ESG as a Strategic Capability
An Exploration of Corporate Valuation, Employee Satisfaction, and Mergers & Acquisitions

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AI	Artificial Intelligence
BHAR	Buy-and-Hold Abnormal Returns
BV	Book Value
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenditures
CAR	Cumulative Abnormal Returns
CEO	Chief Executive Officer
CFP	Corporate Financial Performance
CSR	Corporate Social Responsibility
CSP	Corporate Social Performance
DC	Dynamic Capabilities
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EPS	Earnings per Share
ESG	Environmental, Social, and Governance
EV	Enterprise Value
GAAP	Generally Accepted Accounting Principles
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
KPI	Key Performance Indicator
LGBT	Lesbian, Gay, Bisexual, and Transgender
LSEG	London Stock Exchange Group
LTM	Last Twelve Months
M&A	Mergers and Acquisitions
ML	Machine Learning
MTB	Market to Book Value
MV	Market Value
NLP	Natural Language Processing
NLTK	Natural Language Toolkit
NRBV	Natural Resource-Based View
OLS	Ordinary Least Squares
P/E	Price-to-Earnings Ratio

R&D	Research and Development
RBV	Resource-Based View
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
S&P 500	Standard & Poor's 500
SASB	Sustainability Accounting Standards Board
SCRS	Strategic Corporate Social Responsibility
SEC	Securities and Exchange Commission
SIC	Standard Industrial Classification
SRI	Socially Responsible Investing
SPSS	Statistical Package for the Social Sciences
TBL	Triple Bottom Line
UTF-8	Unicode Transformation Format (8 Bit)
WRDS	Wharton Research Data Services

1. Preface

In the evolving landscape of sustainability research, the interplay between corporate sustainability, capital markets, corporate strategy, and stakeholder relationships is increasingly pertinent and complex, necessitating a profound exploration to discern the underlying mechanisms and their implications on value creation, stakeholder engagement, and the realization of competitive advantage. While extensive research has examined the effects of corporate sustainability on the valuation of public securities (Whelan et al., 2021), its impact on the financial and strategic dynamics within the context of acquisitions remains less explored. Acquisitions offer a compelling setting as they allow us to examine how Environmental, Social, and Governance (ESG) considerations influence valuations and synergies through the interactions between the acquirer and the target. Regarding stakeholder relationships, some studies suggest that intangible resources, including human resources, act as mediating factors between corporate sustainability and general financial outcomes, thus serving as the missing links needed to explain these relationships (Surroca et al., 2010). Consequently, concentrating on the impact of sustainability on specific stakeholder groups, such as employees, can further elucidate how ESG strategies and sustainability performance affect corresponding outcomes.

Although terms related to sustainability have distinct origins and application areas, they are often used interchangeably in scholarly texts, which may lead to confusion due to their overlapping characteristics and unclear distinctions. For clarity and to ensure consistency in this research, we will primarily use the term ESG, drawing on specific data from LSEG (formerly Refinitiv)/ASSET4 that this study predominantly utilizes, along with corporate sustainability for its broad scope, unless specified otherwise.

Owing to the demonstrated impact on financial and operational outcomes (Friede et al., 2015), it is reasonable to propose that ESG and corporate sustainability can enhance value

creation and stakeholder management opportunities, thereby contributing to the creation of a sustainable competitive advantage. By integrating sustainability into core business functions, research has shown that firms can transform corresponding sustainability strategies into distinctive capabilities that enable effective stakeholder engagement, a long-term orientation, and significant financial outperformance relative to their peers in the marketplace (Eccles et al., 2014).

Scholars like Collis (1994) categorize capabilities within firms into three distinct types: basic functional activities that enhance efficiency, dynamic improvements that foster innovation and adaptability, and insights that facilitate the development of novel strategies and resource utilization. Collectively, these capabilities represent a unique set of skills, resources, and attributes that enable a company to create and sustain a competitive advantage.

Considering the improved financial and operational outcomes, sustainability could thus be viewed as a capability due to its transformative impact within organizations by enhancing operational processes and best practices (Eccles et al., 2014), promoting innovation in sustainable practices (Nidumolu et al., 2009), and offering strategic insights that improve resource utilization (Hart & Dowell, 2011) and bolster stakeholder relationships (Porter & Kramer, 2011). Accordingly, this thesis adopts a capability perspective on ESG to analyze how firms can leverage ESG initiatives to create competitive advantages through operational, strategic, and financial outcomes, specifically focusing on value considerations and critical stakeholder relationships. Therefore, the primary aim of this thesis is to explore the following focal research questions:

How does ESG as a capability impact valuation and ESG performance in the context of corporate acquisitions? And how does ESG performance influence internal stakeholders (i.e., employees) in both static and dynamic contexts?

Firstly, it contributes to a more refined understanding of corporate sustainability by proposing frameworks that map optimal value outcomes through an interplay of targets and acquirors. Secondly, it broadens the understanding of corporate sustainability beyond the financial and regulatory realms, highlighting its implications for stakeholders, including employees as an essential stakeholder group in static and dynamic contexts. Thirdly, it disentangles the role of ESG in post-merger integration settings, illustrating how incorporating sustainability and stakeholder engagement considerations into acquisition strategies can improve both sustainability performance and financial outcomes.

To address these questions, the thesis presents one introductory text on the evolving sustainability literature to establish the theoretical foundation and context, and three underlying papers that explore distinct aspects of sustainability as a corporate capability within corporate valuation, employee satisfaction, and mergers & acquisitions (M&A).

The first paper, titled "Localizing the ESG Sweet Spot: Disentangling the Inverted U-shape Relationship between Environmental Performance and Acquisition Premia", lays the theoretical foundation for this thesis by investigating the drivers of varying value perceptions related to corporate sustainability within the realm of environmental performance in the context of corporate acquisitions. In recent years, ESG has emerged as a controversial topic in management and academia, with divergent views and understandings of how it creates value. The factors that lead investors to perceive the sustainability performance of companies as either value-adding or value-reducing remain a contentious topic within academic discourse, with prior research yielding disparate outcomes. Most studies in this area, however, primarily targeted the impact of general sustainability performance metrics on the valuations of public securities. In this paper, we specifically focus on the relationship between corporate environmental performance and the premia offered during acquisitions, where higher idiosyncratic risk creates a more vital need for incorporating environmental performance as

non-financial data in firm valuation. We engage with this debate by taking an ESG as a capability perspective and focusing on the context of acquisitions, which is particularly interesting because it provides a dynamic setting to explore how ESG considerations can affect valuation and synergies in the interplay between acquirer and target. In this context, we ask: How do interdependent value-adding and value-reducing drivers shape the relationship between environmental performance and acquisition premia? We propose an inverted U-shape relationship with a value-maximizing sweet spot in ESG intensity due to value-adding and value-reducing drivers. The model posits a balanced sustainability approach in relation to the Resource-Based View of the Firm that avoids the value reductions associated with environmental under- or over-commitment while maximizing benefits through appropriate environmental engagement. Additionally, we propose that the acquirer's environmental performance serves as a moderating factor in establishing valuation premia, exerting a greater influence on targets with weaker environmental performance. This implies that valuation premia are not determined merely by the presence of valuable, rare and inimitable resources and capabilities but also by the acquirer's ability to recognize and enhance such. Building on the interdependency between the environmental performance of the acquirer and target, we advance the RBV to propose a dynamic resource valuation perspective, highlighting that the target-acquirer relationship plays a critical role in the valuation of resources and capabilities. Drawing on an analysis of 100 global acquisition announcements between 2010 and 2019, we confirm the proposed relationships. The study contributes to a better understanding of the valuation impact of environmental performance in acquisitions and the role of the acquirer's and target's environmental performance to each other, offering a differentiated perspective on how environmental factors can both add and reduce value.

The second paper, "Beyond Financial Outcomes: Assessing the Influence of ESG Tilt and Momentum on Employee Satisfaction in S&P 500 Corporations", sheds light on the impact

of various ESG performance dimensions on employee satisfaction. Recent studies have underscored employee satisfaction as a key mediator between ESG practices and financial performance, though the specific impact of ESG on employee satisfaction is still not yet fully understood. Next to a static view of perceived ESG performance levels, acknowledging changes in ESG performance is essential as expectations, interpretations, and attitudinal consequences may be impacted by how sustainability develops within organizations. We explore the following question: What is the effect of ESG performance and its change over time on employee satisfaction? Drawing on organizational justice theory and expectancy theory, we theorize different impacts that ESG level (i.e., ESG Tilt) and changes in ESG (i.e., ESG Momentum) have on employee satisfaction. These impacts are based on different mechanisms at the individual and organizational levels. We test our hypotheses utilizing a Glassdoor.com dataset comprising S&P 500 employee reviews from 2009 to 2017 and employ automated text analysis (NLP). Our findings confirm that changes in ESG performance (i.e., momentum) increase employee satisfaction, a process mediated by perceived organizational justice. Our paper contributes to a more refined perspective on the relationship between ESG and employees as a key stakeholder group, advancing knowledge of mediating factors within the organization. Furthermore, we provide a novel operationalization of organizational justice perceptions by analyzing employee reviews using natural language processing. Further investigation of these mediating factors is crucial for understanding the influence of ESG performance on employee sentiment. As a key stakeholder group, our paper contributes to a more refined perspective on the relationship between ESG and employees, advancing knowledge of mediating factors in these relationships. Furthermore, we provide a novel operationalization of organizational justice perceptions and employee expectancy by analyzing employee reviews through natural language processing.

The third paper, titled "Acquiring Sustainability? The Long-Term Influence of ESG Performance Differences on Post-M&A Corporate Capabilities", synthesizes the essence of the first two papers by investigating the dynamics of corporate sustainability performance in the context of post-acquisition phases, where the integration of best practices and resources is crucial. Focusing on the long-term implications of ESG rating differences between acquirers and targets, this paper employs a two-directional analysis to examine the impact on post-acquisition ESG performance and abnormal long-term acquirer stock price returns. Additionally, the role of moderating and mediating factors in these dynamics is yet to be thoroughly examined. Our central question examines the dual influence of the sustainability performance of both superior and inferior target firms on acquirers' ESG progress and financial outcomes whilst identifying moderating and mediating factors at play. We combine the dynamic capability and resource-based view (RBV) theories to theorize how integrating inferior ESG targets impacts sustainability and financial performance. We propose that inferior ESG performance hinders an acquirer's ESG advancement due to the reallocation of dynamic capabilities and resources. Through a bi-directional analysis, we study the impact of ESG rating differences between acquirers and targets on long-term post-acquisition ESG performance and buy-and-hold abnormal stock returns (BHAR). Based on a set of 117 global acquisition events from 2009 to 2019, we propose that inferior ESG performance slows down an acquirer's ESG advancement due to a reallocation of dynamic capabilities and resources, while superior ESG performance speeds it up. We further posit that the acquirer's stakeholder engagement inversely moderates such dynamics. Furthermore, we study how ESG rating differences between acquirers and targets impact buy-and-hold abnormal stock returns (BHAR) and assume this to be mediated by the acquirer's ESG score changes following the transaction. Our paper contributes to the extant literature by developing the interplay between dynamic capabilities and resource integration, which works in a bi-directional manner that either slows

down or accelerates the acquirer's ESG advancements. Furthermore, we highlight the essence of an acquirer's stakeholder engagement in moderating the post-acquisition performance results and the mediating impact of post-acquisition ESG performance deltas on stock returns.

By synthesizing the findings from the three papers, this thesis enhances the literature on corporate sustainability by offering a comprehensive and detailed understanding of sustainability as a capability within the realms of corporate valuation, stakeholder relationships, and post-acquisition processes. This work significantly advances our comprehension of sustainability performance and its implications as a corporate capability in several ways: Firstly, it elucidates how sustainability can serve as a strategic tool to gain competitive advantage by exploring the interplay between corporate strategy, sustainability practices, and their impacts on overall corporate performance. Developing theoretical understandings based on various theories, namely dynamic capabilities, the resource-based view of the firm, organizational justice, and expectancy theory, this dissertation crafts frameworks that enrich this domain. By employing diverse research methods, including extensive quantitative analyses, this thesis fosters a more robust and comprehensive understanding of the nature of sustainability performance and its business implications. Secondly, this research contributes to the understanding of mergers and acquisitions, particularly regarding how sustainability performance influences acquisition premia and post-acquisition outcomes. Adopting a bidirectional approach that considers both strong and weak ESG performance impacts over time, the studies refine our understanding of corporate sustainability within the M&A context. It highlights the importance of incorporating sustainability metrics into M&A due diligence and demonstrates how differing ESG ratings between acquirers and targets can affect post-acquisition performance, stakeholder relationships, and long-term value creation. Thirdly, the thesis explores the complexities of stakeholder relationships within corporate sustainability frameworks. It shows that

comprehending employees' expectations, needs, and perceptions is crucial for effectively integrating ESG into corporate strategies. With a focus on employees as key stakeholders, the research guides corporations in aligning their sustainability strategies to enhance stakeholder satisfaction and achieve superior non-financial outcomes. Lastly, the research broadens the discussion on the strategic capability features of ESG, contributing to the growing body of literature that views it as more than mere compliance or reporting. It argues that the considerate application of ESG in business strategies can enhance internal processes, forge competitive advantages, support employee satisfaction, and drive corporate value. In summary, this thesis broadens our understanding of corporate sustainability performance and its implications on valuations, employee relationships, and mergers and acquisitions. The individual papers introduced in the preface will be discussed in subsequent sections. The thesis concludes with an exploration of the essential findings and contributions of this research.

1.1. Introduction to Sustainability Research and Terminology

As part of the introductory segment, this section outlines the progression of the academic dialogue on sustainability and Environmental, Social, and Governance (ESG) from peripheral to strategic core areas. Accordingly, it succinctly maps the transition of these fields into strategic imperatives, delineating their influence on the foundational principles of contemporary corporate strategy. Moreover, this section seeks to clarify the array of sustainability-associated terminologies, laying a foundation for the subsequent research chapters.

The ascent of ESG: Transcending from a peripheral role towards a strategic imperative?

In recent years, sustainability and ESG have experienced a shift from a peripheral area towards a core tenet of contemporary corporate strategy. This transformation has reflected the

evolving dynamics of global economies, stakeholder demands, pressure on the environment, social dynamics, technological advancements, regulatory changes, and a broader understanding of sustainable value creation. The trajectory of academic research on corporate sustainability mirrors this evolution. Early views saw sustainability mainly as a cost based on the belief that firms should primarily maximize shareholder value (Friedman, 1970). Freeman's seminal 1984 work on stakeholder theory advanced the foundational concept of a company as being dependent upon and interactive with its stakeholders. This pivotal contribution has significantly influenced the redirection of research from a perspective centered primarily on shareholders to one encompassing an integrated stakeholder-oriented view of the firm. While corporate sustainability had in many cases nonetheless still been assigned to corporate philanthropy or CSR initiatives (Wartick et al., 1985) and sustainable investing funneled as an exclusion of unethical industries such as weapons, oil and gas as well as alcohol and tobacco (Capelle-Blancard et al., 2012), literature has since undergone a discernible shift identifying sustainability at the heart of corporate strategy.

