and interpretation of focus groups in evaluation research’, *Evaluation and Program Planning*, 34(1), pp. 21–28. Available at: <https://doi.org/10.1016/j.evalprogplan.2010.06.003>.

Masuri, M.R.A. (2015) *OPTIMISING THE ROLE OF FACILITIES MANAGEMENT (FM) IN THE PROPERTY DEVELOPMENT PROCESS (DP): THE DEVELOPMENT OF AN FM-DP INTEGRATION FRAMEWORK*.

Material Economics (2021) *The Circular Economy a Powerful Force for Climate Mitigation*. Stockholm .

Matos, P. (2020) *ESG AND RESPONSIBLE INSTITUTIONAL INVESTING AROUND THE WORLD A CRITICAL REVIEW*. Charlottesville.

Matten, D. and Moon, J. (2008) “‘Implicit” and “Explicit” CSR: A Conceptual Framework for a Comparative Understanding of Corporate Social Responsibility’, *Academy of Management Review*, 33(2), pp. 404–424. Available at: <https://doi.org/10.5465/amr.2008.31193458>.

Maxwell, J.A. (2008) ‘Designing a Qualitative Study’, in L. Bickman and D.J. Rog (eds.) *The SAGE Handbook of Applied Social Research Methods*. 2nd ed. Thousand Oaks: SAGE Publications, Inc., pp. 214–254.

May, T. (2002) *Qualitative Research in Action*. London: Sage.

- Mayring, P.** (1994) 'Qualitative Inhaltsanalyse', in A. Boehm, A. Mengel, and T. Muhr (eds.) *Texte verstehen : Konzepte, Methoden, Werkzeuge*. Universitätsverlag Konstanz, pp. 159–175.
- Mazzei, L.A.** (2007) 'Toward a problematic of silence in action research', *Educational Action Research*, 15(4), pp. 631–642. Available at: <https://doi.org/10.1080/09650790701664054>.
- Medineckien, M., Turskis, Z. and Zavadskas, E.K.** (2010) 'SUSTAINABLE CONSTRUCTION TAKING INTO ACCOUNT THE BUILDING IMPACT ON THE ENVIRONMENT', *JOURNAL OF ENVIRONMENTAL ENGINEERING AND LANDSCAPE MANAGEMENT*, 18(2), pp. 118–127. Available at: <https://doi.org/10.3846/jeelm.2010.14>.
- Meijer, R. and Buitelaar, E.** (2023) 'What drives developers? Understanding vertical (dis)integration strategies in the land development process', *Land Use Policy*, 131, p. 106718. Available at: <https://doi.org/10.1016/j.landusepol.2023.106718>.
- Meinen, H. and Franz, M.** (2025) 'Ziele einer nachhaltigen Immobilien-Projektentwicklung – eine systematische Literaturlauswertung', *Raumforschung und Raumordnung | Spatial Research and Planning*, 83(5), pp. 395–412. Available at: <https://doi.org/10.14512/rur.3062>.
- Meuser, M. and Nagel, U.** (1991) 'ExpertInneninterviews - vielfach erprobt, wenig bedacht: ein Beitrag zur qualitativen Methodendiskussion', in D. Garz and K. Kraimer (eds.) *Qualitativ-empirische Sozialforschung : Konzepte, Methoden, Analysen*. Opladen, pp. 441–471.
- Meyer, J.W. and Rowan, B.** (1977) 'Institutionalized Organizations: Formal Structure as Myth and Ceremony', *American Journal of Sociology*, 83(2), pp. 340–363. Available at: <https://doi.org/10.1086/226550>.
- Miles, M. and Wurtzebach, C.H.** (1977) 'Risk analysis in the real property development process: a conceptual framework and a computer simulation model', *Journal of Business Research*, 5(4), pp. 325–357.
- Miles, M.E., Berens, G. and Weiss, M.A.** (2007) *Real Estate Development - Principles and Process*. 4th ed. Washington, D. C. : Urban Land Institute.
- Miller, N., Spivey, J. and Florance, A.** (2008) 'Does Green Pay Off?', *Journal of Real Estate Portfolio Management*, 14(4), pp. 385–400. Available at: <https://doi.org/10.1080/10835547.2008.12089822>.

- Missimer, M., Robèrt, K.-H. and Broman, G.** (2017) 'A strategic approach to social sustainability – Part 1: exploring the social system', *Journal of Cleaner Production*, 140, pp. 32–41. Available at: <https://doi.org/10.1016/j.jclepro.2016.03.170>.
- Mitchell, R.K., Agle, B.R. and Wood, D.J.** (1997) 'Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts', *The Academy of Management Review*, 22(4), p. 853. Available at: <https://doi.org/10.2307/259247>.
- Mohamed, R.** (2009) 'Why do residential developer prefer large exurban lots? Infrastrucutre costs and exurban development', *Environment and Planning B: Planning and Design*, 36(1), pp. 12–29.
- Montgomery, N., Squires, G. and Syed, I.** (2018) 'Disruptive potential of real estate crowdfunding in the real estate project finance industry', *Property Management*, 36(5), pp. 597–619. Available at: <https://doi.org/10.1108/PM-04-2018-0032>.
- Moorhead, M., Armitage, L. and Skitmore, M.** (2021) 'Risk management processes used in determining project feasibility in the property development process early stages by Australia/New Zealand property developers', *Journal of Property Investment & Finance* [Preprint]. Available at: <https://doi.org/10.1108/JPIF-08-2021-0071>.
- Moorhead, M., Armitage, L. and Skitmore, M.** (2023) 'Feasibility practices of types of property developers', *Journal of Property Investment & Finance*, 41(1), pp. 92–105. Available at: <https://doi.org/10.1108/JPIF-03-2022-0022>.
- Morgan, D.L.** (1997) 'Focus Groups as Qualitative Research', *Qualitative Research Methods*. 16th ed.
- Morgante, F.C., Gholamzadehmir, M., Sdino, L. and Rosasco, P.** (2023) 'How to invest in the “Market of Sustainability”: Evaluating the impacts of a Real Estate investment across ESG criteria', *Journal Valori e Valutazioni*, 33, pp. 65–83.
- Morse, J.M.** (2015) 'Critical Analysis of Strategies for Determining Rigor in Qualitative Inquiry', *Qualitative Health Research*, 25(9), pp. 1212–1222. Available at: <https://doi.org/10.1177/1049732315588501>.
- Morse, J.M., Barrett, M., Mayan, M., Olson, K. and Spiers, J.** (2002) 'Verification Strategies for Establishing Reliability and Validity in Qualitative Research', *International Journal of Qualitative Methods*, 1(2), pp. 13–22. Available at: <https://doi.org/10.1177/160940690200100202>.

- Moullin, J.C., Dickson, K.S., Stadnick, N.A., Albers, B., Nilsen, P., Broder-Fingert, S., Mukasa, B. and Aarons, G.A.** (2020) ‘Ten recommendations for using implementation frameworks in research and practice’, *Implementation Science Communications*, 1(1), p. 42. Available at: <https://doi.org/10.1186/s43058-020-00023-7>.
- MSCI** (2021) *What is the EU Sustainable Finance Disclosure Regulation (SFDR)?*
- Müller, R., Caron, M.-A., Drouin, N., Lereim, J., Alonderienė, R., Chmieliauskas, A., Šimkonis, S. and Šuminskienė, R.** (2025) ‘Governance of ESG implementations: governance dimensions and their structural implementation’, *International Journal of Managing Projects in Business*, 18(1), pp. 118–138. Available at: <https://doi.org/10.1108/IJMPB-05-2024-0107>.
- Müller, R., Turner, J.R., Andersen, E.S., Shao, J. and Kvalnes, Ø.** (2016) ‘Governance and Ethics in Temporary Organizations: The Mediating Role of Corporate Governance’, *Project Management Journal*, 47(6), pp. 7–23. Available at: <https://doi.org/10.1177/875697281604700602>.
- Munns, A. and Bjeirmi, B.** (1996) ‘The role of project management in achieving project success’, *International Journal of Project Management*, 14(2), pp. 81–87. Available at: [https://doi.org/10.1016/0263-7863\(95\)00057-7](https://doi.org/10.1016/0263-7863(95)00057-7).
- Musawir, A. u., Abd-Karim, S.B. and Mohd-Danuri, M.S.** (2020) ‘Project governance and its role in enabling organizational strategy implementation: A systematic literature review’, *International Journal of Project Management*, 38(1), pp. 1–16. Available at: <https://doi.org/10.1016/j.ijproman.2019.09.007>.
- Muthers, S. and Matzarakis, A.** (2018) ‘Hitzewellen in Deutschland und Europa’, in J.L. Lozan, S.W. Breckle, H. Graßl, D. Kasang, and R. Weisse (eds.) *Warnsignal Klima: Extremereignisse*, pp. 83–91.
- Mutlu, A., Roy, D. and Filatova, T.** (2023) ‘Capitalized value of evolving flood risks discount and nature-based solution premiums on property prices’, *Ecological Economics*, 205, p. 107682. Available at: <https://doi.org/10.1016/j.ecolecon.2022.107682>.
- Mwando, S.M., Mooya, M.M. and Musvoto, E.** (2024) ‘A Systematic Review of Locational Decisions of Property Developers’, *AfRES 2024 Conference Proceedings*. Livingstone: AfRES , pp. 159–173.
- Mwita, K.** (2022) ‘Strengths and weaknesses of qualitative research in social science studies’, *International Journal of Research in Business and Social Science* (2147- 4478), 11(6), pp. 618–625. Available at: <https://doi.org/10.20525/ijrbs.v11i6.1920>.

Naeem, N., Irfan, A.R. and Abdur, R.N. (2023) 'Digital real estate: a review of the technologies and tools transforming the industry and society', *Smart Construction and Sustainable Cities*, 1(15).

Nastansky, A. (2012) 'Wechselbeziehungen zwischen Immobilienmarkt und Makroökonomie', in N.B. Rottke and M. Voigtländer (eds.) *immobilienwirtschaftslehre band II - oekonomie*. Cologne: immobilien manager verlag, pp. 163–210.

Nayar, N., Price, S.M. and Shen, K. (2024) 'Macroeconomic Uncertainty and Predictability of Real Estate Returns: The Impact of Asset Liquidity', *Journal of Real Estate Research*, 46(1), pp. 82–113. Available at: <https://doi.org/10.1080/08965803.2023.2211812>.

van Nes, F., Abma, T., Jonsson, H. and Deeg, D. (2010) 'Language differences in qualitative research: Is meaning lost in translation?', *European Journal of Ageing*, 7(4), pp. 313–316. Available at: <https://doi.org/10.1007/s10433-010-0168-y>.

Neuhaus, E.-M. (2022) 'Die Sehnsucht nach Erneuerung – tragfähige Ideen, um Bürogebäude und Räume zukunftsfähig zu machen', *Auf dem Weg zu einer nachhaltigen, effizienten und profitablen Wertschöpfung von Gebäuden*. Wiesbaden: Springer Vieweg, pp. 499–516. Available at: https://doi.org/10.1007/978-3-658-34962-2_29.

Newell, G. (2023a) 'Real Estate Insights The future of property research', *Journal of Property Investment & Finance* [Preprint]. Available at: <https://doi.org/10.1108/JPIF-05-2023-0042>.

Newell, G. (2023b) 'Real Estate Insights The increasing importance of the “S” dimension in ESG', *Journal of Property Investment and Finance*, 41(4), pp. 453–459. Available at: <https://doi.org/10.1108/JPIF-01-2023-0003>.

Newell, G., Nanda, A. and Moss, A. (2023) 'Improving the benchmarking of ESG in real estate investment', *Journal of Property Investment & Finance* [Preprint]. Available at: <https://doi.org/10.1108/jpif-10-2021-0084>.

Newell, G. and Sieracki, K. (2009) *Global Trends in Real Estate Finance*. Chichester, West Sussex: John Wiley & Sons.

Newell, G. and Steglick, M. (2006) 'ASSESSING THE IMPORTANCE OF PROPERTY DEVELOPMENT RISK FACTORS ', *Pacific Rim Property Research Journal*, 12(1), pp. 22–38.

Nielsen, K.P. and Noergaard, R.W. (2011) 'CSR and mainstream investing: a new match?—an analysis of the existing ESG integration methods in theory and practice and the way

forward', *Journal of Sustainable Finance and Investment*, 1(3–4), pp. 209–221. Available at: <https://doi.org/10.1080/20430795.2012.655889>.

Van Nieuwerburgh, S. (2023) 'The remote work revolution: Impact on real estate values and the urban environment: 2023 AREUEA Presidential Address', *Real Estate Economics*, 51(1), pp. 7–48. Available at: <https://doi.org/10.1111/1540-6229.12422>.

Norang, H., Støre-Valen, M., Kvale, N. and Temeljotov-Salaj, A. (2023) 'Norwegian stakeholder's attitudes towards EU taxonomy', *Facilities*, 41(5/6), pp. 407–433. Available at: <https://doi.org/10.1108/F-03-2022-0051>.

Nosratabadi, S., Mosavi, A., Shamshirband, S., Zavadskas, E.K., Rakotonirainy, A. and Chau, K.W. (2019) 'Sustainable business models: A review', *Sustainability (Switzerland)*, 11(6). Available at: <https://doi.org/10.3390/su11061663>.

Nowell, L.S., Norris, J.M., White, D.E. and Moules, N.J. (2017) 'Thematic Analysis', *International Journal of Qualitative Methods*, 16(1). Available at: <https://doi.org/10.1177/1609406917733847>.

Nyoni, V., Broberg Piller, W. and Vigren, O. (2023) 'Sustainability action in the real estate sector — An organizational and institutional perspective', *Cleaner Production Letters*, 5. Available at: <https://doi.org/10.1016/j.clpl.2023.100049>.

O'Mara, M. (1999) *Strategy and Place: Managing Corporate Real Estate and Facilities for Competitive Advantage*. New York: The Free Press.

Ocampo, J. and Schneckenberg, D. (2022) 'TECHNOLOGY ACCEPTANCE BARRIERS IN REAL ESTATE', *EURAM 2022 Leading Digital Transformation*. Winterthur/Zurich: European Academy of Management, pp. 1–33.

O'Cathain, A., Hoddinott, P., Lewin, S., Thomas, K.J., Young, B., Adamson, J., Jansen, Y.JFM., Mills, N., Moore, G. and Donovan, J.L. (2015) 'Maximising the impact of qualitative research in feasibility studies for randomised controlled trials: guidance for researchers', *Pilot and Feasibility Studies*, 1(1), p. 32. Available at: <https://doi.org/10.1186/s40814-015-0026-y>.

Ochieng, E.G. (2008) *Framework for managing multi-cultural project teams*. Loughborough University.

Ochieng, E.G., Wynn, T.S., Zuofa, T., Ruan X., Price A. D. F. and Okafor, C. (2014) 'Integration of Sustainability Principles into Construction Project Delivery', *Journal of Architectural Engineering Technology*, 03(01). Available at: <https://doi.org/10.4172/2168-9717.1000116>.

- O'Connor, J.T., Torres, N. and Woo, J.** (2016) 'Sustainability Actions during the Construction Phase', *Journal of Construction Engineering and Management*, 142(7). Available at: [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001128](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001128).
- Oebbecke, T.** (2021) 'ESG in der Projektentwicklung - Planungs- und Bauprozesse', in T. Veith, C. Conrads, and H. Hackelberg (eds.) *ESG in der Immobilienwirtschaft*. Haufe.
- OECD** (2004) *OECD Principles of Corporate Governance - 2004 Edition*. Paris. Available at: www.SourceOECD.org, (Accessed: 15 January 2023).
- OECD** (2023) *Improving the Landscape for Sustainable Infrastructure Financing*. Paris. Available at: <https://doi.org/10.1787/bc2757cd-en>.
- Olsson, N.O.E., Sørensen, A.Ø. and Leikvam, G.** (2015) 'On the Need for Iterative Real Estate Project Models – Applying Agile Methods in Real Estate Developments', *Procedia Economics and Finance*, 21, pp. 524–531. Available at: [https://doi.org/10.1016/s2212-5671\(15\)00208-7](https://doi.org/10.1016/s2212-5671(15)00208-7).
- Omamode, H.O., Ndubuisi, L.N., Nsisong, L.E.-O., Valentine, I.I. and Preye, W.B.** (2024) 'Sustainability in project management: A comprehensive review', *World Journal of Advanced Research and Reviews*, 21(1), pp. 656–677. Available at: <https://doi.org/10.30574/wjarr.2024.21.1.0060>.
- Onwuegbuzie, A.J., Dickinson, W.B., Leech, N.L. and Zoran, A.G.** (2009) 'A Qualitative Framework for Collecting and Analyzing Data in Focus Group Research', *International Journal of Qualitative Methods*, 8(3), pp. 1–21. Available at: <https://doi.org/10.1177/160940690900800301>.
- Ooi, J.T.L. and Dung, D.D.Q.** (2019) 'Finding Superior Returns in Green Portfolios: Evidence from Singapore REITs', *Journal of Sustainable Real Estate*, 11(1), pp. 191–215. Available at: <https://doi.org/10.22300/1949-8276.11.1.191>.
- Orlitzky, M.** (2011) 'Institutional logics in the study of organizations: the social construction of the relationship between corporate social and financial performance', *Business Ethics Quarterly*, 21(3), pp. 409–444.
- Oțoiu, A. and Grădinaru, G.** (2018) 'Proposing a composite environmental index to account for the actual state and changes in environmental dimensions, as a critique to EPI', *Ecological Indicators*, 93, pp. 1209–1221. Available at: <https://doi.org/10.1016/j.ecolind.2018.06.009>.