As part of this evolution, an initial debate emerged regarding whether ethics and profit could coexist (McWilliams et al., 2000), with some studies indicating an outperformance by the socially least desirable companies (Brammer et al., 2006). As research advanced, it became evident that both not only coexist but also that ethical and sustainable practices could be a source of competitive advantage (Porter & Kramer, 2006; 2011). Such findings have been aggregated in meta-studies, for instance, by Frynas and Yamahaki (2016) and Orlitzky et al. (2003), who confirmed the positive relationship between corporate social performance and corporate financial performance. Despite these findings, there are, however, mixed results regarding the direct causation between sustainability initiatives and immediate financial returns, as some studies suggest the relationship is more subtle and dependent on industry, geographical region, and the maturity of ESG integration within the company (Surroca et al.,

2010). Brammer et al. (2009) examined the stock performance of top-ranked ethical firms post an annual ethics survey, noting initial positive market reactions upon listing, followed by negative abnormal returns, partly due to firm characteristics, while newly listed good citizen companies and those outside the S&P 500 show potential for positive abnormal returns. Further, Margolis et al. (2009) and Bird et al. (2007) indicate that the impact of sustainability activities on financial performance may depend on how these activities align with a company's core business strategies and the values of its stakeholders. In terms of a strategic approach towards sustainability management, Khan et al. (2016) found that organizations with a well-integrated ESG framework consistently outpaced their counterparts in financial outcomes. This suggests that a comprehensive ESG strategy must be tailored to the firm's specific operational context, market expectations, and stakeholder needs to fully realize its potential in driving sustainable value creation. Further supporting this notion, Eccles et al. (2014) demonstrate the positive impact of a strategic focus on sustainability on organizational processes and equity prices, respectively. Based on such findings, a stronger view has been established that ESG and sustainability performance can also be understood as a strategic capability within a firm (Amui et al., 2017; Hart & Dowell, 2011), which impacts critical areas like value considerations, acquisition decisions and central stakeholder groups such as employees. Capability can, in this context, be defined as the firm's ability to leverage sustainability principles not merely as compliance measures but as strategic tools to drive innovation, capitalize on new market opportunities, maintain competitive advantage, and respond effectively to the evolving demands of various stakeholders and regulatory landscapes and ultimately generate competitive advantage (Collis, 1994). The notion of understanding ESG as a capability was accentuated by Khan et al. (2016), who demonstrated that firms focusing on those ESG aspects that are material to the business can serve as a source of competitive advantage and enable financial outperformance relative to peers. Underscoring the role of

sustainability in catalyzing innovation, deepening stakeholder rapport, and forging a sustainable competitive edge, Eccles and Serafeim (2013) posited that leading corporations have begun to harness ESG in relation to sustainable strategies for value generation, hence moving beyond areas such as mere risk mitigation. On a more refined note, Hahn et al. (2015) have added further dimensions, such as the importance of strategic reflexivity in enhancing sustainability capabilities. Contemporary views, therefore, understand ESG not only as an ethical necessity but, now at the epicenter of strategic imperatives, also as a powerful force shaping enduring competitiveness. However, ESG's strategic adoption requires that sustainability principles infuse an organization's operational essence, as substantiated by the work of Eccles et al. (2014), who provide empirical evidence that sustainability becomes a source of innovation and competitive advantage when embedded in a company's core operations and thus the corporate DNA.

ESG in the Light of Acquisitions

ESG, as a capability, can drive the success of the integration process following a transaction and influence the future operational and financial trajectory, particularly with regard to acquisitions as a core dimension of corporate strategy. Initially, studies focused on the positive impact of acquiring targets with strong sustainability performance. Aktas et al. (2011) observed improved post-acquisition ESG performance for purchasers of strong sustainability performers, which they attributed to learning from the target's best practices. Furthermore, Deng et al. (2013) noted positive post-transaction operating performance for acquirers with high ESG ratings, correlating with increased stock returns and reduced failure risk. Liang et al. (2017) demonstrated that low-ESG companies can boost sustainability performance following a merger with a high-ESG firm, driven by enhanced brand image and risk mitigation. By focusing on rating disparities between targets and acquirers as a critical

determinant, Tampakoudis and Anagnostopoulou (2020) suggested that acquirers with targets of stronger ESG ratings better integrate ESG practices, benefiting their post-acquisition performance and market value. Recognizing and addressing such disparities can influence not only immediate integration challenges but also shape the acquisition's long-term financial and operational outcomes, as reflected in stock price movements as well as overall corporate sustainability performance.

A central component of acquisitions involves assigning the appropriate valuation to acquisition targets. With reference to valuations, several studies explored the sustainability impact on acquisition premia, revealing diverging views between the shareholder expense and stakeholder value perspectives. Within the initial shareholder view context (Friedman, 1970), ESG initiatives were frequently seen as non-core expenditures with ambiguous returns. Environmental adherence was thus initially viewed as negatively correlating with financial performance, particularly when driven by stringent regulatory mandates (Porter & van der Linde, 1995). This supported the notion that potential trade-offs existed between environmental compliance and economic competitiveness. Following this line of thought, a strong focus on sustainability and ESG may, for instance, indicate additional agency costs, higher financing costs and lower equity prices (Barnea & Rubin, 2010). Some studies found adverse investor reactions to strong sustainability efforts, seeing them as a benefit to management rather than shareholders (Benabou & Tirole, 2010; Krüger, 2015). Other studies further differentiated this view, stating that ESG efforts might be more valuable in high-consumer-awareness firms as the sustainability performance is more visible to such key stakeholder groups (Aouadi & Marsat, 2018; Servaes & Tamayo, 2013). Separate from the shareholder cost view, a nascent body of literature increasingly argued the potential long-term benefits of ESG initiatives. Predominantly based on the stakeholder value view, such scholars posit that firms should cater to all stakeholders (Freeman, 1984), while there is evidence that acquirers benefit from the best

practices of targets with high ESG ratings (Aktas et al., 2011; Tampakoudis & Anagnostopoulou, 2020; Wickert et al., 2017). A third perspective suggests a more subtle interplay between sustainability costs and benefits, characterized by an inverse U-shaped curve that illustrates the relationship between ESG performance and corporate financial outcomes (Barnett & Salomon, 2006; Maqbool & Bakr, 2019; Wu & Li, 2024; Zhang & Guo, 2018). This ongoing debate highlights the need for further exploration into how ESG integration influences acquisition strategies and financial valuations.

ESG and the Employee Nexus

In recent years, sustainability research has increasingly extended its focus towards socio-economic outcomes (Wang et al., 2016) and the interplay with different stakeholder groups. Surroca et al. (2010) emphasize that the intangible resources fostered by corporate responsibility initiatives, such as employee satisfaction and organizational reputation, mediate in enhancing financial performance and stakeholder relationships, and can thus be seen as capability catalysts. Given employees' inclination towards purpose-centric organizations, it is essential to harmonize ESG objectives with employee spirit (Bode et al., 2015). CSR initiatives, as a core component of sustainability, can be leveraged to attract, retain, and motivate employees (Flammer et al., 2017; Rupp et al., 2013). CSR efforts impact employees' commitment to the organization, indicating that such initiatives not only drive engagement but also foster stronger ties between the workforce and the firm (Farooq et al., 2014). Internal metrics, such as employee satisfaction scores and attitudinal trends, are indispensable barometers in fully understanding the impact ESG initiatives can have on this stakeholder group, a topic which remains relatively underexplored in the field of micro-CSR analysis (Gond et al., 2017). Firms that skillfully navigate this nexus stand to gain not only a competitive advantage but also the trust and support of their stakeholders, thereby driving long-term

resilience and value creation (Porter & Kramer, 2011). This convergence of insights underscores the importance of further investigation into the specific mechanisms through which sustainability influences employees as possible key mediators in the exploration of sustainability-driven performance outcomes.

ESG at the Crossroads of Strategy and Stakeholder Engagement

The convergence of sustainability with corporate strategy, mergers and acquisitions and specific stakeholder groups such as employees represents a transformative juncture for contemporary research and business practices. This has been evidenced by Ioannou and Serafeim (2015), who indicate how financial analysts increasingly incorporate ESG criteria into their evaluation of firms, showing a convergence of ESG considerations with core business strategies. Wang et al. (2016) furthermore offer a comprehensive overview of CSR's role at the intersection of strategy and stakeholder engagement, discussing how this affects various business practices, including mergers and acquisitions. The embeddedness of ESG within corporate strategy is increasingly viewed as a dynamic process of strategic renewal, allowing firms to reassess and reposition their core competencies in the face of external challenges and opportunities (Gauthier & Zhang, 2020). Such renewal processes can guide firms to contemplate success beyond mere financial metrics to harness ESG as a corporate capability. A knowledgeable approach towards sustainability practices is thus essential for organizations aiming to foster innovation, maximize value, and build competitive advantage.

Usage of Sustainability Terms

In academic literature, several terms refer to sustainability research that are often interrelated but are used to highlight different aspects of corporate responsibility. Although the array of terms is expansive, attributed to varied focal areas and intersecting definitions, we

shall delineate a selection of the most prominent ones in the subsequent discussion. Within literature, the term Environmental, Social, and Governance (ESG) is relatively recent and gained prominence based on the United Nations "Who Cares Wins" report from 2005, which recommended integrating ESG into capital markets to create a more sustainable and inclusive global economy. ESG is mainly employed in the context of investment, financial analysis, and the broader financial industry, focusing on the measurable impact that a company's environmental, social, and governance practices can have on its financial performance and risk profile (Sullivan & Mackenzie, 2017). Next to this, the term Corporate Social Responsibility (CSR) has a more extended history, tracing back to the 1950s and 1960s. It gained academic prominence with Bowen's work "Social Responsibilities of the Businessman", published in 1953, often cited as one of the earliest pieces formalizing the concept of CSR. In contrast to ESG, Corporate Social Responsibility is more broadly used to denote corporations' ethical and social obligations towards their stakeholders and society at large (Carroll, 1999). It often encompasses a range of activities and initiatives companies undertake to manage their economic, social, and environmental impacts. Finally, the term Corporate Social Performance (CSP) emerged as an academic concept in the 1970s. Sethi systematically described the term in 1975 in an article titled "Dimensions of Corporate Social Performance: An Analytical Framework" to measure and evaluate an organization's CSR practices. Corporate Social Performance describes and evaluates how effectively a company integrates responsible practices into its operations and the outcomes of these practices (Wood, 1991).

Beyond such prominent general terms, literature has introduced several additional, more nuanced terms, such as Triple Bottom Line as a framework suggesting that companies should focus on profit, people, and the planet (Elkington, 1994), Sustainable Business Practices as a term that developed over time positing that companies should focus on the operational side of sustainability, emphasizing practices within a business that contribute to sustainable

development goals (notably coined by World Commission on Environment and Development, 1987), or Shared Value Creation referring to policies and practices that enhancing the competitiveness of a company while simultaneously advancing social and economic conditions (Porter & Kramer, 2011). Next to this, specialized terms illuminate a specific aspect of the area within the sustainability realm. For example, Corporate Environmental Performance (CEP) became widely recognized in the 1980s (Rockness, 1985) and is associated with quantifiable outcomes of a company's efforts to manage its environmental impact (International Organization for Standardization, 2013).

Despite each term's different origins and application areas, they are frequently conflated and utilized interchangeably in the literature, causing some confusion. This can be attributed partly to the fact that these terms address overlapping dimensions of corporate behavior and impact and partly to the indistinct boundaries among them. To mitigate confusion and ensure inclusivity for the research referenced by this study, we will primarily employ the term ESG in light of our use of specific ESG data provided by the financial information provider LSEG/ASSET4. Additionally, we will use corporate sustainability owing to its wide-ranging and encompassing perspective, except where terms are delineated otherwise.

2. Localizing the ESG Sweet Spot: Disentangling the Inverted U-shape Relationship between Environmental Performance and Acquisition Premia

Abstract: What factors lead investors to perceive ESG as value-adding or value-reducing is an ongoing debate within the academic literature, with previous studies yielding diverging results. In this context, most studies typically rely on analyzing the impact of general ESG factors on the valuations of public securities. This paper focuses on the relationship between corporate environmental performance and premia offered during acquisitions, where higher idiosyncratic risk creates a more vital need for factoring in environmental performance as non-financial data for firm valuation. In this context, we ask: How do interdependent value-adding and value-reducing drivers shape the relationship between environmental performance and acquisition premia? Accordingly, we propose an inverted U-shape relationship, with a value-maximizing sweet spot in environmental performance intensity as a trade-off between value-adding and value-reducing factors. The model posits a balanced sustainability approach in relation to the Resource-Based View of the Firm that avoids the value reductions associated with environmental under- or over-commitment while maximizing benefits through appropriate environmental engagement. Next to this, we suggest the acquirer's environmental performance to constitute a moderating factor in the determination of valuation premia, with a more substantial impact among targets with lower environmental performance, highlighting that valuation premia are not solely driven by the existence of valuable, rare and inimitable resources and capabilities but also by the acquirer's potential to enhance such. Building on the interdependency between the environmental performance of the acquirer and target, we advance the RBV to propose a dynamic resource valuation perspective, highlighting that the target-acquirer relationship plays a critical role in the valuation of resources and capabilities. Drawing on an analysis of 100 global acquisition announcements between 2010 and 2019, we confirm the proposed relationships. The study contributes to a better understanding of the value impact of environmental performance in acquisitions and the role of the acquirer's and target's environmental performance to each other, offering a differentiated perspective on how environmental factors can both add and reduce value.

2.1. Introduction

A central controversy within corporate sustainability research is the question of what leads investors to view the Environmental, Social and Governance (ESG) performance of a company as value-reducing (DesJardine et al., 2021; Mathur & Mathur, 2000) or as value-enhancing (Gregory et al., 2014; Jo & Harjoto, 2011). The consideration of ESG information by scholars and practitioners comes with the increasing inclusion of alternative data as material non-financial information within corporate valuation and fundamental analysis processes (Blank et al., 2019; Monk et al., 2019). The use of non-financial information has proven helpful in the valuation of businesses, assets, and securities, primarily due to the saturated usage of conventional financial data (BlackRock, 2021). As demonstrated by Chalmers et al. (2023), sustainable finance has particularly focused on the Environmental component within ESG in this context. Notably, the paradigm shifts of an increased market and investor awareness for corporate sustainability performance as decisive non-financial information have added an essential dimension in determining premia and accurate valuations in corporate acquisition processes (Cordazzo et al., 2020). Meta studies, such as Whelan et al. (2021), have predominantly substantiated a positive relationship between corporate sustainability performance and the valuation of public equities with respect to the value-enhancement versus value-reduction debate, demonstrating the valuation impact such factors can have.

Results are not as unanimous for the firm value impact and bid premia in relation to acquisitions. Several studies have found that an acquirer is likely to pay a premium for a target with a strong and a discount for a target with a weak ESG performance, respectively (Choi et al., 2015; Gregory et al., 2014; Jo & Harjoto, 2011; Qiao & Wu, 2019). Such studies usually argue in line with stakeholder value theory, stating that the interests of stakeholders in firms with strong ESG ratings are in greater alignment, which in return is performance enhancing and increases shareholder wealth by fostering beneficial stakeholder relationships and

prioritizing long-term value initiatives over short-term profits (Freeman et al., 2004; Jensen, 2002). Other studies have found indicators that investors perceive sustainability initiatives and strong ESG scores negatively and that they can be detrimental to firm value (DesJardine et al., 2020; Knowles et al., 2000; Krüger, 2015). Such studies typically base their explanations on the assumption of shareholder costs, emphasizing the negative impact of environmental and community-focused Corporate Social Responsibility (CSR) activities perceived as wasteful wealth transfers and the belief that long-term CSR intentions hinder short-term value maximization. A third line of thought assumes a more complex interdependency between ESG cost and benefits that displays an inverse U-shaped relationship between ESG performance and corporate financial performance (Barnett & Salomon, 2006; Maqbool & Bakr, 2019; Wu & Li, 2024; Zhang & Guo, 2018). Pertaining to mergers and acquisitions (M&A), studies mirror this controversy between the shareholder expense view (Friedman, 1970; Jensen, 2002) and the stakeholder value view (Freeman, 1984; Porter & Kramer, 2006). As an accommodating perspective, results show that firms that have strong ratings in ESG categories identified as material and at the same time have low ratings on such categories identified as immaterial show better financial performance compared with firms that perform well in all ESG areas (Khan et al., 2016). This indicates that strong attention to ESG performance beyond a reasonable scope is rather detrimental to a company as opportunity costs outweigh possible benefits. Next to this, as suggested by Eccles et al. (2014), firms with high ESG performance are often at their efficiency frontier regarding sustainability. In the context of the Resource-Based View (RBV), this limitation has highlighted the role of resource fit and complementarity, where the strategic value of acquisitions is not solely determined by the possession of valuable resources but also by the potential to enhance these resources synergistically (Sirmon et al., 2007). Thus, there are indicators that acquirers' sustainability performance and the potential for synergistic resource enhancements may impact valuations.

In sum, the literature presents us with two fundamentally different theoretical approaches, with scholars having started to reconcile by proposing a curvilinear relationship (Barnett & Salomon, 2006; Maqbool & Bakr, 2019; Wu & Li, 2024; Zhang & Guo, 2018). Nonetheless, the relationship between drivers that increase or reduce bid premia in the light of sustainability performance is still poorly understood. Unravelling the interactions between these drivers is, however, crucial for comprehending *how* environmental performance is valued. We thus ask: How do different environmental performance profiles of targets and acquirers and corresponding value-adding and value-reducing drivers shape acquisition premia?

To answer this question, we develop a framework to map the value-maximizing sweet spot to assign optimal environmental performance as a trade-off between the shareholder cost and stakeholder value theory. We focus on acquisition premia because M&A depicts a very special form of value assessment, which typically requires a profound dive into the respective target to overcome information asymmetries (Luypaert & Van Caneghem, 2017). Concretely, by synthesizing the literature, we propose that weak environmental performance in a target company as under-commitment can lead to increased regulatory costs & risks (Abbot, 2005), higher capital costs (Jung et al., 2018), litigation risks (Kassinis & Vafeas, 2002), brand & reputation damage (Khojastehpour, & Johns, 2014; Zou et al., 2015), intangible liabilities (Konar & Cohen, 2001), stakeholder distrust (Saengsupavanich et al., 2012) as well as specific stakeholder challenges such as a lack of employee satisfaction (Pinzone et al., 2019), which correspondingly result in lower acquisition premia. On the other side of the performance spectrum, we propose that an overcommitment through strong environmental performance is likely to negatively impact valuation due to factors, namely increased operational costs (Ambec & Lanoie, 2008), value chain rigidity (Carter & Rogers, 2008), abatement costs (Xu & Kim, 2022), a diverted management focus (Ocasio, 1997), a possible resource misallocation (Tombe

& Winter, 2015) as well as opportunity costs arising from a strong environmental focus (Schaub, Ghazoul, et al., 2023). Our framework further theorizes a value-maximizing sweet spot in environmental performance that fosters an enhanced brand & reputation (Quintana-García et al., 2022), stakeholder trust and loyalty (Grimmer & Bingham, 2013), knowledge transfers (Hamdoun et al., 2018), improved operational efficiencies (Hart & Ahuja, 1996) and a possible boost in innovation (Dangelico & Pujari, 2010), while minimizing the costs and risks associated with both underperformance and over-commitment (Godfrey et al., 2009). Furthermore, we explore how the acquirer's environmental traits moderate the premia and discounts for varying points along the value curve. We hypothesize that an acquirer with strong environmental performance is generally better positioned to recognize the value-adding potential of targets with a strong environmental commitment. However, this advantage declines as targets reach a certain level of environmental performance, suggesting a diminishing return on the ability to add further value for targets with already moderate or strong environmental performance along the posited inverted U-shape.

We test the relationship between environmental performance and firm valuation resulting from these drivers with a study based on a comprehensive dataset of international acquisition events. Our research centers on a pool of 22,618 acquisitions announced during 2010-2019 and sourced from the Thomson Reuters M&A database. We narrowed this pool to 100 events for which complete financial, ESG, transaction and market comparison data are available. The impact on valuation premia of four distinct environmental rating categories as delineated by LSEG (formerly Refinitiv) ASSET4 is assessed for each acquisition, considering trading and transaction price levels of industry counterparts. In contrast to previous work, our study, to our knowledge, is the first to depart from stock price premia as a measure and instead adopt market reference levels derived from comparable firms to ascertain acquisition premia or discounts. This represents a significant evolution from the view of stock price bid premium,

where aspects of a target's environmental performance may have already been factored in by the market prior to an acquisition (King & Lenox, 2001). In contrast, a transaction comparison view takes into account the full valuation impact by benchmarking the bid premium against relevant market reference levels (Koller et al., 2010). Next to this, we break the data set into two groups for targets with lower and targets with higher environmental performance. For these sets, we run corresponding mediation analyses with the environmental performance difference between acquirers and targets as moderating variables.

The results confirm our hypotheses of a polynomial/inverse U-shaped relationship between the environmental performance of a target company and the premia offered, which suggests a sweet spot of a value-maximizing environmental performance amid shareholder cost and stakeholder value. In addition to the inverted U-shape, the study confirms a moderating impact of an acquirer's environmental performance on bid premia for targets with a low to moderate environmental performance, with stronger acquirer performance correlating with a higher premium paid. However, such a moderating relationship could not be found for targets with moderate to high environmental performance. The results suggest an environmental performance equilibrium, indicating that the sustainability approach balances decreasing and increasing value factors. Companies with under or over-committed environmental performance face value reductions that are either directly linked to their lack of environmental engagement or indirectly due to unintended consequences of a very strong environmental focus, suggesting that adopting a strategic and balanced approach to environmental performance can help mitigate risks and create long-term value. Next to this, the study highlights the importance of the acquirer's environmental performance in the assessment of the value of a target, demonstrating that the ability to synergistically harness such performance along the inverted U-shape plays a moderating role in the determination of acquisition premia for targets with a low to moderate environmental performance. Such a moderating role is not detectable for

targets with a stronger environmental performance. We suggest that this is linked toa strongly performing acquirer's ability to assess the positive value impact of environmental performance fully, which allows for the recognition and capture of possible optimization potential in the target. Considering the inverted U-shape and declining potential for further value improvements, such a relationship has a diminishing impact on targets with higher environmental performance. Based on the interdependency between the environmental performance of the acquirer and target concerning the valuation of resources and capabilities, we further develop RBV into a dynamic resource valuation perspective. This asserts that the strategic value of resources and capabilities is context-dependent, with the recognition of benefits and risks varying according to the existing resource profiles of the acquirer and target.

Overall, our paper contributes to the ongoing academic debate about the role of environmental performance in shaping market perceptions and transaction values. The focus on environmental factors provides valuable insights as it is an area that is relatively objective to measure (Klemeš, 2015), has a strong operational exposure (Gupta, 1995), and is an area investors and companies increasingly see as a critical discipline within ESG (Friede et al., 2015). As such, the study bridges the seemingly contradictory view between the shareholder expense versus the stakeholder value maximization view by positing a value-maximizing sweet spot. Secondly, the paper maps the different drivers in relation to valuations based on environmental performance, providing a framework for allocating environmental efforts. Thirdly, the study highlights that an acquirer's environmental performance and its difference from the target's performance are essential in determining acquisition premia. Hence, it adds a bi-sided view on determining respective premia, including the acquirer's performance. The framework can guide future empirical studies about the impact of environmental performance on corporate valuation, particularly concerning mergers and acquisitions. Practitioners can leverage these findings to make more informed decisions regarding acquisition premia and

target selection, taking into account the significance of environmental performance in the valuation process and corporate value creation to hence get a more tangible view of the impact of such non-financial information (Wang et al., 2016).

2.2. Theory and Hypotheses

This section outlines the core theories that inform our hypothesis development. It delves into the determinants that either contribute to or diminish the value of acquisition premia, culminating in the formulation of hypotheses.

2.2.1. The Impact of ESG on Firm Value

Within the growing area of ESG-related research, the literature has focused on the performance of public equities for a first assessment of possible ESG value implications. Twelve of thirteen meta-analyses published between 2015 and 2020, which relate to 1,272 underlying studies, found a positive association between some aspects of sustainability and financial performance (Whelan et al., 2021). Of the studies focusing on equities, 33% found a positive impact of ESG and 54% a mixed or neutral effect. The meta-study furthermore concluded that ESG momentum might cause improvers to outperform leaders.

Acquisitions depict a very special form of equity investment as they require deep due diligence by the buying party that goes beyond the analyses done for the purchase of public equity (Haleblian et al., 2009). While stock market investors can cancel out most of the idiosyncratic risk through diversification, stand-alone acquirers have a more substantial exposure to such individual risk factors and hence value strong ratings within ESG to reduce the uncertainty by leveraging alternative data (Lins et al., 2017). During price negotiations, buyers, by nature, know less about the target's asset quality than the target management does

and hence face information asymmetry (Coff, 1999). In this context, acquisition premia can be justified when the resources and possible synergies relating to the target firm are difficult to quantify (Laamanen, 2007). ESG scores can help reduce such information asymmetries by providing information on a target beyond financial KPIs and hence constitute an essential role for a more profound assessment of the value of a firm (Dhaliwal et al., 2011).

Several scholars have, in this setting, drawn their attention to the effects of ESG in the light of corporate acquisitions (Gomes & Marsat, 2018; Krishnamurti et al., 2021; Qiao & Wu, 2019). Results of a possible impact of ESG performance on acquisition premia have not been unanimous and are mostly discussed in light of the conflict between shareholder expense and stakeholder value view. These will be further discussed in the following section.

Shareholder Expense View

Based on the neoclassical economic and shareholder value theory, the shareholder expense view is grounded in the belief that a company's goal and only social responsibility should be to maximize firm value and shareholder profits (Friedman, 1970). Managerial social responsibility would, as a "soft idea", be a wrong investment of resources in this context (Levitt, 1958). Investors can perceive a strong performance in social responsibility areas as a signal that the firm bears excessive agency costs (Jensen, 1986), which can impact the firm-level resource allocation efficiency, including sacrificing potential profits in adherence to ethical standards (Bhandari & Javakhadze, 2017).

Studies that validate the view of CSR efforts being detrimental to shareholders' value are, among others, Mathur & Mathur (2000), who show that green marketing efforts can cause negative abnormal stock returns, while investors seem to feel relatively more comfortable with companies demonstrating strong financial performance. Krüger (2015) indicates that investors can also react negatively to positive CSR policy announcements, which he interprets as a result

of agency problems that see CSR primarily benefitting the reputation of managers at the expense of shareholders (Benabou & Tirole, 2010; Cheng et al., 2013).

Whether sustainability performance materializes in firm value may depend on the visibility of such efforts. Servaes and Tamayo (2013) found that the impact of CSR measures on firm value is only positive for companies with a high consumer awareness, which they measure through advertising expenditures. It is either negative or insignificant for companies with low customer awareness, which constitute cases where corporate CSR efforts cannot be valued. They conclude that management should reconsider CSR activities and communication measures if a company is not operating in an advertising-intense environment. Aouadi and Marsat (2018) add to the awareness constraint that a higher degree of ESG controversies - regardless of their negative connotation - can enhance the visibility of a company, which in return can make the overall CSR performance more visible. Desjardins et al. (2020), however, find that activist hedge funds, as the unintended audiences of such reports, are more likely to target companies with stronger CSR levels as they see such performance as a waste of capabilities that is impairing short-term shareholder value maximization. While acknowledging that Corporate Social Performance (CSP) represents a cost to a company without any likely adequate short-run return, a long-term CSP engagement can, in the context of negative events and crises, protect both a company's stock and bond prices through insurance-like effects (Shiu & Yang, 2017).

Stakeholder Value View and Resource-Based View of Firm

The stakeholder value view, by contrast, argues that a firm should create value for all stakeholders beyond a mere focus on shareholders (Freeman, 1984). The stakeholder value view furthermore states that integrating stakeholder interests into corporate strategy not only mitigates risks but also uncovers opportunities for innovation and market differentiation,

enhancing long-term profitability and sustainability (Harrison et al., 2015). Ethical behavior may, in this context, actually enable firms to develop competitive advantages and become more profitable (Porter & Kramer, 2006) and turn into a competitive advantage in connection with the Resource-Based View of the Firm (RBV) (Wernerfelt, 1984), emphasizing the strategic importance of resources for the creation of value. Such resources can include tangible assets, intangible assets such as reputation and proprietary technology, as well as human capital, all of which contribute to building a firm's unique capabilities and competitive edge (Barney, 1991). In terms of value drivers, firms can seek to maximize stakeholder value through resources and capabilities that are unique to a specific organization and, hence, able to create a sustaining advantage (Barney, 1991). Under the VRIO framework, which posits that a sustained competitive advantage originates from resources or capabilities that are valuable, rare, and inimitable, it also highlights an organization's capacity to capture this value (Chatzoglou et al., 2018).