- Park, S.R. and Jang, J.Y.** (2021) 'The Impact of ESG Management on Investment Decision: Institutional Investors' Perceptions of Country-Specific ESG Criteria', *International Journal of Financial Studies*, 9(3), p. 48. Available at: <https://doi.org/10.3390/ijfs9030048>.
- Patton, Q.M.** (1987) *How to use qualitative methods in evaluation*. London: Sage Publications.
- Peca, S.P.** (2009) *Real Estate Development and Investment*. Hoboken: John Wiley & Sons.
- Peiser, R.B. and Frej, A.B.** (2008) *Professional Real Estate Development; The ULI Guide to the Business*. Washington: Urban Land Institute.
- Peiser, R.B. and Hamilton, D.** (2012) *Professional Real Estate Development: The ULI Guide to Business*. Washington D.C. .
- Peloza, J.** (2009) 'The challenge of measuring financial impacts from investments in corporate social performance', *Journal of Management*, 35(6). Available at: <https://doi.org/10.1177/0149206309335188>.
- Pfnür, A.; and Wagner, B.** (2018) 'Transformation der Immobilienwirtschaft: Eine empirische Studie deutscher immobilienwirtschaftlicher Akteure', *Arbeitspapiere zur immobilienwirtschaftlichen Forschung und Praxis*, 37, pp. 1–151. Available at: www.immobiliens-forschung.de (Accessed: 12 October 2022).
- Pichola, I., Średzińska, I., Krupa, W. and Garcia-Rodriguez, R.** (2021) 'ESG Real Estate Insights 2021 | Article # 7 ESG as real estate value driver', *Deloitte* [Preprint].
- Pike, J.** (2020) 'The future of sustainable real estate investments in a post-COVID-19 world', *Journal of European Real Estate Research*, 13(3), pp. 455–460. Available at: <https://doi.org/10.1108/JERER-07-2020-0042>.
- Pitt, M., Tucker, M., Riley, M. and Longden, J.** (2009) 'Towards sustainable construction: Promotion and best practices', *Construction Innovation*, 9(2). Available at: <https://doi.org/10.1108/14714170910950830>.
- Pivo, G.** (2008) 'Responsible property investing: what the leaders are doing', *Journal of Property Investment & Finance*, 26(6), pp. 562–576. Available at: <https://doi.org/10.1108/14635780810908406>.
- Poland, B. and Pederson, A.** (1998) 'Reading Between the Lines: Interpreting Silences in Qualitative Research', *Qualitative Inquiry*, 4(2), pp. 293–312. Available at: <https://doi.org/10.1177/107780049800400209>.

Poliandri, D., Perazzolo, M., Pillera, G.C. and Giampietro, L. (2023) 'Dematerialized participation challenges: Methods and practices for online focus groups', *Frontiers in Sociology*, 8. Available at: <https://doi.org/10.3389/fsoc.2023.1145264>.

Pollman, E. (2022) 'The Making and Meaning of ESG', *University of Pennsylvania, Institute for Law & Economic Research*, 659/2022(22–23). Available at: <https://ssrn.com/abstract=4219857> (Accessed: 27 May 2026).

Pommer, A. and Herten, A. (2014) *Aktualisierung Studienbrief »Projektentwicklung«*. Weimar.

Porter, M. and Kramer, M. (2006) 'Strategy and society: the link between competitive advantage and corporate social responsibility', *Harvard Business Review*, 84(12), pp. 79–92.

Prakash, A. and Potoski, M. (2014) 'Global Private Regimes, Domestic Public Law: ISO 14001 and Pollution Reduction', *Comparative Political Studies*, 47(3). Available at: <https://doi.org/10.1177/0010414013509573>.

Prashar, A. and Gupta, P. (2021) 'Corporate boards and firm performance: a meta-analytic approach to examine the impact of contextual factors', *International Journal of Emerging Markets*, 16(7), pp. 1454–1478. Available at: <https://doi.org/10.1108/IJOEM-10-2019-0860>.

PRI (2022) *An introduction to responsible investment: real estate | Introductory guide | PRI, PRI*. Available at: <https://www.unpri.org/introductory-guides-to-responsible-investment/an-introduction-to-responsible-investment-real-estate/5628.article> (Accessed: 25 February 2023).

Qasem, A., AL-Duais, S.D., Wan-Hussin, W.N., Bamahros, H.M., Alquhaif, A. and Thomran, M. (2022) 'Institutional Ownership Types and ESG Reporting: The Case of Saudi Listed Firms', *Sustainability*, 14(18), p. 11316. Available at: <https://doi.org/10.3390/su141811316>.

Qian, Q.K., Visscher, H.J. and Lehmann, S. (2015) 'Modelling the Green Building (GB) Investment Decisions of Developers and End-users with Transaction Costs (TCs) Considerations', *Journal of Cleaner Production*, pp. 315–325.

Raddatz, G. (2022) 'Armut und Ungleichheit in Deutschland: Empörungsdebatten führen in die Irre', *Argumente zu Marktwirtschaft und Politik*, (162), pp. 1–33. Available at: www.stiftung-marktwirtschaft.de (Accessed: 13 January 2023).

Rani, A., Singh, R., Taneja, S., Prasad, A.B. and Dhiman, S. (2021) 'A Review on Key Performance Indicators for Measuring Real Estate Project Success', *International Journal*

of *Sustainable Development and Planning*, 16(4), pp. 791–800. Available at: <https://doi.org/10.18280/ijstdp.160420>.

Rao, P.A., Rahman, M.M. and Duraman, S.B. (2025) ‘Adopting circular economy in construction: a review’, *Frontiers in Built Environment*, 11. Available at: <https://doi.org/10.3389/fbuil.2025.1519219>.

Raslanas, S., Stasiukynas, A. and Krutinis, M. (2012) ‘SOME ASPECTS OF SUSTAINABLE REAL ESTATE DEVELOPMENT: A CASE STUDY OF DRUSKININKAI SNOW ARENA IN LITHUANIA’, *Ekonomika a management*, pp. 71–84.

Ravitch, S.M. and Carl, N.M. (2021) ‘Using Conceptual Frameworks in Research’, in Ravitch. S. M. and N.M. Carl (eds.) *Qualitative Research*. Thousand Oaks: SAGE Publications Inc. , pp. 32–62.

Refinitiv (2022) *ENVIRONMENTAL, SOCIAL AND GOVERNANCE SCORES FROM REFINITIV*. New York.

Reichardt, A., Fuerst, F., Rottke, N. and Zietz, J. (2012) ‘Sustainable Building Certification and the Rent Premium: A Panel Data Approach’, *Journal of Real Estate Research*, 34(1), pp. 99–126. Available at: <https://doi.org/10.1080/10835547.2012.12091325>.

Remoy, H., Schraven, D., Villalba, M. and Peeters, M. (2025) ‘Real estate investor decision-making behaviours for climate adaptation: an institutional theory perspective’, *31st Annual European Real Estate Society Conference*. European Real Estate Society. Available at: https://doi.org/10.15396/eres2025_132.

Renneboog, L., Ter Horst, J. and Zhang, C. (2008) ‘The price of ethics and stakeholder governance: The performance of socially responsible mutual funds’, *Journal of Corporate Finance*, 14(3), pp. 302–322. Available at: <https://doi.org/10.1016/J.JCORPFIN.2008.03.009>.

Reosti, A. (2020) “‘We Go Totally Subjective’: Discretion, Discrimination, and Tenant Screening in a Landlord’s Market’, *Law & Social Inquiry*, 45(3), pp. 618–657. Available at: <https://doi.org/10.1017/lsi.2019.81>.

Reymen, I.M.M.J., Dewulf, G.P.M.R. and Blokpoel, S.B. (2008) ‘Framework for managing uncertainty in property projects’, *Building Research & Information*, 36(6), pp. 580–592. Available at: <https://doi.org/10.1080/09613210802214259>.

- Rezaee, Z.** (2016) 'Business sustainability research: A theoretical and integrated perspective', *Journal of Accounting Literature*, 36(1), pp. 48–64. Available at: <https://doi.org/10.1016/j.acclit.2016.05.003>.
- Rivière, P., Verges, M., Dimou, M. and Garde, F.** (2013) 'Sustainable cities in tropical climates: Presentation of the “Beauséjour” case study in Reunion Island', *WIT Transactions on Ecology and the Environment*, 179 VOLUME 1. Available at: <https://doi.org/10.2495/SC130541>.
- Robin, E.** (2022) 'Performing real estate value(s): real estate developers, systems of expertise and the production of space', *Geoforum*, 134, pp. 205–215. Available at: <https://doi.org/10.1016/j.geoforum.2018.05.006>.
- Robinson, S. and McIntosh, M.G.** (2022) 'A Literature Review of Environmental, Social, and Governance (ESG) in Commercial Real Estate', *Journal of Real Estate Literature*, 30, pp. 54–67. Available at: <https://doi.org/10.1080/09277544.2022.2106639>.
- Rocco, T.S. and Plakhotnik, M.S.** (2009) 'Literature Reviews, Conceptual Frameworks, and Theoretical Frameworks: Terms, Functions, and Distinctions', *Human Resource Development Review*, 8(1), pp. 120–130. Available at: <https://doi.org/10.1177/1534484309332617>.
- Rodeck, M.** (2022) 'Das Büro der Zukunft. Neue Immobilien für neue Arbeit', *Transformation der Immobilienwirtschaft*. Wiesbaden: Springer Gabler, pp. 489–502. Available at: https://doi.org/10.1007/978-3-658-35363-6_29.
- Rolstadås, A., Tommelein, I., Morten Schiefloe, P. and Ballard, G.** (2014) 'Understanding project success through analysis of project management approach', *International Journal of Managing Projects in Business*, 7(4), pp. 638–660. Available at: <https://doi.org/10.1108/IJMPB-09-2013-0048>.
- Rottke, N.B. and Wernecke, M.** (2002) 'Real Estate Cycles in Germany – Causes, Empirical Analysis and Recommendations for the Management Decision Process', *8th Conference of the Pacific Rim Real Estate Society*. Christchurch: Pacific Rim Real Estate Society.
- Roulac, S.** (2001) 'Corporate Property Strategy is Integral to Corporate Business Strategy', *Journal of Real Estate Research*, 22(1–2), pp. 129–152. Available at: <https://doi.org/10.1080/10835547.2001.12091062>.