Valuation Premium and Valuation Discount

In the realm of valuations, a premium represents the additional amount an acquirer is willing to pay over the market or book value of a target company, reflecting the perceived additional value or synergies the acquirer believes it can derive from the acquisition (Gaughan, 2010). This concept is integral to understanding the dynamics of corporate acquisitions, as it encapsulates the acquirer's assessment of the target's intrinsic and extrinsic value, including future growth prospects, operational synergies, and strategic alignments (Bruner, 2004). The premium paid in acquisitions embodies an assessment of both tangible and intangible assets, as well as potential risks and rewards associated with integrating two companies (Capron & Pistre, 2002). The willingness to pay a premium is hence indicative of the acquirer's confidence in realizing value creation through synergies, such as cost reductions, enhanced market power,

diversification, and innovation capabilities (Hitt et al., 2001; Shimizu et al., 2004). Conversely, a valuation discount refers to the acquisition of a target company for a price lower than its market or book value, suggesting that the acquirer perceives certain risks, challenges, or inefficiencies that could detract from the target's value following the acquisition (Ghosh, 2001; Healy et al., 1992). This concept is critical for understanding acquisition pricing, highlighting that acquisitions are not always premised on positive synergies or growth prospects but can also reflect strategic calculations to mitigate perceived risks and costs (Martynova & Renneboog, 2008).

In the realm of sustainability, Qiao and Wu (2019) confirmed that the CSR of a target company can positively affect cross-border acquisition premia. Gomes and Marsat (2018) further find that acquirers pay a premium for the CSR performance of targets, while the social component of CSR is only valued when buying foreign companies. According to the study, firms are giving greater importance to social performance in cross-border deals to reduce risk and information asymmetry inherent in such transactions. The authors also highlight that relationship-building with critical stakeholders through sustainability practices can reduce M&A-related risks and information asymmetry, which results in sustainability-related bid premiums paid for acquisitions. The stock market can furthermore reward investors for making socially and environmentally responsible investments (Aktas et al., 2011; Tampakoudis & Anagnostopoulou, 2020).

2.2.2. Environmental Performance as Indicator for Future Value

In recent years, financial markets have increasingly considered environmental issues. Research demonstrates that a firm's environmental performance has evolved into a significant determinant for both the valuation of equity and debt (Friede et al., 2015). In assessing the value of a target company during an acquisition, buyers typically focus on future value

expectations, taking into account aspects such as fundamental value (Koller et al., 2005), growth opportunities (Fama & French, 1998), potential synergies (Campa & Kedia, 2002), industry dynamics (Porter, 2008), and the target's competitive position (Graham et al., 2002).

The environmental performance of a target company can provide insights into expectations about future value by impacting an acquirer's inferences. To understand how the consideration of environmental factors can directly or indirectly influence value premia or discounts, we in the following build on previous research that has looked at various aspects of the theorized value trade-off between an under- versus an over-committed environmental performance.

Value-reducing factors of a weak environmental performance

A weak environmental performance can indicate increased costs and elevated risks that lead acquirers to assign a lower valuation premium or a valuation discount to a target. These value-reducing drivers can result from a weak environmental engagement, which in turn can have repercussions on a company through regulatory, reputational, operational, and financial factors. Acquirers typically price in such forward-looking factors as part of their valuation process and may allocate stronger discounts to expected or pending environmental risks, litigation cases or expected regulatory obstacles (Aktas et al., 2011).

Regarding financial resources, regulatory and legal factors are principally concerned with a company's compliance with environmental laws and regulations. A weak environmental performance signals a heightened risk of non-compliance, potentially resulting in fines and increased scrutiny from regulatory bodies (Abbot, 2005). This also includes an elevated risk of litigation stemming from environmental disputes (Kassinis & Vafeas, 2002) and a higher cost of capital due to increased risk premia allocated by capital markets (Jung et al., 2018). Concerning a target's valuation, such elevated capital costs could lead acquirers to assume

higher discount rates in valuation models, which tend to lead to lower valuations in acquisition bids. Furthermore, regarding non-financial resources, weak environmental performance and particularly environmental violation events can be detrimental to a company's reputation (Zou et al., 2015). Konar and Cohen (2001) confirmed that poor environmental practices are linked to a substantial decrease in firms' intangible asset value. The reputational impairments of a weaker environmental performance or possible negative environmental media coverage can also result in stakeholder distrust (Saengsupavanich et al., 2012) and an expected difficulty maintaining and further developing relationships with customers (Sen & Bhattacharya, 2001; Luo & Bhattacharya, 2006), business partners (Brammer & Millington, 2008) and general stakeholders involved in the business (Waddock & Graves, 1997). Past studies were, however, not entirely conclusive concerning the impact of environmental performance on customers' brand perceptions and purchasing decisions (First & Deepali, 2010). This also includes heightened intangible liabilities due to public perception or stakeholder disapproval (Matsumura et al., 2014). Focusing on organizational resources and a weak environmental focus can furthermore amplify stakeholder challenges and stress critical stakeholder groups such as employees, potentially affecting their job satisfaction (Pinzone et al., 2019). Notably, many of these discounts are directly linked to environmental underperformance, highlighting the fundamental role that environmental performance plays in shaping a target company's valuation. Such discounts would be considered in the context of shareholder cost considerations and can affect the valuation of underperforming companies, which impacts value considerations by acquirers irrespective of their environmental priorities or sensitivity.

Value-reducing factors of a strong environmental performance

On the higher end of the environmental performance spectrum, it is essential to distinguish between value-enhancing activities and over-committed efforts that may lead to a

negative valuation impact. Research has shown that proactive ESG commitments can indeed mitigate direct risks and can create corporate value, among other things, by improving financial performance, enhancing reputation, and driving innovation (Eccles et al., 2014; Fombrun et al., 2000; Godfrey et al., 2009; Nidumolu et al., 2009).

Beyond such value-enhancing proactive environmental performance, we expect that over-committed performance will similarly lead to valuation discounts. Among the most notable factors impacting resources, the bidding firm may perceive a company imposing strict environmental standards to avoid environmental violations in the light of external pressure can contribute to costly environmental overcompliance. This would imply elevated operational costs (Ambec & Lanoie, 2008) as well as limited flexibility along the value chain due to more rigid sourcing (Carter & Rogers, 2008) and possible abatement costs to achieve higher environmental standards (Xu & Kim, 2022). Regarding growth and innovation constraints, new environmental regulations can send mixed signals to companies regarding corresponding rules, particularly in early adaptation phases (Delmas & Montes-Sancho, 2011). This could posit some environmental lockup effects with the company not being fully able to expand or diversify its business due to unclear environmental frameworks that limit growth opportunities, induce rigidity in decision-making, increase compliance costs and create innovation trade-offs. Focusing on organizational resources, a substantial diversion of the managerial focus towards environmental topics can lead to a lack of managerial attention in other critical and value-driving business areas (Ocasio, 1997) as well as a misallocation of resources due to environmental policy distortions (Tombe & Winter, 2015). Referring to capabilities, companies may face opportunity costs in case they have too much of an environmental focus (Schaub, Ghazoul, et al., 2023) or could be subject to innovation constraints due to a lack of clarity on new environmental standards (Delmas & Montes-Sancho, 2011).

These value-reducing drivers could imply that very strong attention to environmental performance beyond a reasonable scope could lead to costs outweighing possible benefits (Khan et al., 2016). The latter approach would be more aligned with the shareholder cost view (Barnett & Salomon, 2012) and a diminished impact of valuable, rare, costly to imitate and resources and capabilities as well as difficulties to capture such value through the organization as positive by the Resource-Based View of the Firm. Buyers with a strong sensitivity towards environmental factors may, however, as a proactive choice, instead choose targets that match their strong performance, as this alignment in environmental commitment can foster synergies, promote shared values, and facilitate smoother integration during post-acquisition processes (Zollo & Meier, 2017).

The value-optimizing environmental performance balance

Companies can capitalize on the benefits of proactive environmental engagement and the build-up of resources and capabilities. In terms of resources, they can, among others, target a reduction of risks and costs, such as a reduction through sanctions due to increased stakeholder goodwill (Godfrey et al., 2009). Next to this, they can benefit from an enhanced reputation (Quintana-García et al., 2022) and a higher degree of stakeholder trust, such as stronger customer purchase intentions (Grimmer & Bingham, 2013). Focusing on organizational resources, they can benefit from positive impacts on knowledge transfers (Hamdoun et al., 2018) and improved operational efficiencies due to cost advantages (Hart & Ahuja, 1996). In terms of organizational capabilities, such performers can benefit significantly from increased innovation, especially in creating green products (Dangelico & Pujari, 2010).

Hahn et al. (2018) elucidate in this context the paradoxical nature of corporate sustainability, indicating that a moderate level of environmental performance can optimize value, supporting the notion that an optimal balance in environmental performance can

maximize company benefits. Based on the value-reducing factors of a weak and strong environmental performance outlined above, acquisition premia are hence likely to be the highest at a moderately strong environmental performance level where the positive effects of a sound environmental scoring add to a reduced risk, lower costs as well as an enhanced brand value and reputation while none of the indirect negative adjustment factors of a very strong environmental performance focus show effect yet. The table below depicts the key value-adding and reducing drivers on corporate resources and capabilities in light of different environmental performance levels.

Figure 2.1: Target Environmental Performance: Impact Area Matrix

Impacted Areas	Low Environmental Performance	Moderate Environmental Performance	High Environmental Performance
Financial Resources	▪ Regulatory Costs & Risks (Abbot, 2005) ▪ Higher Capital Costs (Jung et al., 2018) ▪ Litigation Risks (Kassinis & Vafeas, 2002)	▪ Risk & Cost Reduction (Godfrey et al., 2009)	▪ Increased Operational Costs (Ambec & Lanoie, 2008) ▪ Value Chain Rigidity (Carter & Rogers, 2008) ▪ Abatement Costs (Xu & Kim, 2022)
Non-Financial Resources	▪ Brand & Reputation Damage (Khojastehpour, & Johns, 2014; Zou et al., 2015) ▪ Intangible Liabilities (Konar & Cohen, 2001) ▪ Stakeholder Distrust (Saengsupavanich et al., 2012)	▪ Enhanced Brand & Reputation (Quintana-García et al., 2022) ▪ Stakeholder Trust and Loyalty (Grimmer & Bingham, 2013) ▪ Risk & Cost Reduction (Godfrey et al., 2009)	▪ Growth & Innovation Constraints (Delmas & Montes-Sancho, 2011)
Organizational Resources	▪ Stakeholder Challenges, Lack of Employee Satisfaction (Pinzone et al., 2019)	▪ Knowledge Transfer (Hamdoun et al., 2018) ▪ Improved Operational Efficiency (Hart & Ahuja, 1996)	▪ Diverted Management Focus (Ocasio, 1997) ▪ Resource Misallocation (Tombe & Winter, 2015)

Capabilities		▪ Innovation Boost (Dangelico & Pujari, 2010)	▪ Opportunity Costs of Environmental Focus (Schaub, Ghazoul, et al., 2023) ▪ Growth & Innovation Constraints (Delmas & Montes-Sancho, 2011)

2.2.3. The Curvilinear Relationship of Environmental Performance and Acquisition Premia

The literature review has revealed two seemingly contradictory approaches to sustainability efforts based on the shareholder cost and stakeholder value views, for which full scientific consensus has yet to be reached. Some studies have found indicators that sustainability performance can entail costs which can, in case of a lack of visibility, not always be materialized financially (Servaes & Tamayo, 2013) and that sustainability initiatives can lead to a negative impact on equity value (Krüger, 2015; Mathur & Mathur, 2000). A focus by management on immaterial ESG areas can furthermore be detrimental to corporate value (Khan et al., 2016), possibly by claiming management attention that could otherwise be assigned to other areas. In some cases, companies with strong CSR performances can even attract activist funds as unintended audiences that see such engagements as a waste of capabilities (DesJardine et al., 2020). Other scholars have, by contrast, found that strong ESG ratings can indeed lead to stronger financial performance and higher corporate valuations. Results showed that acquirers tend to assign premia for acquiring CSR-strong targets (Gomes & Marsat, 2018) and that such a premium can be particularly pronounced for cross-border transactions (Qiao & Wu, 2019). Integrating best practices from target companies can be one of the drivers for higher sustainability-related acquisition premia (Wickert et al., 2017).

Focusing primarily on companies' competitiveness and financial performance, a third track of researchers has explored a curvilinear approach by inferring that the interaction

between costs and benefits of sustainability engagements is too complex to assert a linear relationship. The alignment of such relationships is, however, not unanimous. Some studies yield an inversely U-shaped relationship between CSR and financial performance (Barnett & Salomon, 2006; Maqbool & Bakr, 2019; Wu & Li, 2024; Zhang & Guo, 2018).

Following the line of thought that the complexities of costs and benefits associated with environmental engagements may lead to a curvilinear impact on acquisition premia paid, we hypothesize a relationship between environmental performance and acquisition premia that forms an inverted U-shape. This shape arises when shareholder costs and a target's inability to acquire, manage, and leverage a unique set of valuable, rare, inimitable, and non-substitutable resources and capabilities, as suggested by the resource-based view, result in valuation discounts. Up to an inflexion point, stronger environmental performance is leading to an increase in acquisition premia based on the superior usage and build-up of resources and capabilities, such as optimizing operational efficiencies, enhancing reputation, and fostering stakeholder trust and loyalty. Beyond this inflection point, a further focus on environmental performance is rather having a value-reducing impact due to increased operational and abatement costs, partial growth and innovation constraints, a diverted management focus and possible resource misallocations with a sub-optimal usage and build-up of available resources in line with the Resource-Based View. This lets us conclude a first hypothesis as follows:

> **H1:** *The relationship between the environmental performance of acquisition targets and the acquisition premia paid is curvilinear, taking the form of an inverted U-shape.*

2.2.4. The Role of the Acquirer's Environmental Performance

In addition to the sustainability performance of target companies, research indicates that the ESG performance of acquirers plays a crucial role in determining the premia paid in

M&A transactions. In terms of acquisition preferences, companies with strong ESG profiles are more likely to acquire targets that also have pronounced sustainability profiles, viewing a target's environmental performance as a way to boost their shared sustainability commitment and benefit the combined entity in terms of reputation, stakeholder relations, and long-term value creation (Deng et al., 2013; Flammer, 2013). Alongside the preference of strong ESG performers to acquire targets with a similar performance profile, most studies indicate that acquirers with strong ESG performance typically offer higher bid premia in acquisitions, reflecting their ability to identify and unlock a broader set of synergies in their targets. Krishnamurti et al. (2019) confirm that acquirers with an advanced sustainability profile are likelier to purchase companies with a similar sustainability performance level. They further argue that bidders with a strong ESG performance, reflecting a higher degree of stakeholder orientation, are more adept at identifying deal features that align with stakeholder interests. This inclination relates to the potential for synergy realization, operational efficiency, improved post-acquisition integration, cultural compatibility, and strategic alignment, which are crucial factors in the success of an acquisition (Harrison et al., 2001). In the context of the Resource-Based View, research has underscored the importance of acquirers' capabilities to accurately recognize, evaluate, and integrate strategic resources, significantly influencing the success of mergers and acquisitions and the actualization of expected synergies (Capron & Pistre, 2002).

Within this framework, acquirers with a pronounced environmental performance are more predisposed to discern the benefits of enhanced environmental performance in targets, suggesting that the acquirer's environmental stance may influence the premium paid (Russo & Fouts, 1997). Resource assessment with reference to the RBV can assign appropriate values to these intangibles as they often play a pivotal role in driving a company's value. As discussed by Arikan (2002), in the M&A context, significant challenges lie in valuing and capturing

intangible assets, such as brand reputation, intellectual property, and human capital. Strong environmental performers may, hence, be more apt to assess and harness such value potential. In contrast, acquirers with lesser environmental performance might exhibit a diminished sensitivity to the environmental attributes of their targets, prioritizing financial or other strategic dimensions of the acquisition instead (Krishnamurti et al., 2019), potentially overlooking critical value drivers, along with associated risks and costs (Rabier, 2017).

Combining this with the posited inverted U-shape relationship between a target's environmental performance and premia paid, the efficacy of post-acquisition value realization may hence vary significantly, contingent upon the acquirer's capability to navigate the target firm towards the optimal and most advantageous position for value optimization point on the curve. The premia and discounts applied thereby depend on the acquirer's lens to reflect on risk and value drivers related to environmental performance. For acquirers purchasing targets with low to moderate environmental performance, we derive a higher likelihood of recognizing the potential for post-acquisition enhancement of the environmental performance in targets and the realization of expected synergies. The potential for value addition is especially pronounced for acquirers who already exhibit strong environmental performance and can propel targets towards the optimum of the inverted U-shape following acquisition. Thus, the acquirer's environmental performance acts as a moderating factor, influencing the inverted U-shape. Conversely, for targets with already robust environmental performance, such a moderating relationship is less marked, as the ability of acquirers to unlock further value by steering targets to the value-optimizing point via their superior environmental performance is constrained. In accordance with Hitt et al. (2001), research indicates that acquirers may exercise greater caution when paying high premiums for targets whose resources, whilst valuable, present limited opportunities for further exploitation within the acquirer's resource base. Additionally, as Eccles et al. (2014) suggest, firms at the peak of ESG performance are frequently at their

efficiency frontier concerning sustainability, posing a challenge for acquirers to create additional value that justifies a higher premium. The strategic value of acquiring firms at the sustainability frontier may, in this sense, be diminished due to the limited scope for additional value creation through the transfer of best practices or further performance improvements. Concerning the RBV, this limitation underscores the role of resource fit and complementarity, where the strategic value of acquisitions is not solely determined by the possession of valuable resources but also by the potential to enhance these resources synergistically (Sirmon et al., 2007). The moderating role of the environmental performance difference between the acquirer and the target could, in this sense, be less developed for targets with a stronger environmental performance. Building on these insights, we articulate the following hypothesis:

>   ***H2:*** *The environmental performance of the acquirer significantly moderates the inverted U-shape relationship between the target's environmental performance and acquisition premia for targets exhibiting low to moderate environmental performance, attributable to the acquirer's enhanced value-adding potential. Conversely, the impact diminishes for targets with moderate to high environmental performance, indicating reduced capacity to add further value along the inverted U-shape.*

2.3. Data Description and Methodology

This section details the quantitative research approach and methodology adopted for the study, focusing on the analysis of archival financial data. We employ a comprehensive data collection strategy that integrates detailed transaction information by LSEG and ESG performance metrics provided by LSEG/ASSET4 to examine the impact of environmental performance on acquisition premia. The choice of a quantitative approach, supported by archival data, enables robust statistical testing and allows for the generalization of findings

across a wide range of industries and geographical locations. This methodology is particularly suited to our objectives as it facilitates the precise measurement of performance relationships between the target and acquirer and the corresponding premia.

2.3.1. Acquisition data

For this study, we extracted a global dataset of acquisitions spanning the years 2010 to 2019, utilizing the LSEG (formerly Refinitiv) Eikon Deal Screener. In addition to basic deal information, we downloaded a range of well-known covariates (see control variable section). We refined the dataset, originally comprising 22,228 global acquisition events across all industries, by filtering for instances where comprehensive environmental and financial data were fully available for both the acquirer and the target. Our focus was on control bid deals where bidders sought to acquire more than 50% ownership, allowing for the assessment of a potential control premium. Furthermore, we selected companies with complete ESG, operational, and financial data available at the time of the transaction announcement. To account for outliers in terms of valuations, we winsorize any transaction with multiple valuation deviations to comparable transaction peer groups above or below 35x. This rigorous selection process resulted in 100 transactions forming the basis of our study. Among these, 47 were cross-industry (47%), 35 cross-border (35%), and 70 involved cash payments (70%). Reference Table 2.1 of the appendix for a more detailed breakdown of the acquisition data.

2.3.2. ESG Data

To gauge a company's environmental performance, we utilize the data provided by LSEG (formerly Refinitiv) ASSET4, offering an overall Environment Pillar Score as a cumulative assessment of the environmental stewardship of the corresponding companies. This score provides a comprehensive assessment of a company's environmental stewardship by

amalgamating metrics like greenhouse gas emissions and environmental innovation, derived from reported environmental data and ratings across ASSET4's foundational environmental categories. In addition to the overall Environment Pillar Score, this study analyses three distinct category scores from ASSET4, serving as subcategories within the Environmental Pillar. These include the Emission Score, indicative of a company's dedication and efficacy in curtailing environmental emissions across its production and operational activities; the Environmental Innovation Score, reflecting a firm's prowess in mitigating environmental costs and generating new market prospects via the development of innovative environmental technologies or processes; and the Resource Use Score, pertaining to a firm's adeptness and capability in reducing the consumption of materials, energy, or water, thereby advancing eco-efficient solutions through improvements in supply chain management. The score indicates the percentage rank of a respective company compared with its peer group within the same industry on a scale from 0 to 100 per cent. Recognizing the annual update frequency of ESG ratings, our methodology includes a calendarization process to approximate these ratings at the precise timing of each acquisition announcement, ensuring a temporal alignment with our analysis period. A detailed overview of the environmental performance categories is shown in Table 2.2 of the appendix.

2.3.3. Control Variables

To assess acquisition premia, our regression analysis incorporates a set of control variables that account for the structural nuances of the deals and intrinsic attributes of the target companies. These variables are critical in isolating the effects of specific deal characteristics and target company metrics on the premium paid in acquisitions. At first, we assess the relative size of the target to the acquirer based on sales. Next to this, we consider Operating Margins as insight into the acquirer's and target's efficiency at the time of acquisition (Healy et al.,

1992). Capital expenditures as a percentage of sales are included to assess investment in growth and its correlation with synergy potential and premium (Shleifer & Vishny, 2003), while Leverage, defined as debt as a percentage of total capital, indicates the financial risk profile of the different companies (Officer, 2007). Finally, we consider return on equity (ROE) as an indication of profitability and efficiency in using equity capital (Lewellen, 1971). Deal control variables include a dummy for cash transactions, recognizing that deals involving cash components may influence the premium due to the liquidity benefits to target shareholders (Harford, 1999). Cross-border (Moeller & Schlingemann, 2005) and cross-industry (Ahern & Harford, 2014) dummy variables capture the complexities and potential synergies or challenges associated with acquisitions that span geographical and sectoral boundaries, respectively. Refer to Table 2.2 of the appendix for a further description of the relevant variables.

2.3.4. Analyses

To determine the premia, we examine the price paid during an acquisition relative to the relevant transactions conducted for companies with comparable profiles. Based on the LSEG acquisition database, we select transactions of companies from the same industry and take the weighted average purchase multiples paid for comparable companies for the year of the acquisition announcement and the preceding two years. To determine comparable transaction price levels, we have calculated the average transaction multiples within each of the different 3-digit SIC categories for the acquisition year and the two years preceding the acquisition, based on a total of 22,228 Revenue and EBITDA-based acquisition price multiples provided by LSEG. This approach is in line with approaches described by Schreiner (2009) and gives an indication of the typical acquisition multiples paid for companies from the same industries within the time range at and shortly prior to the acquisition event.

To investigate the hypothesis that the relationship between environmental performance and acquisition premia exhibits an inverted U-shaped trajectory, this study employs regression models with both linear and quadratic predictor variables for environmental performance. This approach aligns with the methodologies advocated by Darlington and Hayes (2017). To compute the quadratic terms, we calculate an average score for each environmental performance category and subsequently measure the deviation of individual environmental scores from this computed average. To obtain the quadratic predictor variable, we square the calculated deviations from the average score. The model thus integrates both the centered variable, representing the linear component, and the squared centered variable, denoting the quadratic component, as independent variables within the regression framework. The subsequent phase of the analysis is dedicated to scrutinizing whether including the squared predictor enhances the fit of the regression model more aptly than the linear predictor alone. This entails a detailed examination of the change in the coefficient of determination (R Squared) attributable to the quadratic predictor's integration into the model, alongside assessing the statistical significance of this alteration. A significant improvement in model fit, evidenced by an increase in R Squared, would substantiate the hypothesis of a non-linear relationship between environmental performance and acquisition premiums, corroborating the theoretical premise of an inverted U-shaped curve.

To further investigate the hypothesis of the acquiror's environmental performance as a moderating variable in the context of targets with a low to moderate and targets with a moderate to high environmental performance level, we bifurcated the data into two subsets, each comprising 50 acquisition events. By segmenting the dataset based on the environmental performance of the targets, the analysis aims to discern whether the moderating effect of environmental performance disparity exhibits distinct characteristics at different levels of the environmental performance spectrum. On this basis, we conducted moderation analyses

separately for each subset to scrutinize potential variations between the two groups, employing the Hayes PROCESS macro for SPSS for each relevant environmental performance category.

2.4. Results

Figure 2.2 shows the summary statistics of transactions in the sample for means, standard deviations, and correlations. Within the independent variables, the Target Environmental Pillar Score serves as an aggregate measure of environmental performance, with a mean of 37.61 and a considerable standard deviation of 33.31, revealing wide-ranging environmental practices among target firms. The Target Emissions Score closely correlates with the Pillar Score (correlation of 0.931), indicating that emissions control is a dominant aspect of the aggregated environmental evaluation. The Target Environmental Innovation Score presents a mean of 41.70 and a standard deviation of 30.42, with a correlation of 0.675 with the Pillar Score. The Target Resource Use Score exhibits a mean of 34.81 with a standard deviation of 26.74, strongly correlated with the Pillar Score (0.881). Its significant correlation with the Emissions Score (0.845) highlights a strategic emphasis on resource efficiency as a driver for emissions reduction, aligning with broader sustainability goals. These correlations underline the multifaceted nature of environmental performance, encompassing emissions management, innovative practices, and resource optimization as key components of corporate environmental stewardship. Shifting the focus to the moderating variables, which encapsulate the acquirer companies' ESG metrics, we observe a mean of 51.25 for the Acquiror Environmental Pillar Score with a standard deviation of 28.58. This, coupled with a correlation coefficient of 0.448 with the target companies' Environmental Pillar Score, suggests not only a higher mean environmental performance among acquisition companies but also points to a moderate positive relationship between the environmental standings of target and acquisition companies. The Acquiror Emissions Score and Acquiror Resource Use Score exhibit a robust

interrelationship (correlation of 0.914 and 0.844, respectively) with the Acquiror Environmental Pillar Score, reinforcing the inference that emissions control and resource utilization are pivotal dimensions of an acquirors ESG profile.

In terms of control variables, the ratio of Target Revenues to Acquiror Revenues averages 2.55 per cent with a wide standard deviation of 10.71 per cent. The Operating Margin for both targets and acquirers, with means of 14.95 and 14.49, respectively, demonstrates minimal correlation with ESG metrics. Capital expenditures as a percentage of sales reveal investment tendencies relative to sales volume, with targets averaging 8.16 and acquirers at 7.53. The positive correlation of this variable with the Target Environmental Innovation Score and Leverage indicates that increased investments could potentially be aligned with environmental innovation and higher leverage levels. Financial Leverage, with targets averaging 39.45 and acquirers 30.38, shows a notable correlation with Resource Use Score for targets, hinting that indebted firms may prioritize resource efficiency. Next to this, Return on Equity (ROE), while not correlating strongly with ESG scores, does have significant associations with other financial metrics such as Operating Margin and Leverage. Lastly, Cash and transaction characteristics such as Cross-Border and Cross-Industry considerations demonstrate the strategic and liquidity contexts of the firms. Cash holdings, with a mean of 0.70 for the sample, show a negative correlation with the Target Emissions Score, indicating that firms with lower emissions might also maintain lower cash reserves, possibly reflecting a strategy of reinvestment over liquidity retention. Cross-Border transactions indicate a proclivity of firms with stronger ESG scores to engage beyond domestic markets, while Cross-Industry transactions are negatively correlated with many of the ESG scores, highlighting the complex strategic overlays that influence how firms with different ESG profiles approach diversification and market expansion. The following sections will further describe the results of both the regression and the mediation analyses performed.