- Roulac, S., Adair, A., Allen, S., Berry, J., Brown, L. and McGreal, S.** (2006) ‘Real Estate Value: Creation and Destruction’, *Annual Meeting of the American Real Estate Society*. Key West: American Real Estate Society, pp. 1–20.
- Rowe, A.** (2016) ‘Environmental, Social and Governance (ESG) reporting – through the Chinese “lenses”’, *39th European Accounting Association (EAA) Congress*. Maastricht.
- Ruan, X., Ochieng, D.E., Zuofa, T. and Yang, M.** (2018) ‘An Appraisal of Lean Construction Project Delivery Application of Lean Construction’, *SSRN Electronic Journal* [Preprint]. Available at: <https://doi.org/10.2139/ssrn.3105427>.
- Ryan, E., Jarmulska, B., De Nora, G., Fontana, A. and Horan, A.** (2023) ‘Real estate markets in an environment of high financing costs’, *European Central Bank - Financial Stability Review*, 11.
- Ryan, G.W. and Bernard, H.R.** (2003) ‘Techniques to Identify Themes’, *Field Methods* [Preprint].
- Rynes, S.L., Bartunek, J.M. and Daft, R.L.** (2001) ‘Across the Great Divide: Knowledge Creation and Transfer Between Practitioners and Academics’, *Academy of Management Journal*, 44(2), pp. 340–355. Available at: <https://doi.org/10.5465/3069460>.
- Sabato, S. and Fronteddu, B.** (2020) ‘A socially just transition through the European Green Deal?’, *SSRN Electronic Journal* [Preprint]. Available at: <https://doi.org/10.2139/ssrn.3699367>.
- Sabini, L. and Alderman, N.** (2021) ‘The Paradoxical Profession: Project Management and the Contradictory Nature of Sustainable Project Objectives’, *Project Management Journal*, 52(4), pp. 379–393. Available at: <https://doi.org/10.1177/87569728211007660>.
- Sabini, L., Muzio, D. and Alderman, N.** (2019) ‘25 years of “sustainable projects”. What we know and what the literature says’, *International Journal of Project Management*, 37(6), pp. 820–838. Available at: <https://doi.org/10.1016/j.ijproman.2019.05.002>.
- Salzberger, H., Müller-Judex, L. and Just, T.** (2024) ‘Schlüsselfaktor S: Die Soziale Nachhaltigkeit in der Immobilienwirtschaft: Auf dem Weg zu einem europäischen Bewertungsstandard’, *Beiträge zur Immobilienwirtschaft*, 30, pp. 1–127.
- Samset, K. and Christensen, T.** (2017) ‘Ex Ante Project Evaluation and the Complexity of Early Decision-Making’, *Public Organization Review*, 17(1), pp. 1–17. Available at: <https://doi.org/10.1007/s11115-015-0326-y>.
- Sanchez, J.I., Bonache, J., Paz-Aparicio, C. and Oberty, C.Z.** (2023) ‘Combining interpretivism and positivism in international business research: The example of the

expatriate role', *Journal of World Business*, 58(2), p. 101419. Available at: <https://doi.org/10.1016/j.jwb.2022.101419>.

Satankar, P.P. and Jain, S.S. (2015) 'Study of Success Factors for Real Estate Construction Projects', *International Research Journal of Engineering and Technology* [Preprint]. Available at: www.irjet.net (Accessed: 27 July 2023).

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H. and Jinks, C. (2018) 'Saturation in qualitative research: exploring its conceptualization and operationalization', *Quality & Quantity*, 52(4), pp. 1893–1907. Available at: <https://doi.org/10.1007/s11135-017-0574-8>.

Saunders, M.K., Lewis, P. and Thornhill, A. (2019) *Research Methods for Business Students*. 9th ed. New York: Pearson.

Schäfer, J. and Conzen, G. (2007) 'Definition und Abgrenzung der Projektentwicklung', in J. Schäfer and G. Conzen (eds.) *Praxishandbuch der Immobilien-Projektentwicklung*, pp. 1–5.

Schanzenbach, M.M. and Sitkoff, R.H. (2020) 'ESG Investing: Theory, Evidence, and Fiduciary Principles', *Journal of Financial Planning*, Special Report, pp. 42–50.

Schieg, M. (2009) 'The model of corporate social responsibility in project management', *Business: Theory and Practice*, 10(4), pp. 315–321. Available at: <https://doi.org/10.3846/1648-0627.2009.10.315-321>.

Schramade, W. (2016) 'Integrating ESG into valuation models and investment decisions: the value-driver adjustment approach', *Journal of Sustainable Finance and Investment*, 6(2), pp. 95–111. Available at: <https://doi.org/10.1080/20430795.2016.1176425>.

Schulte, K.-W. and Bone-Winkel, S. (2008) 'Grundlagen der Projektentwicklung aus immobilienwirtschaftlicher Sicht', in K.W. Schulte and S. Bone-Winkel (eds.) *Handbuch Immobilien-Projektentwicklung*. 3rd ed. Cologne: Rudolf Müller, pp. 23–90.

Scott, W.R. (2013) *Institutions and organizations: Ideas, interests, and identities*. Sage Publications.

Selch, K. (2021) 'FINANCING ENVIRONMENTALLY, SOCIALLY, & ECONOMICALLY SUSTAINABLE REAL ESTATE DEVELOPMENT', *Navigating the Future of Real Estate - Review. Cornell Baker Program in Real Estate*, pp. 44–51.

Shahid, H., Sabelfeld, L. and Johansson, J. (2024) 'Sustainability reporting in construction and real estate sector: A conceptualization and a review of existing literature', *Journal of*

Cleaner Production, 477, p. 143886. Available at: <https://doi.org/10.1016/j.jclepro.2024.143886>.

Shen, L., Zhang, Z. and Long, Z. (2017) ‘Significant barriers to green procurement in real estate development’, *Resources, Conservation and Recycling*, 116, pp. 160–168. Available at: <https://doi.org/10.1016/j.resconrec.2016.10.004>.

Shenhar, A.J., Dvir, D., Levy, O. and Maltz, A.C. (2001) ‘Project Success: A Multidimensional Strategic Concept’, *Long Range Planning*, 34(6), pp. 699–725. Available at: [https://doi.org/10.1016/S0024-6301\(01\)00097-8](https://doi.org/10.1016/S0024-6301(01)00097-8).

Shi, Q., Yan, Y., Zuo, J. and Yu, T. (2016) ‘Objective conflicts in green buildings projects: A critical analysis’, *Building and Environment*, 96, pp. 107–117. Available at: <https://doi.org/10.1016/j.buildenv.2015.11.016>.

Shields, P.M. and Tajalli, H. (2014) ‘The Missing Link in Successful Student Scholarship’, *Journal of Public Affairs Education*, 12(3), pp. 313–334.

Shiem-shin Then, D., Tan, T.-H., Fonseca Santovito, R. and Anker Jensen, P. (2014) ‘Attributes of alignment of real estate and facilities management to business needs’, *Journal of Corporate Real Estate*, 16(2), pp. 80–96. Available at: <https://doi.org/10.1108/JCRE-09-2013-0026>.

Shirazi, M.R. and Keivani, R. (2019) ‘The triad of social sustainability: Defining and measuring social sustainability of urban neighbourhoods’, *Urban Research & Practice*, 12(4), pp. 448–471. Available at: <https://doi.org/10.1080/17535069.2018.1469039>.

Silvius, A.J.G. and Schipper, R.P.J. (2014) ‘Sustainability in project management: A literature review and impact analysis’, *Social Business*, 4(1), pp. 63–96. Available at: <https://doi.org/10.1362/204440814X13948909253866>.

Sipiczki, A. (2022) ‘A CRITICAL LOOK AT THE ESG MARKET CEPS Policy Insights A critical look at the ESG market’, *CEPS Policy Insights*, 15. Available at: www.ceps.eu (Accessed: 18 April 2023).

Smith, W.K. and Lewis, M.W. (2011) ‘TOWARD A THEORY OF PARADOX: A DYNAMIC EQUILIBRIUM MODEL OF ORGANIZING.’, *Academy of Management Review*, 36(2), pp. 381–403. Available at: <https://doi.org/10.5465/AMR.2011.59330958>.

Song, Y. (2011) ‘Ecological city and urban sustainable development’, *Procedia Engineering*. Available at: <https://doi.org/10.1016/j.proeng.2011.11.1997>.