Figure 2.2: Means, Standard Deviations, and Correlations among all Variables

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Independent Variables:																						
Target Environmental Pillar Score	37.61	33.31	1																			
Target Emissions Score	21.83	27.05	.931**	1																		
Target Env. Innovation Score	41.70	30.42	.675**	.465**	1																	
Target Resource Use Score	34.81	26.74	.881**	.845**	.400**	1																
Moderating Variables:																						
Acquiror Environmental Pillar Score	51.25	28.58	.448**	.423**	.320**	.393**	1															
Acquiror Emissions Score	54.70	33.29	.377**	.376**	.249*	.325**	.914**	1														
Acquiror Env. Innovation Score	37.83	33.42	.301**	.279**	.301**	.265**	.749**	.545**	1													
Acquiror Resource Use Score	56.59	32.95	.402**	.379**	.238*	.403**	.880**	.844**	.451**	1												
Control Variables:																						
Target Revenues to Acquiror Revenues	2.55	10.71	0.147	0.144	-0.050	0.161	-0.013	0.029	-0.091	-0.043	1											
Target Operating Margin	14.95	12.64	-0.098	-0.162	-0.068	-0.156	-0.173	-0.149	-0.105	-.199*	-0.109	1										
Target Capex as % of Sales	8.16	12.69	0.119	0.158	-0.064	0.145	0.178	0.195	.217*	0.081	-0.053	0.149	1									
Target Leverage	39.45	22.74	.200*	.198*	0.069	.243*	0.085	0.091	0.009	0.141	0.094	-0.003	.249*	1								
Target ROE	10.05	17.60	0.008	-0.004	-0.006	-0.061	-0.119	-0.149	-0.039	-0.129	0.021	.473**	-0.038	-0.131	1							
Acquiror Operating Margin	14.49	9.86	-0.169	-0.184	-0.117	-0.133	-0.109	-0.142	-0.155	-0.037	-0.033	.317**	-0.025	-0.034	0.155	1						
Acquiror Capex as % of Sales	7.53	7.61	0.070	0.078	0.124	-0.004	0.039	0.084	0.037	-0.024	-0.069	0.162	.516**	.266**	-0.009	0.186	1					
Acquiror Leverage	30.38	18.42	0.139	0.128	-0.023	0.193	-0.029	-0.074	-0.116	0.000	0.163	0.071	0.157	.429**	0.052	.312**	0.140	1				
Acquiror ROE	10.60	58.60	-0.026	-0.041	0.062	-0.085	0.195	0.155	0.107	.198*	-0.026	-0.029	-0.129	-0.178	0.002	0.134	-0.144	-.304**	1			
Cash	0.70	0.46	-0.126	-.215*	-0.020	-0.099	0.010	0.013	-0.030	0.052	-0.065	0.055	-0.096	-0.052	0.036	-0.004	-0.169	-0.014	-0.038	1		
Cross-Border	0.35	0.48	0.196	0.171	0.125	0.170	.336**	.314**	.312**	.213*	0.158	-0.001	0.170	-0.007	-0.081	-0.101	0.014	-.216*	0.071	0.160	1	
Cross-Industry	0.47	0.50	-0.188	-0.146	-0.161	-0.143	-0.075	-0.069	-0.028	-0.057	-0.083	-0.177	0.006	-0.140	-0.081	-0.180	-0.144	-0.167	0.072	0.048	-0.061	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

2.4.1. The Value Impact of Target Environmental Performance

To examine the presence of a curvilinear relationship, we employ two models: a linear regression model and a polynomial regression model that incorporates the squared score as an additional predictor. This approach allows us to determine whether the introduction of curvilinearity results in a better fit and assesses its contribution to significantly improving the R Square value. The results of this analysis are shown in Figure 2.3 below as well as in Tables 2.3, 2.4, 2.5, and 2.6 of the appendix.

For the relationship between the Target Environment Pillar Score and the transaction multiple difference, the linear term does not significantly impact the transaction multiple difference (coefficient = -0.037, p-value = 0.301). However, introducing the squared term in the second regression of Model 1 reveals a negative and significant relationship (coefficient = -0.003, p-value = 0.024), suggesting a non-linear interaction. The negative coefficient posits a possible shape where initial improvements in the environmental pillar score might be added to the target premium. However, beyond a certain threshold, additional improvements could yield lower premia. The R Square value improves from 0.222 to 0.268 with the squared term, indicating a significant increase in explanatory power (R Square Change = 0.046) by the introduction of the squared term. Next to this, the impact of the Target Emissions Score on the transaction multiple difference does, in its linear form, likewise not show significance (coefficient = -0.041, p-value = 0.159). Incorporating the squared term improves model fit (R Square Change = 0.018), although the squared term itself does not reach conventional levels of significance (coefficient = -0.001, p-value = 0.168), which makes the fit through the square term less pronounced than in the environmental pillar. For Model 3, which focuses on Environmental Innovation, the linear term again shows no significant relationship with transaction multiples (coefficient = -0.033, p-value = 0.352). Introducing the squared term improves the model (R Square Change = 0.025), indicating a non-linear effect (coefficient = -

0.002, p-value = 0.099), although this effect is on the cusp of significance. Also, here, the negative coefficient points to a potential valuation inflexion point where initial increases in environmental innovation may have a positive valuation impact, but beyond a certain level, the positive impact on transaction multiples may taper off. Finally, Model 4 assesses the Resource Use Score's impact on transaction multiple differences, where the linear (coefficient = -0.016, p-value = 0.609) is not significantly straightforwardly related to transaction multiples. However, the introduction of the squared term does yield a coefficient of -0.002 and a p-value of 0.127, while it leads to an R Square Change of 0.022, suggesting a subtle non-linear relationship.

Regarding control variables, Acquiror Leverage exhibits a consistently positive effect across the models, indicating that firms with higher leverage ratios might be willing to pay higher premiums. This effect is statistically significant, with p-values diminishing to 0.019 in the emissions model when squared terms are introduced, underscoring the robustness of this relationship. Cash as a payment method displays a stable positive association across all model iterations (with p-values from 0.085 to 0.041 in the linear models and remaining significant when squared terms are accounted for). The Cross-Border variable, while not reaching conventional levels of statistical significance, consistently shows positive coefficients (ranging from 3.090 to 3.811 across models with squared terms), suggesting a trend where international transactions might be perceived as having higher potential value, perhaps due to the diversification benefits or strategic expansions they represent. Furthermore, the Cross-Industry variable, though not significant, retains negative coefficients across models (ranging from -0.814 to -1.425 with squared terms).

The introduction of squared terms reveals non-linear relationships between environmental metrics and transaction multiples, particularly an inverted U-shape pattern, where the positive effect of improving environmental performance may reverse at higher

levels. This pattern is most pronounced in the Environment Pillar model, which exhibits the most significant increase in explanatory power when the squared term is included (R Square Change = 0.046). This supports the notion of diminishing or negative returns to environmental performance improvements in terms of transaction multiple differences. These results confirm Hypothesis 1, positing that the relationship between the environmental performance of acquisition targets and the acquisition premia paid is curvilinear, taking the form of an inverted U-shape.

Figure 2.3: Regression Analysis

Regression Analysis of the Linear and Polynomial Relationship to EV/EBITDA - Transaction Multiple Difference

	Model 1 (Env. Pillar)		Model 2 (Emissions)		Model 3 (Env. Innov.)		Model 4 (Resource Use)	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
(Constant)	1.940	0.577	2.526	0.469	1.329	0.689	1.244	0.722
Linear Independent Variables:								
Target Environment Pillar Score_c	-0.037	0.301						
Target Emissions Score_c			-0.041	0.159				
Target Innovation Score_c					-0.033	0.352		
Target Resource Use Score_c							-0.016	0.609
Control Variables:								
Target Revenues to Acquiror Revenues	-0.143	0.097	-0.143	0.095	-0.155	0.074	-0.143	0.097
Target Operating Margin	0.106	0.211	0.093	0.274	0.111	0.191	0.108	0.209
Target Capex as % of Sales	-0.052	0.544	-0.045	0.594	-0.069	0.429	-0.050	0.564
Target Leverage	-0.070	0.134	-0.070	0.133	-0.071	0.129	-0.071	0.130
Target ROE	0.024	0.678	0.028	0.621	0.021	0.715	0.019	0.736
Acquiror Operating Margin	-0.058	0.597	-0.063	0.561	-0.054	0.623	-0.040	0.715
Acquiror Capex as % of Sales	-0.106	0.462	-0.107	0.456	-0.084	0.565	-0.116	0.427
Acquiror Leverage	0.138	0.032	0.140	0.028	0.132	0.038	0.131	0.041
Acquiror ROE	0.015	0.363	0.015	0.367	0.015	0.345	0.013	0.412
Cash	3.804	0.056	3.456	0.085	4.033	0.041	3.980	0.046
Cross-Border	3.336	0.110	3.506	0.092	3.123	0.129	3.090	0.140
Cross-Industry	-1.236	0.508	-1.291	0.484	-1.169	0.530	-0.995	0.592
Number of Transactions	100		100		100		100	
F-Value	1.841		1.932		1.821		1.761	
R-Square	0.222		0.230		0.220		0.214	
Adjusted R-Square	0.101		0.111		0.099		0.093	
(Constant)	3.539	0.308	3.795	0.291	2.109	0.525	2.700	0.453
Linear Independent Variables:								
Target Environment Pillar Score_c	0.000	0.998						
Target Emissions Score_c			-0.024	0.441				
Target Innovation Score_c					0.035	0.511		
Target Resource Use Score_c							-0.003	0.915
Control Variables:								
Target Revenues to Acquiror Revenues	-0.129	0.125	-0.136	0.109	-0.158	0.066	-0.129	0.135
Target Operating Margin	0.107	0.195	0.112	0.193	0.123	0.143	0.111	0.191
Target Capex as % of Sales	-0.073	0.381	-0.071	0.413	-0.038	0.663	-0.048	0.571
Target Leverage	-0.087	0.061	-0.076	0.102	-0.089	0.063	-0.084	0.078
Target ROE	0.031	0.584	0.028	0.616	0.017	0.767	0.028	0.629
Acquiror Operating Margin	-0.058	0.587	-0.085	0.436	-0.036	0.743	-0.037	0.727
Acquiror Capex as % of Sales	-0.112	0.427	-0.102	0.476	-0.147	0.329	-0.134	0.357
Acquiror Leverage	0.142	0.023	0.149	0.019	0.129	0.040	0.127	0.045
Acquiror ROE	0.017	0.288	0.018	0.258	0.011	0.485	0.013	0.415
Cash	3.257	0.095	3.222	0.108	3.652	0.063	3.973	0.045
Cross-Border	3.811	0.064	3.641	0.079	3.379	0.099	3.235	0.120
Cross-Industry	-1.166	0.522	-1.425	0.438	-1.050	0.569	-0.814	0.659
Squared Independent Variables:								
Target Environment Pillar Score_c_sq	-0.003	0.024						
Target Emissions Score_c_sq			-0.001	0.168				
Target Innovation Score_c_sq					-0.002	0.099		
Target Resource Use Score_c_sq							-0.002	0.127
Number of Transactions	100		100		100		100	
F-Value	2.172		1.952		1.925		1.832	
R-Square	0.268		0.248		0.245		0.236	
Adjusted R-Square	0.145		0.121		0.118		0.107	
R Square Change	0.046		0.018		0.025		0.022	
F Change	5.261		1.936		2.783		2.378	
Sig. F Change	0.024		0.168		0.099		0.127	

Dependent Variable: EV/EBITDA - Transaction Multiple Difference

2.4.2. The Moderating Impact of Acquirer Environmental Performance

In the context of assessing the impact of the environmental performance of acquiring companies on the valuation premiums or discounts offered for targets with varying environmental performance, we apply both a regression as well as a mediation analysis. Due to the posited inverted valuation U-shape subject to the target's environmental performance, we perform these analyses separately for a group of target companies with a low to moderate environmental performance and for a group of companies with a moderate to high environmental performance. The analyses are based on PROCESS for SPSS, developed by Andrew F. Hayes, with a sample size of 100 observations for the entire sample group and 50 observations each for the two subgroups. The results of these analyses are shown in Figure 2.4 below as well as in Tables 2.7, 2.8, 2.9, and 2.10 of the appendix for the lower half group and Tables 2.11, 2.12, 2.13, and 2.14 of the appendix for the upper half group.

In the subsequent examination of how differences in environmental performance between acquirers and targets influence acquisition valuations, our analysis further employed a mediation model for two cohorts, distinguished by the environmental performance scores of the targets. These cohorts were classified based on the lower and upper halves of environmental scores, thereby enabling an analysis of the impact of environmental performance on acquisition premia along the posited inverted U-shape.

In the group of targets with low environmental performance, our analysis revealed a statistically significant interaction between the Acquiror Emission Score and the Target Emission Score for higher environmental performance levels of the acquiror. Additionally, a marginally non-significant trend suggested an interaction between the Acquiror Resource Use Score and the Target Resource Use Score, especially at higher levels of acquiror performance. These findings indicate that the acquirer's environmental and resource use performances can influence the inverse U-shaped valuation of the target. Focusing on the overall Environmental

Pillar Score, the model summary indicates an R-squared value of 0.183, suggesting that the model explains approximately 18.3% of the variance in the dependent variable. The model also exhibits statistical significance with an F-statistic of 3.431 (p=0.025), indicating significance at the 5% level. However, the interaction term (Int_1) was found to be insignificant for this group (p=0.158). Nevertheless, the interaction between Acquiror and Target Emission Scores presents a notable finding: the statistically significant interaction term (Int_1, p=0.020). The introduction of this interaction term results in an R-squared change of 0.088, indicating a moderate effect size. The conditional effects of the Acquiror Emission Score on the focal predictor reveal a significant interaction effect at higher scores (83.096 percentile), with an effect size of 0.010, a standard error of 0.003, and a p-value of 0.005, indicating a statistically significant positive impact on the dependent variable. At lower and median score levels, the effects were not statistically significant. The model explains 30.3% of the variance (R-squared = 0.303) with significant model fit (F=6.672, p=0.001). Conditional effects analysis shows the interaction's impact varies at different levels of the Acquiror Emission Score, becoming statistically significant at higher percentiles. The analysis concerning the interaction between Acquiror and Target Environmental Innovation Scores indicated no significant interaction effects (p=0.964 for the interaction term). The model explains 10.1% of the variance in the dependent variable, with an F-value of 1.725 (p=0.175). Finally, the interaction between Acquiror and Target Resource Use Scores showed a marginally non-significant trend towards interaction (p=0.096 for the interaction term), with an R-squared change of 0.053. The analysis of conditional effects for the Acquiror Resource Use Score suggests a positive effect at the highest score level (81.847 percentile) with an effect size of 0.004, which did, however, not achieve statistical significance (p=0.295). Next to the positive effect measured for acquirers with higher resource use scores, the effects for acquirers with median level and lower resource use scores were not significant. The model explains 15.7% of the variance (R-squared = 0.157)

and is marginally significant (F=2.862, p=0.047). Conditional effects suggest the interaction effect's significance varies but does not reach conventional levels of statistical significance across different percentiles of the Acquiror Resource Use Score.

Contrary to the first group that focused on targets with low to moderate environmental performance, the analysis for the group of targets with high environmental performance shows no interaction effects between the analyzed environmental metrics of acquiring companies and their targets. In the case of the Acquiror and Target Environmental Score interaction, the analysis did not reveal statistically significant effects. The model's R-squared value is 0.170, indicating that 17% of the variance in the dependent variable is explained by the model, which is statistically significant at the 5% level (F=3.134, p=0.034). However, the interaction term (Int_1) itself exhibited no statistical significance (p=0.537). The interaction analysis between Acquiror and Target Emission Scores showed no statistically significant interaction effect (p=0.459 for the interaction term), with a minimal R-squared change upon introducing the interaction term. The model explains only 7.5% of the variance (R-squared = 0.075), with the model fit not reaching statistical significance (F=1.246, p=0.304). Similarly, the interaction between Acquiror and Target Environmental Innovation Scores yielded no significant interaction effects (p=0.723 for the interaction term). The model accounts for 10.3% of the variance (R-squared = 0.103), with an F-value of 1.751 (p=0.170). These results indicate that the environmental innovation scores do not significantly influence the outcomes for high environmental performance target groups. Finally, regarding the interaction between Acquiror and Target Resource Use Scores, the analysis also did not demonstrate significant interaction effects (p=0.420 for the interaction term), with an R-squared change of 0.013. The model explains only 7.9% of the variance (R-squared = 0.079) and is not statistically significant (F=1.323, p=0.278). This suggests that the resource use scores do not play a significant moderating role within the high environmental performance target groups.