- Squires, A.** (2009) ‘Methodological challenges in cross-language qualitative research: A research review’, *International Journal of Nursing Studies*, 46(2), pp. 277–287. Available at: <https://doi.org/10.1016/j.ijnurstu.2008.08.006>.
- Squires, G. and Heurkens, E.** (2016) ‘Methods and models for international comparative approaches to real estate development’, *Land Use Policy*, 50, pp. 573–581. Available at: <https://doi.org/10.1016/j.landusepol.2015.10.005>.
- Stagrum, A.E., Andenæs, E., Kvande, T. and Lohne, J.** (2020) ‘Climate Change Adaptation Measures for Buildings—A Scoping Review’, *Sustainability*, 12(5), p. 1721. Available at: <https://doi.org/10.3390/su12051721>.
- Stake, R.E.** (2005) ‘Qualitative Case Studies’, in N.K. Denzin and Y.S. Lincoln (eds.) *The Sage handbook of qualitative research*. r. London: Sage Publications Ltd, pp. 443–466.
- Stamatopoulos, E., Forouli, A., Stoian, D., Kouloukakis, P., Sarmas, E. and Marinakis, V.** (2024) ‘An adaptive framework for assessing climate resilience in buildings’, *Building and Environment*, 264, p. 111869. Available at: <https://doi.org/10.1016/j.buildenv.2024.111869>.
- Stanitsas, M., Kirytopoulos, K. and Leopoulos, V.** (2021) ‘Integrating sustainability indicators into project management: The case of construction industry’, *Journal of Cleaner Production*, 279, p. 123774. Available at: <https://doi.org/10.1016/j.jclepro.2020.123774>.
- Statista Research Department** (2023) *Real estate investors’ opinion on the importance of different environmental, social, and governance (ESG) measures worldwide in 2022*. New York.
- Stellmacher, D., Meins-Becker, A., Kelm, A., Koch to Krax, N., Samtleben, S. and Schroeder, A.** (2023) ‘CREATION OF DIGITAL BUILDING DOCUMENTATION BY THE BUILDING TRADE’, *Proceedings of International Structural Engineering and Construction*, 10(1). Available at: [https://doi.org/10.14455/ISEC.2023.10\(1\).AAE-19](https://doi.org/10.14455/ISEC.2023.10(1).AAE-19).
- Steven Winter Associates** (2014) *LEED Cost Study - Final Report*. Washington D.C.
- Stock-Homburg, R. and Heitlinger, L.** (2022) ‘Transformation der Immobilienwirtschaft’, in A. Pfnür, M. Eberhardt, and T. Herr (eds.) *Transformation der Immobilienwirtschaft*. Wiesbaden: Springer Fachmedien Wiesbaden, pp. 95–114. Available at: <https://doi.org/10.1007/978-3-658-35363-6>.
- Straube, C.** (2024) ‘Immobilienfinanzierung’, *Quick Guide - Nachhaltigkeit in der Immobilienwirtschaft*. Springer Gabler, pp. 63–72.

- Suddaby, R.** (2006) 'From the editors: What grounded theory is not', *Academy of Management Journal*, 49(4), pp. 633–643.
- Sultana, S., Zulkifli, N. and Zainal, D.** (2018) 'Environmental, social and governance (ESG) and investment decision in Bangladesh', *Sustainability (Switzerland)*, 10(6). Available at: <https://doi.org/10.3390/su10061831>.
- Sun, C., Jiang, S., Skibniewski, M.J., Man Q. and Shen, L.** (2015) 'A LITERATURE REVIEW OF THE FACTORS LIMITING THE APPLICATION OF BIM IN THE CONSTRUCTION INDUSTRY', *Technological and Economic Development of Economy*, 23(5), pp. 764–779. Available at: <https://doi.org/10.3846/20294913.2015.1087071>.
- Szreder, J., Walentynowicz, P. and Sycz, P.** (2019) 'Adaptative Project Framework as a Development Project Management Method on the Example of the Kashubska Ostoja Project', *Real Estate Management and Valuation*, 27(1), pp. 5–14. Available at: <https://doi.org/10.2478/remav-2019-0001>.
- tagesschau** (2023) *Heizungsgesetz im Bundesrat: 'Die Menschen haben Angst'* | [tagesschau.de](https://www.tagesschau.de/inland/heizungsdebatte-bundesrat-100.html). Available at: <https://www.tagesschau.de/inland/heizungsdebatte-bundesrat-100.html> (Accessed: 28 December 2024).
- Takala, J.** (2016) *Arbeitsbedingte Krebserkrankungen müssen in Europa & Weltweit verhindert werden*. Vienna.
- Taylor, J., Vithayathil, J. and Yim, D.** (2018) 'Are corporate social responsibility (CSR) initiatives such as sustainable development and environmental policies value enhancing or window dressing?', *Corporate Social Responsibility and Environmental Management*, 25(5), pp. 971–980. Available at: <https://doi.org/10.1002/csr.1513>.
- Tembo, C.K. and Akintola, A.** (2021) 'A retrospection of methodological pluralism in theJournal of Financial Management of Property and Construction (2005-2020) ', *Journal of Financial Management of Property and Construction*, 27(3), pp. 348–364.
- Temple, B. and Young, A.** (2004) 'Qualitative Research and Translation Dilemmas', *Qualitative Research*, 4(2), pp. 161–178. Available at: <https://doi.org/10.1177/1468794104044430>.
- Tuergen, N.** (2015) 'Project Management In Real Estate Development Projects', *22nd Annual European Real Estate Society Conference*. European Real Estate Society. Available at: https://doi.org/10.15396/eres2015_269.

Tufinio, S.P., Mooi, H., Ravestijn, W. and Boorsma, M. (2013) ‘SUSTAINABILITY IN PROJECT MANAGEMENT: WHERE ARE WE?’, *International Journal of Engineering, Annals of Faculty Engineering Hunedoara*, 11(1), pp. 91–100.

Türgen, N. (2015) ‘Project Management In Real Estate Development Projects’, *Annual European Real Estate Society Conference*. Istanbul: ERES.

UBA (2025) *Germany on track for 2030 climate targets*, German Environment Agency (Umweltbundesamt, UBA). Available at: <https://www.umweltbundesamt.de/en/press/pressinformation/germany-on-track-for-2030-climate-targets> (Accessed: 16 February 2026).

UN (2019) *Fiduciary Duty in the 21st Century Final Report*. New York.

UN Global Compact (2005) *Who Cares Wins - Connecting Financial Markets to a Changing World*.

USGBC (2022) *Benefits of green building | U.S. Green Building Council*. Philadelphia. Available at: <https://www.usgbc.org/press/benefits-of-green-building> (Accessed: 26 March 2023).

Vasileiou, K., Barnett, J., Thorpe, S. and Young, T. (2018) ‘Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period’, *BMC Medical Research Methodology*, 18(1), p. 148. Available at: <https://doi.org/10.1186/s12874-018-0594-7>.

Veith, T., Loose, T. and Tsiter, A. (2022) ‘ESG Due Diligence als Werttreiber für Erwerb und Bestandshaltung von Immobilien’, in T. Veith, C. Conrads, and F. Hackelberg (eds.) *ESG in der Immobilienwirtschaft*. 1st ed. Freiburg: Haufe, pp. 415–424.

Velte, P. (2017) ‘Does ESG performance have an impact on financial performance? Evidence from Germany’, *Journal of Global Responsibility*, 8(2), pp. 169–178. Available at: <https://doi.org/10.1108/JGR-11-2016-0029>.

de Villiers, C., Farooq, M.B. and Molinari, M. (2022) ‘Qualitative research interviews using online video technology – challenges and opportunities’, *Meditari Accountancy Research*, 30(6), pp. 1764–1782. Available at: <https://doi.org/10.1108/MEDAR-03-2021-1252>.

Vongerichten, H. (2024) *EU-Taxonomie-Konformität im Wohnungsbau*. Wiesbaden: Springer Verlag.

- Waddock, S.A. and Graves, S.B.** (1998) 'THE CORPORATE SOCIAL PERFORMANCE–FINANCIAL PERFORMANCE LINK', *Strategy Management Journal*, 18, pp. 303–319.
- Wagner, B., Heckmann, M., Pfnür, A. and Glock, C.** (2022) *Erfolgspotenziale der Holzhybridbauweise in der Immobilienprojektentwicklung, Erfolgspotenziale der Holzhybridbauweise in der Immobilienprojektentwicklung*. Wiesbaden: Springer Fachmedien . Available at: <https://doi.org/10.1007/978-3-658-38439-5>.
- Walker, H. and Brammer, S.** (2009) 'Sustainable procurement in the United Kingdom public sector', *Supply Chain Management: An International Journal*, 14(2), pp. 128–137. Available at: <https://doi.org/10.1108/13598540910941993>.
- Wallace, M. and Wray, A.** (2016) *Critical Reading and Writing for Postgraduates*. 3rd ed. London: Sage.
- Wang, K. and Ke, Y.** (2024) 'Social sustainability of communities: A systematic literature review', *Sustainable Production and Consumption*, 47, pp. 585–597. Available at: <https://doi.org/10.1016/j.spc.2024.04.031>.
- Wang, X. and Wen, H.** (2023) 'Research on Green Transformation of Real Estate Enterprises under ESG Concept', *ICCREM 2023*. Reston, VA: American Society of Civil Engineers, pp. 500–505. Available at: <https://doi.org/10.1061/9780784485217.049>.
- Wannags, L.L. and Gold, S.** (2020) 'Assessing tensions in corporate sustainability transition: From a review of the literature towards an actor-oriented management approach', *Journal of Cleaner Production*, 264, p. 121662. Available at: <https://doi.org/10.1016/j.jclepro.2020.121662>.
- Warren-Myers, G.** (2012) 'Valuing sustainability in Australia: Implications for the valuation profession', *Pacific Rim Property Research Journal*, 18(2). Available at: <https://doi.org/10.1080/14445921.2012.11104357>.
- Weinfeld, S., Wiek-Roy, G. and Booth, C.A.** (2023) 'Embodied Carbon Reporting by German Real Estate Institutional Investors', *Journal of Sustainability Research*, 5(1), pp. 1–32. Available at: <https://doi.org/10.20900/jsr20230003>.
- Weiss, W.** (2007) 'Vergabe von Bauleistungen', in Schäfer J. and Conzen. G. (eds.) *Praxishandbuch der Immobilien-Projektentwicklung*. 2nd ed. Munich: Verlag C. H. Beck, pp. 425–526.

Welch, C. and Piekkari, R. (2006) ‘Crossing language boundaries: Qualitative interviewing in international business’, *Management International Review*, 46(4), pp. 417–437. Available at: <https://doi.org/10.1007/s11575-006-0099-1>.