The results have, hence, demonstrated a moderation of acquirer performance for targets exhibiting low to moderate environmental performance. Conversely, the impact diminishes for targets with moderate to high environmental performance. Based on these findings, we can confirm Hypothesis 2.

Figure 2.4: Moderation Analyses for Acquirer Environmental Performance

Low Environmental Performance Target Group:
Acquiror Environmental Score Interaction with Target Environmental Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	5.550	4.216	1.316	0.195	-2.937	14.037
Target Env. Sc. Squared	-0.006	0.005	-1.310	0.197	-0.016	0.004
Acqu. Env. Sc.	0.026	0.085	0.307	0.761	-0.146	0.198
Int_1	0.000	0.000	1.434	0.158	0.000	0.000

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.037	2.057	1.000	46.000	0.158

Model Summary

Metric	Value
R	0.428
R-sq	0.183
F	3.431
p	0.025

Level of confidence for all confidence intervals in output: 95.0000%

Low Environmental Performance Target Group:
Acquiror Emission Score Interaction with Target Emission Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	4.088	4.136	0.988	0.328	-4.238	12.413
Target Em. Sc. Squared	-0.003	0.004	-0.811	0.422	-0.010	0.004
Acqu. Em. Sc.	-0.025	0.073	-0.344	0.732	-0.172	0.122
Int_1	0.000	0.000	2.406	0.020	0.000	0.000

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.088	5.791	1.000	46.000	0.020

Conditional Effects of the Focal Predictor

Acqu. Em. Sc.	Effect	SE	t	p	LLCI	ULCI
0.000	-0.003	0.004	-0.811	0.422	-0.010	0.004
41.225	0.004	0.002	1.676	0.101	-0.001	0.008
83.096	0.010	0.003	2.979	0.005	0.003	0.017

Model Summary

Metric	Value
R	0.551
R-sq	0.303
F	6.672
p	0.001

Level of confidence for all confidence intervals in output: 95.0000%

W values in conditional tables are the 16th, 50th, and 84th percentiles.

Low Environmental Performance Target Group:
Acquiror Env. Innov. Score Interaction with Target Env. Innov. Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	7.527	4.607	1.634	0.109	-1.746	16.799
Target Env. Inn. Sc. Squared	-0.010	0.011	-0.906	0.370	-0.032	0.012
Acqu. Env. Inn. Sc.	0.076	0.100	0.764	0.449	-0.125	0.277
Int_1	0.000	0.000	-0.046	0.964	-0.001	0.001

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.000	0.002	1.000	46.000	0.964

Model Summary

Metric	Value
R	0.318
R-sq	0.101
F	1.725
p	0.175

Level of confidence for all confidence intervals in output: 95.0000%

Low Environmental Performance Target Group:
Acquiror Resource Use Score Interaction with Target Resource Use Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	6.977	3.768	1.851	0.071	-0.609	14.562
Target Res. Use Sc. Squared	-0.005	0.003	-1.541	0.130	-0.011	0.001
Acqu. Res. Use Sc.	-0.006	0.070	-0.087	0.931	-0.148	0.135
Int_1	0.000	0.000	1.698	0.096	0.000	0.000

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.053	2.881	1.000	46.000	0.096

Conditional Effects of the Focal Predictor

Acqu. Res. Use Sc.	Effect	SE	t	p	LLCI	ULCI
0.000	-0.005	0.003	-1.541	0.130	-0.011	0.001
48.058	0.000	0.002	0.055	0.957	-0.004	0.005
81.847	0.004	0.003	1.059	0.295	-0.003	0.010

Model Summary

Metric	Value
R	0.397
R-sq	0.157
F	2.862
p	0.047

Level of confidence for all confidence intervals in output: 95.0000%

W values in conditional tables are the 16th, 50th, and 84th percentiles.

High Environmental Performance Target Group:
Acquiror Environmental Score Interaction with Target Environmental Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	5.167	4.206	1.228	0.226	-3.300	13.634
TEn_sq	-0.008	0.005	-1.500	0.141	-0.018	0.003
AcEnSc	0.065	0.068	0.953	0.346	-0.072	0.201
Int_1	0.000	0.000	0.623	0.537	0.000	0.000

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.007	0.388	1.000	46.000	0.537

Model Summary

Metric	Value
R	0.412
R-sq	0.170
F	3.134
p	0.034

Level of confidence for all confidence intervals in output: 95.0000%

High Environmental Performance Target Group:
Acquiror Emission Score Interaction with Target Emission Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	2.341	4.603	0.509	0.613	-6.924	11.606
TEm_sq	0.000	0.004	0.060	0.952	-0.008	0.008
AcEmSc	0.094	0.074	1.264	0.213	-0.056	0.243
Int_1	0.000	0.000	-0.748	0.459	0.000	0.000

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.011	0.559	1.000	46.000	0.459

Model Summary

Metric	Value
R	0.274
R-sq	0.075
F	1.246
p	0.304

Level of confidence for all confidence intervals in output: 95.0000%

High Environmental Performance Target Group:
Acquiror Env. Innov. Score Interaction with Target Env. Innov. Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	3.955	2.591	1.527	0.134	-1.260	9.170
TIn_sq	-0.001	0.002	-0.559	0.579	-0.006	0.004
AcInSc	0.069	0.049	1.416	0.164	-0.029	0.167
Int_1	0.000	0.000	-0.356	0.723	0.000	0.000

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.003	0.127	1.000	46.000	0.723

Model Summary

Metric	Value
R	0.320
R-sq	0.103
F	1.751
p	0.170

Level of confidence for all confidence intervals in output: 95.0000%

High Environmental Performance Target Group:
Acquiror Resource Use Score Interaction with Target Resource Use Score

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	7.404	4.942	1.498	0.141	-2.545	17.352
TRU_sq	-0.008	0.007	-1.251	0.217	-0.021	0.005
AcRUSc	0.008	0.073	0.112	0.911	-0.139	0.155
Int_1	0.000	0.000	0.813	0.420	0.000	0.000

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.013	0.662	1.000	46.000	0.420

Model Summary

Metric	Value
R	0.282
R-sq	0.079
F	1.323
p	0.278

Level of confidence for all confidence intervals in output: 95.0000%

Based on these findings, Figure 2.4 below illustrates the curvilinear relationship, showing how a target's low and high environmental performance levels can have a value-reducing impact while a balanced performance optimizes acquisition premia. The relevance of the acquirer's own environmental performance declines with a higher environmental performance of the target.

Figure 2.4: Illustration of Value Relationships for Target and Acquirer
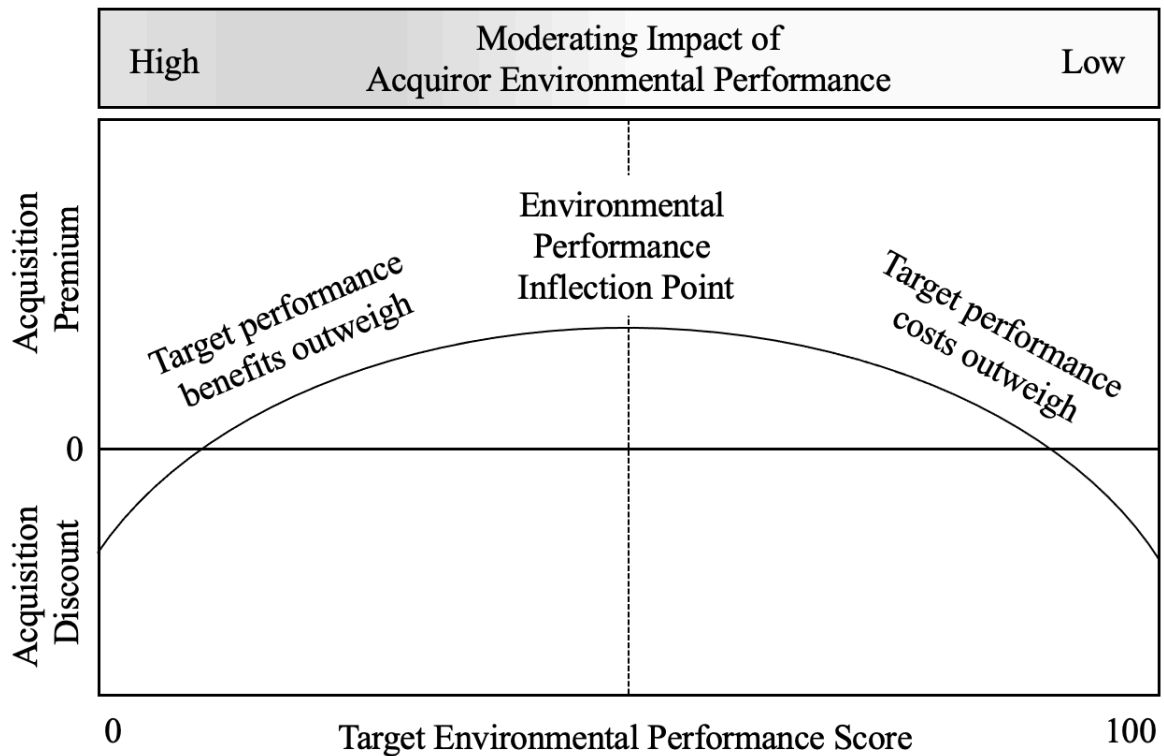
2.5. Discussion

The results reveal several insights regarding the impact of alternative data in M&A transactions, specifically focusing on environmental performance and its effects on acquisition premia. Our study delineates an inverted U-shaped relationship between environmental performance scores and acquisition premia, indicating that value is both enhanced and diminished at certain environmental performance thresholds. Next to affirming the existence of an optimal performance level, the study advances the existing body of knowledge by elucidating the positive and negative value drivers associated with environmental engagement in the context of optimal resource usage in relation to the resource-based view of the firm, stakeholder value and shareholder costs considerations. Moreover, our results contribute to a deeper comprehension of the different perceptions and valuation of sustainability performance amongst acquiring firms by introducing the acquirer's environmental performance as a

moderating variable for targets with a low to moderate environmental performance along the inverted U-shape. It shows that acquirers have different gauges for environmental performance data depending on their own performance and hence derive different value assessments according to their own environmental performance profile.

Building on these insights, this research further develops the RBV by introducing a dynamic resource valuation view, where the strategic value of environmental performance is context-dependent, varying according to the acquirer's and target's existing resource profiles. The two-group analysis with different regression results for high and low environmental performance targets further suggests that an optimal level of environmental performance exists for the target beyond which the acquirer's own environmental performance becomes less relevant in determining premia or discounts. This incorporates the idea of dynamic resource valuation, where not only the presence of valuable resources but also their degree of alignment and potential for synergy realization influence competitive advantage (Sirmon et al., 2007) and, consequently, valuations.

2.5.1. Balancing the Value Profile

Based on the findings relating to Hypothesis 1 and the confirmed inverted U-shape relationship between a target's environmental performance and acquisition premia, an essential aspect of our findings pertains to the costs faced by companies with environmental underperformance and overperformance, as well as the benefits that a balanced environmental performance confers on resources and capabilities. Such a polynomial relationship has been measured as a significant result for the Environmental Pillar Score and, on the cusp of significance, for Environmental Innovation as well as the Resource Use Score. Hence, the findings provide overarching confirmation for previous stand-alone studies that detected different value-reducing and value-adding implications for various environmental performance

levels. They support the propositions by Barnett & Salomon (2006), Maqbool & Bakr (2019), Wu & Li (2024), and Zhang & Guo (2018), which posited a potential polynomial relationship between sustainability performance and financial metrics. As this study focuses particularly on environmental metrics and is based on transaction multiples, it provides an empirical and quantifiable overarching view of different studies that have previously illuminated stand-alone value and performance impacts of environmental characteristics on companies. The argumentation based on the Resource-Based View of the Firm furthermore provides a foundation to reconcile the previously outlined dichotomy between the shareholder cost view and the stakeholder value perspective.

As previously outlined, for underperforming firms, this is likely driven by heightened regulatory costs and risks (Abbot, 2005), increased capital costs due to higher risk premiums by the market (Jung et al., 2018), and a propensity for litigation risks (Kassinis & Vafeas, 2002). These companies may find it challenging to attract premium valuations given the incorporation of these risks into valuation assessments, which could have a depreciating effect on both tangible and intangible resources, such as brand and reputation damage (Khojastehpour & Johns, 2014; Zou et al., 2015;), and potential stakeholder distrust (Saengsupavanich et al., 2012), as well as organizational capabilities. Conversely, companies with overperformance in environmental aspects may incur increased operational costs (Ambec & Lanoie, 2008), experience rigidity along the value chain (Carter & Rogers, 2008), and face substantial abatement costs (Xu & Kim, 2022). These factors may contribute to growth and innovation constraints (Delmas & Montes-Sancho, 2011), diverted management focus (Ocasio, 1997), and resource misallocation (Tombe & Winter, 2015), ultimately imposing opportunity costs of an excessive environmental focus. For targets with balanced environmental performance, the implications may include a reduction in risks and costs, as well as a stronger brand and reputation, fostering stakeholder trust and loyalty (Godfrey et al., 2009; Grimmer & Bingham,

2013; Marchante-Lara & Benavides-Chicón, 2022; Quintana-García). Additionally, such balance can enhance knowledge transfer (Hamdoun et al., 2018), improve operational efficiency (Hart & Ahuja, 1996), and boost innovation, particularly in the development of green products (Dangelico & Pujari, 2010), which are all pivotal to sustaining competitive advantage and driving a firm's value.

Building on these empirical findings, which support the notion that a balance between environmental underperformance and overperformance optimizes the resource base for sustainable competitive advantage, we propose that value-maximizing environmental performance is characterized by a range of factors that either enhance or reduce value. This spans financial and non-financial resources, as well as organizational capabilities, aligning with the Resource-Based View (RBV). In conjunction with the findings from Hypothesis 2, this approach can subsequently be expanded into a matrix perspective that encompasses both the target's and the acquirer's performance.

2.5.2. Acquirer Environmental Performance

The study further demonstrates that the environmental performance of the acquirer serves as a moderating variable in determining valuation premia for targets with low to moderate environmental performance. In testing Hypothesis 2, a significant moderating effect was observed for targets with low to moderate environmental performance. This effect pertains to the interaction between the Acquirer Emissions Score and the Target Emissions Score, particularly when the acquirer demonstrates higher levels of environmental performance. In addition, a marginally non-significant trend suggested an interaction between the Acquirer Resource Use Score and the Target Resource Use Score. The environmental performance categories to which these results relate are partially aligned with the polynomial relationship

identified as significant for the Environmental Pillar Score and nearing significance for both Environmental Innovation and the Resource Use Score.