Wicks, A.C. and Freeman, R.E. (1998) ‘Organization Studies and the New Pragmatism: Positivism, Anti-positivism, and the Search for Ethics’, *Organization Science*, 9(2), pp. 123–140. Available at: <https://doi.org/10.1287/orsc.9.2.123>.

Widyawati, L. (2020) ‘A systematic literature review of socially responsible investment and environmental social governance metrics’, *Business Strategy and the Environment*, 29(2), pp. 619–637. Available at: <https://doi.org/10.1002/bse.2393>.

Wiggins, G.S. (2004) ‘The Analysis of Focus Groups in Published Research Articles’, *Canadian Journal of Program Evaluation*, 19(2), pp. 143–164. Available at: <https://doi.org/10.3138/cjpe.19.007>.

Wijburg, G. and Aalbers, M.B. (2017) ‘The alternative financialization of the German housing market’, *Housing Studies*, 32(7), pp. 968–989. Available at: <https://doi.org/10.1080/02673037.2017.1291917>.

Wiley, J.A., Benefield, J.D. and Johnson, K.H. (2010) ‘Green Design and the Market for Commercial Office Space’, *The Journal of Real Estate Finance and Economics*, 41(2), pp. 228–243. Available at: <https://doi.org/10.1007/s11146-008-9142-2>.

Wilkinson, S. (2004) ‘Focus group research’, in D. Silverman (ed.) *Qualitative research: Theory, method, and practice*. Thousand Oaks: Sage, pp. 177–199.

Winch, G.M., Geels, F., Locatelli, G. and Sergeeva, N. (2023) ‘Projecting for sustainability transitions’, *International Journal of Project Management*, 41(3), p. 102456. Available at: <https://doi.org/10.1016/j.ijproman.2023.102456>.

De Wolf, C., Cordella, M., Dodd, N., Byers, B. and Donatello, S. (2023) ‘Whole life cycle environmental impact assessment of buildings: Developing software tool and database support for the EU framework Level(s)’, *Resources, Conservation and Recycling*, 188, p. 106642. Available at: <https://doi.org/10.1016/j.resconrec.2022.106642>.

World Bank (2023) *GDP (current US\$) | Data*. Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?most_recent_value_desc=true (Accessed: 25 March 2025).

Wuni, I.Y. (2022) ‘Mapping the barriers to circular economy adoption in the construction industry: A systematic review, Pareto analysis, and mitigation strategy map’, *Building and Environment*. Elsevier Ltd. Available at: <https://doi.org/10.1016/j.buildenv.2022.109453>.

- Wyrwoll, M. and Beusker, E. (2025)** ‘Profitability indicators for performance measurement in real estate development’, *Journal of European Real Estate Research*, 18(2), pp. 327–343. Available at: <https://doi.org/10.1108/JERER-05-2024-0040>.
- Xie, J., Nozawa, W., Yagi, M., Fujii, H. and Managi, S. (2019)** ‘Do environmental, social, and governance activities improve corporate financial performance?’, *Business Strategy and the Environment*, 28(2), pp. 286–300. Available at: <https://doi.org/10.1002/bse.2224>.
- Yan, Y., Wang, C., Quan, Y., Wu, G. and Zhao, J. (2018)** ‘Urban sustainable development efficiency towards the balance between nature and human well-being: Connotation, measurement, and assessment’, *Journal of Cleaner Production*, 178. Available at: <https://doi.org/10.1016/j.jclepro.2018.01.013>.
- Yoo, B.-C. (2025)** ‘Exploring Stakeholder and Organizational Influences on ESG Management in the Logistics Sector’, *Sustainability*, 17(9), p. 4243. Available at: <https://doi.org/10.3390/su17094243>.
- Yoshikawa, T., Nippa, M. and Chua, G. (2021)** ‘Global shift towards stakeholder-oriented corporate governance? Evidence from the scholarly literature and future research opportunities’, *Multinational Business Review*, 29(3), pp. 321–347. Available at: <https://doi.org/10.1108/MBR-10-2020-0200>.
- Young, J., Phipps, A., Swinnerton, E., Almond, N. and Dhillon, S. (2023)** *Obsolescence equals Opportunity*. Chicago.
- Yu, T., Shen, G.Q., Shi, Q., Zheng, H.W., Wang, G. and Xu, K. (2017)** ‘Evaluating social sustainability of urban housing demolition in Shanghai, China’, *Journal of Cleaner Production*, 153, pp. 26–40. Available at: <https://doi.org/10.1016/j.jclepro.2017.03.005>.
- Yu, Y., Yazan, D.M., Junjan, V. and Iacob, M.E. (2022)** ‘Circular economy in the construction industry: A review of decision support tools based on Information & Communication Technologies’, *Journal of Cleaner Production*, 349. Available at: <https://doi.org/10.1016/j.jclepro.2022.131335>.
- Yusifzada, L., Lončarski, I., Czupy, G. and Naffa, H. (2025)** ‘Return trade-offs between environmental and social pillars of ESG scores’, *Research in International Business and Finance*, 75, p. 102779. Available at: <https://doi.org/10.1016/j.ribaf.2025.102779>.
- Zavadskas, E.K., Bausys, R., Kaklauskas, A., Ubarte, I., Kuzminskė, A. and Gudienė, N. (2017)** ‘Sustainable market valuation of buildings by the single-valued neutrosophic MAMVA method’, *Applied Soft Computing Journal*, 57. Available at: <https://doi.org/10.1016/j.asoc.2017.03.040>.

- Zhang, R., Fu, Y., Chen, Y. and Du, B.** (2024) ‘Down to Earth: Implementing Project-Level ESG Metrics in Chinese AEC Firms’ Practices’, *Journal of Management in Engineering*, 40(5). Available at: <https://doi.org/10.1061/JMENEA.MEENG-5941>.
- Zhang, X., Shen, L., Wu, Y. and Qi, G.** (2011) ‘Barriers to Implement Green Strategy in the Process of Developing Real Estate Projects’, *The Open Waste Management Journal*, 4, pp. 33–37.
- Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y. and Kang, J.** (2018) ‘ESG and corporate financial performance: Empirical evidence from China’s listed power generation companies’, *Sustainability (Switzerland)*, 10(8). Available at: <https://doi.org/10.3390/su10082607>.
- Zheng, Z. and Lee, C.L.** (2025) ‘A meta-analysis of ESG factors in the real estate investment trusts sector: exploring their impacts on REITs performance’, *Engineering, Construction and Architectural Management* [Preprint]. Available at: <https://doi.org/10.1108/ECAM-05-2024-0652>.
- ZIA** (2015) *Nachhaltigkeit - Kodex, Berichte und Compliance*. Berlin. Available at: https://zia-deutschland.de/wp-content/uploads/2021/04/150722_ZIA_Nachdruck_Nachhaltigkeitsleitfaden_final_Ohne_Schnittmarken1.pdf (Accessed: 6 January 2023).
- ZIA** (2022) *Die Bedeutung der Immobilienwirtschaft in Zahlen, Zentraler Immobilien Ausschuss e.V.* Berlin.
- ZIA** (2023) *ESG-Leitfaden für Büroimmobilien*. Berlin.
- Zimmermann, M.** (2006) ‘Projektentwicklung im Immobilienbestand’, *Schriften zur Immobilienökonomie*. Schloß Reichartshausen: Rudolf Müller Verlag, European Business School.
- Ziolo, M., Filipiak, B.Z., Ak, I.B. and Cheba, K.** (2019) ‘How to Design More Sustainable Financial Systems: The Roles of Environmental, Social, and Governance Factors in the Decision-Making Process’, *sustainability*, 11(5604), pp. 1–34. Available at: <https://doi.org/10.3390/su11205604>.
- Zumente, I. and Bistrova, J.** (2021) ‘ESG Importance for Long-Term Shareholder Value Creation: Literature vs. Practice’, *Journal of Open Innovation: Technology, Market, and Complexity*, 7(2), p. 127. Available at: <https://doi.org/10.3390/joitmc7020127>.

Zwikaël, O., Chih, Y.Y. and Meredith, J.R. (2018) 'Project benefit management: Setting effective target benefits', *International Journal of Project Management*, 36(4), pp. 650–658. Available at: <https://doi.org/10.1016/J.IJPROMAN.2018.01.002>.

Zwikaël, O. and Smyrk, J.R. (2019) *Project Management - A Benefit Realisation Approach*. Cham: Springer International Publishing. Available at: <https://doi.org/10.1007/978-3-030-03174-9>.

APPENDICES

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Appendix 1 - Ethical Approval



EDUCATION, CULTURE AND SOCIETY RESEARCH ETHICS PANEL (ECS REP)

CONFIRMATION OF APPROVAL

17 January 2024

REP CODE: ECS23240013-R

**A FRAMEWORK FOR ESG IN INTEGRATION TO THE DEVELOPMENT PROCESS OF GERMAN
REAL ESTATE PROJECTS**

Dear Andre

Thank you for your revised application for proportionate review ethical approval to the Education, Culture and Society Research Ethics Panel submitted on 8 January 2024.

Your application has been reviewed in accordance with the University of Worcester Ethics Policy and in compliance with the Standard Operating Procedures for proportionate ethical review.

The outcome of the review is that the Panel is now happy to grant this project ethical approval to proceed.

Your research must be undertaken as set out in the approved application for the approval to be valid. You must review your answers to the checklist on an ongoing basis and resubmit for approval where you intend to deviate from the approved research. Any major deviation from the approved application will require a new application for approval.

As part of the University Ethics Policy, the University undertakes an audit of a random sample of approved research. You may be required to complete a questionnaire about your research.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Dr Peter Gossman'.

DR PETER GOSSMAN

Chair – Education, Culture and Society Proportionate Review Panel

Deputy Chair – Education, Culture and Society Research Ethics Panel

ethics@worc.ac.uk

Appendix 2 – Interview Guide



Introduction

The research project, titled “*INTEGRATING ESG MEASURES INTO REAL ESTATE DEVELOPMENT: A STRATEGIC FRAMEWORK FOR ENHANCED PROJECT SUCCESS*”, relies on a qualitative research strategy. The primary data collection for this research project entails conducting interviews with experts. It is important to note that, within the context of this work, an expert does not refer to a specific management level but signifies a relational status related to the specific topics of this research project (Meuser and Nagel, 1991). An expert, in the context of this work, possesses knowledge and experience in project development as well as the successful development of sustainable or ESG-compliant buildings in Germany. These experts assist the researcher in achieving the research aim:

"The research aims to identify key environmental, social, and governance (ESG) measures and benefits for German development projects and to establish how the integration of ESG measures into the development process can be achieved. The research will propose a framework that will comprise key environmental, social, and governance (ESG) measures that can be integrated into the real estate development process to improve the performance of real estate development project success in Germany."

To address this aim, it is essential that the individual perspectives, perceptions, experiences, and assessments of senior project practitioners are incorporated into the research. This is important because, on one hand, real estate inherently exhibits heterogeneity, and different experiences can be derived from each project. On the other hand, research also emphasises the subjectivity and contextuality of ESG. Despite the possibility of assuming that topics such as real estate or the finance-driven subject of ESG could be explored through broad surveys or questionnaires, the researcher believes that such an approach does not adequately illuminate the mentioned heterogeneity, subjectivity, and contextuality of the research topic. Therefore, the researcher has chosen a qualitative approach. There are various forms of qualitative research, and for this research project, semi-structured interviews are conducted. The goal of the semi-structured interview is to exploratively investigate a defined area with a few themes and questions. The interview follows the questions listed in this interview

guide, but it allows for in-depth exploration of specific topics, follow-up questions, or slight variations in the sequence. The interview guide outlines discussions on the following topics: 1. Project Success in General, 2. Sustainability in General, 3. Sustainability in Real Estate Project Development, 4. The Role of ESG Measures, and 5. The Role of ESG Benefits. The interview concludes with questions you are requested to complete, leading to a final closing question. Through this approach, we gradually approach the various thematic blocks in a conversational style.

1. Introduction: Project success in the context of real estate project development

In the first step, I would like to gain a deeper understanding of when you consider a real estate project to be successful.

Opening question: What do you, in a general sense, understand by "project success" in your industry?

- From your perspective, what contributes the most to project success?
- What, in your view, are the most significant 'risks' or 'threats' that can push projects to the brink of failure or even cause them to fail?
- How do you personally deal with these challenging risks and uncertainties?

2. General questions about sustainability

Now, I'd like to discuss what you generally associate with the topic of 'sustainability' (disconnected from any specific context).

Opening question: When you think about the topic of sustainability and developments in the field of sustainability, what aspects come to your mind?

- How has your perception of this evolved over the past years?
- In this regard, what do you consider particularly positive, but also possibly difficult or challenging?
- What connections or differences do you see between the general topic of sustainability on one hand and "ESG" on the other?

3. Questions about sustainability in real estate project development

In the next step, I would like to discuss how you, subjectively from your perspective, understand the role of real estate project development in connection with the topic of sustainability.

Opening question: What does sustainability in the development of real estate projects mean to you?

- What personal connection do you see between the real estate industry on one hand and "sustainability" on the other?
- How can real estate development contribute to sustainability?
- From your viewpoint, what is the current perception of the real estate development industry on sustainability?
- What, from your perspective, does this categorisation mean for practice?

4. The role of ESG measures in the context of real estate

You have now described some aspects and peculiarities from your perspective that you generally recognise. In the next step, I would like to delve into the role of potential measurement indicators or measures in the field of sustainability or ESG in the real estate industry.

Opening question: When you think about indicators, measurement methods, or similar aspects in the field of sustainability or ESG, what thoughts or associations come to your mind in a general sense?

Now that we have talked about ESG measures more generally, I would like to dive into the specific pillar of ESG, starting with the environmental measures.

4.1. Environmental measures

- When you think about measures or standards that target the "environment", what role do they play for the real estate industry from your perspective?
- Which standards, in the view of the real estate industry, do you consider particularly significant in the environmental pillar, and which might you view as less relevant?
- How do you assess the feasibility and practicality of these standards?
- How do you deal with this aspect in your own work environment?

4.2. Social measures

- When you think about measures or standards that target the "social", what role do they play for the real estate industry from your perspective?
- Which standards do you consider particularly significant for the context of the real estate industry in the social pillar, and which might you view as less relevant?
- How do you assess the feasibility and practicality of these standards?
- How do you deal with this aspect in your own work environment?

4.3. Governance measures

- When you think about measures or standards that target "governance", what role do they play for the real estate industry from your perspective?
- Which standards do you consider particularly significant in the governance pillar for the real estate industry, and which might you view as less relevant?
- How do you assess the feasibility and practicality of these standards?
- How do you deal with this aspect in your own work environment?

5. The role of ESG benefits in real estate projects

In this further section, I would like to explore the topic of ESG benefits more closely with you.

Opening question: When you generally think about benefits in the context of real estate project development through sustainability or ESG, what thoughts or associations come to your mind?

- How do you think "ESG benefits" could contribute to the success of real estate projects?
- From your perspective, which benefits are the most important, and why?
- Can ESG considerations also hinder project success in your opinion; if yes, why?
- How, in your opinion, could ESG benefits contribute to an improved project performance?

6. Integrating ESG consideration into the development process

In this further section, I would like to explore the topic of ESG benefits more closely with you.

Opening question: How can ESG measures be best integrated into the real estate development process?

- Are there measures that are easier or more difficult to integrate into the real estate development process?
- What should be considered when incorporating ESG measures into project development?
- What should be avoided when considering ESG measures in real estate projects?

- What obstacles do you see in the integration of ESG measures into the real estate development process?
- How can the integration of ESG into the daily work of project developers be optimised?

7. Closing questions

In the final step, I would like you to complete three sentences:

- If I had to honestly summarise the role and significance of the topic of sustainability or ESG in my daily work in one sentence, then...
- If I had one wish regarding the topic of sustainability or ESG in the real estate industry that would become reality tomorrow, it would be...
- Personally, the topic of sustainability or ESG means...

Finally, what do you believe should be added to complete the interview?

Appendix 3 – Focus Group Guide



Introduction

The research project, titled *“INTEGRATING ESG MEASURES INTO REAL ESTATE DEVELOPMENT: A STRATEGIC FRAMEWORK FOR ENHANCED PROJECT SUCCESS”*, relies on a multi-method qualitative research strategy. The primary data collection for this research project entailed conducting interviews with experts. In the second phase of data collection, focus group discussions with experts will be conducted. It is important to note that, within the context of this work, an expert does not refer to a specific management level but signifies a relational status related to the specific topics of this research project (Meuser and Nagel, 1991). An expert, in the context of this work, possesses knowledge and experience in project development as well as the successful development of sustainable or ESG-compliant buildings in Germany. These experts assist the researcher in achieving the research aim:

"The research aims to identify key environmental, social, and governance (ESG) measures and benefits for German development projects and to establish how the integration of ESG measures into the development process can be achieved. The research will propose a framework that will comprise key environmental, social, and governance (ESG) measures that can be integrated into the real estate development process to improve the performance of real estate development project success in Germany."

To address this aim, it is essential that the individual perspectives, perceptions, experiences, and assessments of senior project practitioners are incorporated into the research. This is important because, on one hand, real estate inherently exhibits heterogeneity, and different experiences can be derived from each project. On the other hand, research also emphasises the subjectivity and contextuality of ESG. Despite the possibility of assuming that topics such as real estate or the finance-driven subject of ESG could be explored through broad surveys or questionnaires, the researcher believes that such an approach does not adequately illuminate the mentioned heterogeneity, subjectivity, and contextuality of the research topic. Therefore, the researcher has chosen a qualitative approach. After the semi-structured interviews have been conducted and analysed, a framework for the integration of ESG measures to the development process of German real estate projects has been developed by

the researcher. With the purpose of validation, a second qualitative method in the form of focus group discussions will be conducted. As a member of a focus group session, you will be in a group of approximately three to five experts from the real estate development industry. The researcher will act as moderator and will ask questions, facilitate the discussions, and will take notes. If you volunteer to participate in one of these focus group sessions, you will be asked questions relating to your experience on real estate development, sustainability in real estate development, ESG in real estate development, and the integration of ESG measures into the development process. These questions will help the researcher to better understand the role of ESG in real estate development and how ESG can be integrated into the real estate development process to enhance project performance.



Focus Group Script

Welcome, and thank you for joining us today. The purpose of this gathering is to seek your feedback on how to incorporate ESG (Environmental, Social, and Governance) measures into the development process of German real estate development projects to enhance project performance.

I am Andre Wellmann, a Doctor of Business Administration Researcher at the University of Worcester, and I will be facilitating today's focus group discussion. A focus group is a structured conversation focussed on specific questions within a secure and confidential environment. To accommodate your limited availability, the researcher has chosen to conduct this session in an online format. I will guide this session as your moderator and pose open questions related to the research topic. The aim of this research is to develop a framework for the integration of ESG measures into the development process of German real estate development projects to enhance project success. Based on the literature review conducted earlier and the interviews conducted in the first step of the qualitative data collection, in which you kindly participated, a framework has been developed. However, the goal of this work is to develop a framework that is not only validated but also contributes to practical applications. Therefore, it is now important to gather your experiences and perceptions on this topic and discuss them. Any comments, additions, remarks, or other feedback would be valuable. Please note that the goal is not to extract individual opinions but to discern a collective viewpoint from the group. There are no right or wrong answers. Be honest and contribute your opinions, experiences, and perceptions on the subjects of project development, ESG, and project success. Encouraging a lively discussion and actively responding to other participants' comments is welcomed. Additionally, please consider that this data collection method is not intended to solve overarching issues, such as achieving sustainability in project development or carbon-neutral construction, but explicitly focussed on addressing the research question. I will ensure that all participants have the opportunity to contribute to the discussion.

Before we begin, I want to reiterate that the information shared in today's session will be used in the dissertation. The final report will include a summary of the conversation content. The summary will be shared with the Director of Studies (DoS) and the supervisor of this work. The decision to answer questions and the level of engagement in the discussion are at your discretion. You are not obligated to respond to questions that make you uncomfortable. This session is anonymous and confidential. Anonymity means that your names and organisations will not be identifiable in the report. Confidentiality means that everything discussed in this virtual space should not be repeated outside. The composition of this session is also confidential. Therefore, I kindly request that you respect each other's privacy and refrain from sharing what was said by others today. While we trust that everyone present will honour this confidentiality, please be aware that information shared here may be relayed by another focus group member. Thus, refrain from sharing anything you need to keep private.

As you can see, we will be recording this focus group. The recording will solely be used to ensure the accuracy of my notes and will not be accessible to anyone outside of this project.

Focus Group Questions

Introduction

- What are your names, and what roles do you hold within your organisations? Please note that sharing your full name or the name of your company is not required if you prefer to remain anonymous.

General validation

Guiding question:

- Do these findings align with your own experiences?

Possible follow-up questions:

- Is there anything in the results that surprised you?
- Do you recognise familiar patterns within the findings?

Exploration of divergences

Guiding question:

- Are there aspects with which you disagree?

Possible follow-up questions:

- Have you encountered experiences that contradict these findings?
- Do you see alternative explanations to those provided by the researcher?

Practical implications

Guiding question:

- How can these findings be applied in your professional context?

Possible follow-up questions:

- What challenges do you foresee in implementing these findings in practice?
- To what extent can these findings contribute to solving problems in project work?

Refinement

Guiding question:

- Which findings do you consider particularly important, and which might be of lower priority?

Possible follow-up questions:

- What adjustments would be necessary to better integrate these findings into your daily work?
- Which aspects are especially relevant for implementation, and which are less significant?

Structure of today´s discussion

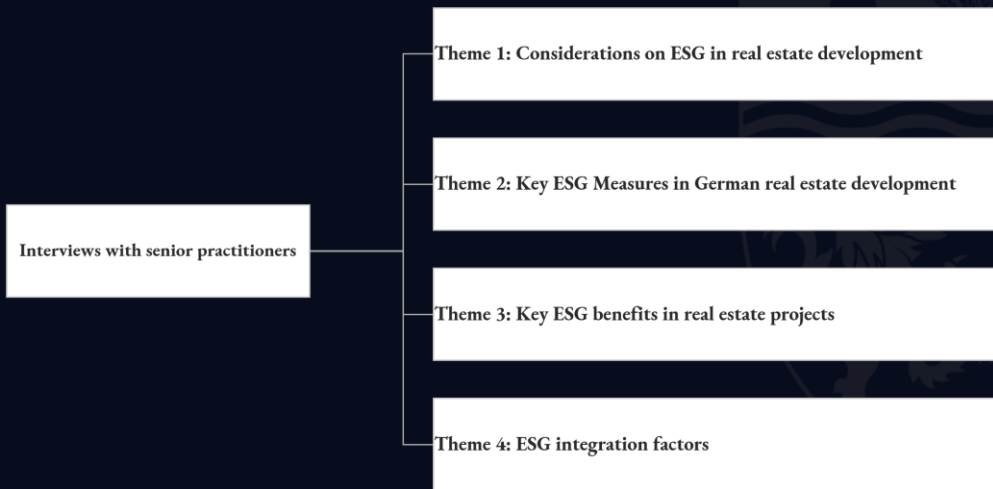


Aim:	Verification of research results
Procedure:	Presentation of research results and joint discussion
Result:	Concretisation, verification and refinement of the framework

Research objectives

- 
- Ascertain current environmental, social, and governance (ESG) metrics used in the real estate development projects in Germany.
 - Establish key benefits of environmental, social, and governance (ESG) that can be adopted by senior project practitioners delivering real estate development projects in Germany.
 - Propose an ESG framework comprising of environmental, social and governance (ESG) metrics and recommend how to integrate ESG metrics to the development process to enhance project success of German real estate development projects.

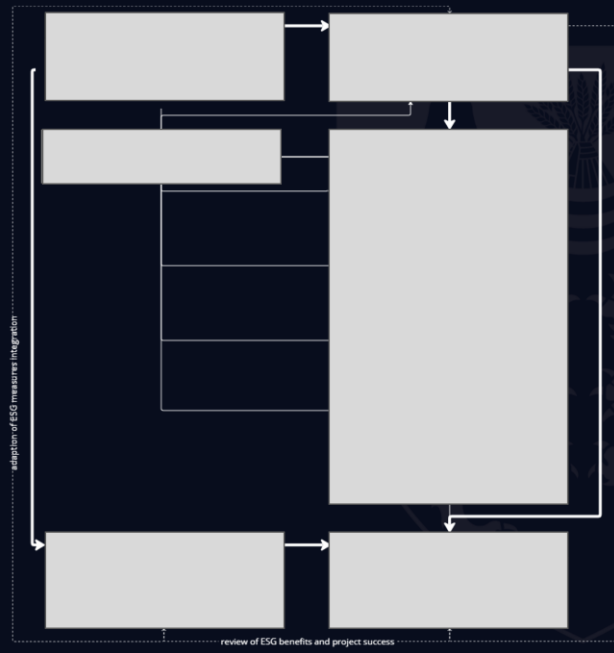
Overview of themes



Guiding questions

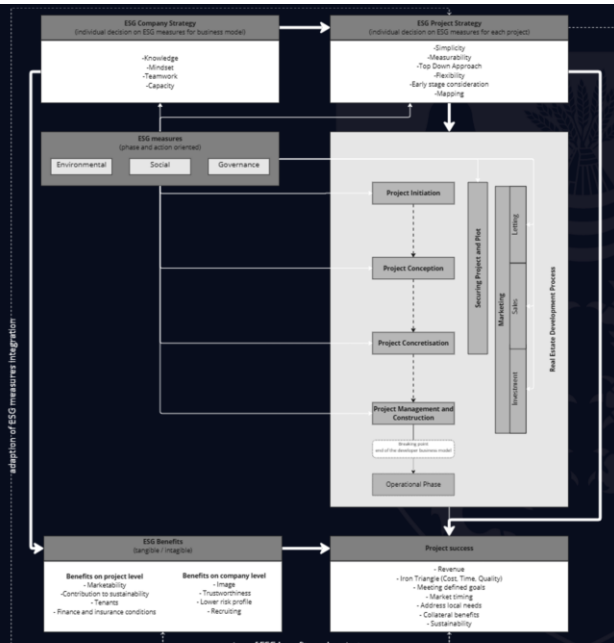
- Do these findings align with your own experiences?
- Are there any aspects you disagree with?
- How can these findings be applied in your professional context?
- What adjustments would be necessary to implement these findings more effectively in your daily routine?

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- Are there any aspects you disagree with?
- How can these findings be applied in your professional context?
- What adjustments would be necessary to implement these findings more effectively in your daily routine?



(In the presentation, the grey fields were animated, and the individual components of the framework were revealed, allowing for a separate explanation.)

- Do these findings align with your own experiences?
- Are there any aspects you disagree with?
- How can these findings be applied in your professional context?
- What adjustments would be necessary to implement these findings more effectively in your daily routine?



		ESG measures		
		Environmental	Social	Governance
Development phases and actions	Securing project and plot (cross-phase action)	e.g. environmental compensations, pollution management	e.g. public investment, community impact	e.g. KYC, AML, shareholder rights,
	Project Initiation	e.g. site selection, development criteria, climate risk analysis	e.g. infrastructure proximity, heritage sensitivity	e.g. economic stability, contractor relations, project management tools
	Project Conception	e.g. renewable energy, land use, environmental design, soil sealing	e.g. address local needs, open space design, urban design quality	e.g. stakeholder participation, building certification, climate change adaption
	Project Concretisation	e.g. energy efficiency measures, reduce water consumption, low carbon technology	e.g. tenant mix, surveillance, mobility offers	e.g. sustainability reporting, brand management, marketing
	Project Management and Construction	e.g. pollution prevention, material use	e.g. construction site safety, labour laws	e.g. transparent procurement, material disclosure
	Marketing (cross-phase action incl. investment, letting and sales)	e.g. LCA, waste management	e.g. affordability, employment creation	e.g. data protection, KYC & AML, transparent documentation
	Whole development process	e.g. environmental management system, reduction of energy consumption	e.g. skilled project team, human rights	e.g. business and market ethics, maturity of workforce, innovations, efficient decision making