As demonstrated by Sirmon et al. (2007), the strategic value of an acquisition target is not exclusively demonstrated through the sole existence of valuable resources but also through an acquirer's potential to enhance such and use them for their competitive advantage. As pointed out by Denrell et al. (2003), acquirers often face difficulties in fully assessing the value and value creation potential of such resources. Extending the findings of Sirmon et al. (2007) and the requirement to enhance resources as part of an acquisition process, we posit that acquirers have a specific lens when viewing the risks and benefits of environmental performance and pricing these into their valuations. Based on the RBV and on the back of the mediation results obtained, we posit acquirers with a stronger environmental performance to generally place more substantial weight on the positive attributes of environmental performance of targets such as enhanced brand and reputation (Flammer, 2013; Hart & Ahuja, 1996) and stakeholder trust and loyalty (Servaes & Tamayo, 2013) or see potential to further optimize the value of targets along the inverted U-shape. Next to the synergistic enhancement of resources and capabilities, acquirers with a stronger environmental performance edge over their targets may also see a stronger value optimization potential for risk areas related to a target's low environmental performance, like a possible stakeholder distrust (Walker & Wan, 2012), tangible areas like regulatory costs & risks (Kassinis & Vafeas, 2006) as well as organizational challenges such as stakeholder relationship (Sen & Bhattacharya, 2001; Luo & Bhattacharya, 2006). Our analysis furthermore underscores the significance of aligning the acquirer's environmental performance strategy with the target's potential for environmental performance improvements. This alignment not only enhances the value proposition of the acquisition but also integrates sustainability into the core strategic objectives of the merger or acquisition process. Therefore, alongside classical synergy opportunities such as R&D

enhancements (Laamanen, 2007), there may exist unique value creation prospects through an alignment of the environmental performance of the acquired firm, indicating that environmental performance may function as an additional driver for strategic decision-making of corporate acquisitions.

On the flip side, such a mediating relationship proves to be less pronounced for acquirers buying targets with a moderate to high environmental performance. In these instances, the marginal value of further enhancing an already strong environmental profile is diminished or could potentially be negative. Further environmental performance improvements may consequently move the target away from the value optimum, hence weakening the value-adding factors such as risk and cost reductions (Godfrey et al., 2009) and operational efficiencies (Hart & Ahuja, 1996) of the optimal performance area and strengthening the value-reducing factors as a result of a strong environmental performance such as increased production costs (Ambec et al., 2013), growth & innovation constraints (Ambec et al., 2013; Delmas & Montes-Sancho, 2011) and resource misallocation (Hahn et al., 2015; Margolis & Walsh, 2003). This constraint emphasizes the importance of resource alignment and complementarity. The strategic significance of acquisitions is not only based on possessing valuable resources and capabilities but also on the potential to enhance them synergistically (Sirmon et al., 2007). This attenuation suggests that, where additional environmental performance improvements are less impactful on overall performance and stakeholder perception, a weaker mediating function by the acquirer's own environmental performance can be observed.

2.5.3. Dynamic Resource Valuation View

Based on the interdependency between the environmental performance of the acquirer and target in the light of the valuation of resources and capabilities, we further develop the RBV towards a dynamic resource valuation view, stating that the strategic value of resources

and capabilities is context-dependent, with the awareness for benefits and risks varying according to the existing resource profiles of the acquirer and target. In this sense, the understanding of environmental performance as both a strategic asset and a potential area for challenges is dependent on both the resource situation of the target as well as the acquirer's ability to grasp the value-adding potential. We summarize these interdependencies in the matrix model below:

Figure 2.5: Dynamic Resource Valuation View

	Low — Target Environmental Performance — High	
High — Acquiror Environmental Performance	Value-adding opportunities recognized, leading to higher premia. Strategic enhancements of target's environmental performance having positive value impact.	Possible premium for environmental alignment but value-adding opportunities limited compared with lower-score targets.
Low	Potential for joint improvement but possibly overlooked synergies.	Possible challenges in recognizing and capturing full value due to environmental performance gap.

The matrix delineates the interaction between the environmental performance of the acquirer and the acquisition target, illuminating their collective impact on the strategic valuation of resources and capabilities. The quadrants formed by the axes representing the acquirer's and the target's environmental performance signal diverse valuation scenarios. The lower left quadrant represents cases where both entities exhibit low environmental performance, signaling potential discounts due to heightened risks and a reduced capacity to recognize and leverage opportunities for value enhancement. When the acquirer outstrips the

target in environmental performance, as depicted in the upper left quadrant, there emerges an opportunity to augment the target's environmental standing post-acquisition, a finding supported by our moderation analysis, which identified a statistically significant interaction between acquirer and target premia in this sector. Conversely, an environmentally proficient target might present a learning opportunity for an acquirer with lesser environmental performance; however, as indicated in the lower right quadrant, it may not permit full capitalization of environmental performance benefits. The upper right quadrant, where both parties demonstrate high environmental performance, suggests a potential premium due to the synergistic possibilities and alignment in sustainability endeavors, though this could be counterbalanced by the limited potential for further value enhancements, as described by the inverted U-shape relationship. The matrix offers a detailed guide for understanding how the composite environmental performance profile can inform the negotiation and integration strategies, ultimately shaping the acquisition outcomes. This model contributes a novel perspective to the RBV, emphasizing the dynamic and context-specific nature of resource-based strategic planning, particularly in the domain of corporate sustainability.

Expanding upon the matrix and the findings of this research, we suggest that the traditional VRIO framework of the RBV, which evaluates a competitive advantage based on value, rarity, imitability, and the organization's ability to exploit the advantage, needs to integrate an acquirer's environmental sensitivity for a comprehensive assessment of resource and capability valuation. This encompasses an acquirer's acumen in discerning and capitalizing on the value-adding prospects and recognizing the potential limitations in value capture, both for acquirers and targets. It implies that beyond the intrinsic attributes of the resources and capabilities, the strategic value is also contingent upon the acquirer's environmental cognizance and proficiency in actualizing the latent sustainable value and value potential within these resources and capabilities.

2.5.4.   Future Research

For future research, scholars could aim to refine the calculation of the optimum value point within the inverted U-shaped relationship. This would account for the complex interactions between various factors, acknowledging that an industry optimum might be contingent upon another variable's optimum. The refined formula should incorporate these interactions, allowing the model to demonstrate how environmental performance significantly affects other dimensions, such as the optimal level of regulatory compliance that could minimize the need for reputational management. For each dimension, local optima can be determined and aggregated into a global value optimum.

Additionally, research could further investigate the acquirer's perspective in the context of accurately recognizing and evaluating resources in the light of the dynamic approach towards the RBV. Overall, these findings underscore the criticality of incorporating environmental performance into the due diligence process as a non-financial metric that can yield strategic insights and inform more sustainable M&A decision-making. This could enhance the predictive accuracy of M&A success and help firms navigate the increasingly complex landscape of corporate sustainability.

2.5.5.   Limitations

A limiting factor for the results of this study is the limited availability of historical ESG data. Most firms began incorporating ESG reporting metrics in the late 2010s (Eccles et al., 2012), which challenges the generalization of findings beyond the observed period. Furthermore, studies have shown that high-quality disclosure on environmental metrics is predominantly associated with larger firms and those in sectors most directly related to environmental issues (Brammer & Pavelin, 2008). This could lead to some selection biases in the data. In connection, the study confines itself to tender offers of formerly listed companies

due to the scarcity of ESG data for private companies. As data providers are increasingly promoting application programming interfaces that enable private companies to report such data (Chapple et al., 2016), an extension of this analysis to unlisted companies could be feasible in the future and warrants further research. As demonstrated by Berg et al. (2020), ESG ratings are furthermore affected by divergent data collection approaches, category scopes, indicator granularity, weightings, and differences in handling non-reporting of relevant data among ESG data providers. By employing LSEG data, we work with one of the most comprehensive and leading datasets in this domain; however, we cannot entirely exclude the possibility that using other data providers may yield slightly different results (Howard, 2016). Regulatory standardizations could, going forward, help to promote a unified approach to sustainability reporting, which is vital for creating robust, universally applicable standards (Chalmers & Klingler-Vidra, 2023). Furthermore, ratings are based on reported data that might only represent a small portion of the information necessary to fully assess a company's ESG nature (Tirole, 2017). There may be score biases that favour larger companies with more robust measurement and reporting infrastructures. A major factor impacting ratings is the update cycle. Ratings are currently of a relatively static nature, and in some cases, they are updated only once per year, in line with companies' reporting cycles for sustainability data. The calendarization approach we utilize for the data serves as an approximation to simulate increments and decrements throughout the year, but for mathematical reasons, it can only do so linearly.

2.6. Conclusion

This study evidences the significant influence of a target's environmental performance on acquisition premia, informed by transaction multiples. It substantiates the existence of a curvilinear relationship between environmental performance and acquisition premia, endorsing

the idea of an optimal value-maximizing point that harmonizes shareholder cost and stakeholder value. Companies with environmental underperformance may see value diminution due to stakeholder disquiet, reputational jeopardy, and regulatory sanctions. Conversely, those reaching an environmental performance sweet spot can amplify value by nurturing stakeholder trust, boosting their brand, and capitalizing on regulatory inducements. Yet, entities that overinvest in environmental performance risk diminishing returns due to disproportionate resource allocation, leading to opportunity costs and managerial focus dilution. Therefore, calibrating environmental performance is essential for maximizing sustained value creation.

The findings also reveal that acquirers significantly shape this dynamic, with their perception of environmental performance risks and benefits varying, particularly when assessing targets with low to moderate environmental credentials. Acquirers possessing robust environmental performance are prone to value the positive aspects more highly, such as brand enhancement and stakeholder trust, while those with weaker environmental performance may prioritize other elements during their valuations. Moreover, the research highlights the strategic imperative of aligning the acquirer's environmental strategy with the target's enhancement potential. This strategic congruence not only bolsters the acquisition's value proposition but also ingrains sustainability within the merger or acquisition's strategic framework. Nonetheless, this interplay lessens when acquirers contend with targets at the higher end of environmental performance, where further improvements might yield little to no additional value, accentuating the importance of strategic resource fit and synergistic enhancement.

In essence, these insights furnish a deeper comprehension of the valuations tied to environmental performance and its moderating influences. Firms stand to gain by adopting a judicious, strategically informed stance on environmental performance, equipping them to mitigate risks, fortify stakeholder relations, and forge enduring value. With the burgeoning

prominence of environmental factors in corporate valuation, it becomes increasingly incumbent upon managers, investors, and stakeholders to grasp the multifaceted impact of varying environmental engagement levels and make informed decisions in light of these considerations.

2.7. Appendix

Table 2.1: Acquisition Sample Overview

Year	# Deals	# Cash	% Cash	# Cross-Border	% Cross-Border	# Cross-Industry	% Cross-Industry
2010	1	0	0.0%	0	0.0%	1	100.0%
2011	1	0	0.0%	0	0.0%	0	0.0%
2012	1	0	0.0%	0	0.0%	1	100.0%
2013	2	2	100.0%	1	50.0%	1	50.0%
2014	15	12	80.0%	6	40.0%	7	46.7%
2015	23	11	47.8%	7	30.4%	13	56.5%
2016	15	13	86.7%	8	53.3%	8	53.3%
2017	10	10	100.0%	2	20.0%	2	20.0%
2018	16	10	62.5%	4	25.0%	8	50.0%
2019	16	12	75.0%	7	43.8%	6	37.5%
Total	**100**	**70**	**70.0%**	**35**	**35.0%**	**47**	**47.0%**

Table 2.2: Variable Overview

Variable Description	
Dependent Variables	
Transaction Mult. Diff. - Target EV / EBITDA	Difference between Enterprise Value / EBITDA purchase price multiple announced and multiple of comparable transactions over the three years prior to the announcement
Independent Variables	
Target Environment Pillar Score_c	Target's weighted aggregate of the three category scores
Target Emissions Score_c	Target's dedication and efficacy in curtailing environmental emissions across its production and operational activities
Target Innovation Score_c	Target's prowess in mitigating environmental costs and generating new market prospects via the development of innovative environmental technologies or processes
Target Resource Use Score_c	Target's adeptness and capability in reducing the consumption of materials, energy, or water; advancing eco-efficient solutions through improvements in supply chain management
Acquiror Environment Pillar Score_c	Acquiror's weighted aggregate of the three category scores
Acquiror Emissions Score_c	Acquiror's dedication and efficacy in curtailing environmental emissions across its production and operational activities
Acquiror Innovation Score_c	Acquiror's prowess in mitigating environmental costs and generating new market prospects via the development of innovative environmental technologies or processes
Acquiror Resource Use Score_c	Acquiror's adeptness and capability in reducing the consumption of materials, energy, or water; advancing eco-efficient solutions through improvements in supply chain management
Mediating Variables	
Acquiror - Target Environment Pillar Score_c	Difference bwetween acquiror's and target's Environmental Pillar Score
Acquiror - Target Emissions Score_c	Difference bwetween acquiror's and target's Emissions Score
Acquiror - Target Innovation Score_c	Difference bwetween acquiror's and target's Innovation Score
Acquiror - Target Resource Use Score_c	Difference bwetween acquiror's and target's Resource Use Score
Deal Control Variables	
Cash	Dummy variable for deals involving cash component
Cross-Border	Dummy variable if acquiror and buyer are based in different countries
Cross-Industry	Dummy variable if acquiror and buyer are based in different industries, based on SIC mid industry code
Target Control Variables	
Target Revenues to Acquiror Revenues	Revenue level of target company at announcement date (trailing 12 months) to revenue level of acquiror at annountment date (trailing 12 months)
Target 3 Year Net Revenue Growth	Average revenue growth of target over three years prior to announcement date
Target MTB	Target market to Book Ratio at announcement date
Target Debt as % of Total Capital	Target debt as % of Total Capital at announcement date
Target Capex as % of Total Sales	Target capital expenditures as a percentage of sales at announcement date
Target ROE	Target return on equity at announcement date

Table 2.3: Regression Analysis of EBITDA Transaction Multiple Difference

Against Environmental Pillar Score

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square	F Change	df1	df2	Sig. F Change
1	.471[a]	0.222	0.101	8.48499	0.222	1.841	13	84	0.050
2	.518[b]	0.268	0.145	8.27762	0.046	5.261	1	83	0.024

a. Predictors: (Constant), Target Environment Pillar Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

b. Predictors: (Constant), Target Environment Pillar Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, Target Environment Pillar Score_c_sq

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1723.108	13	132.547	1.841	.050[b]
	Residual	6047.587	84	71.995		
	Total	7770.695	97			
2	Regression	2083.620	14	148.830	2.172	.016[c]
	Residual	5687.075	83	68.519		
	Total	7770.695	97			

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors: (Constant), Target Environment Pillar Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE,

c. Predictors: (Constant), Target Environment Pillar Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, Target Environment Pillar Score_c_sq

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.940	3.462		0.560	0.577
	Target Environment Pillar Score_c	-0.037	0.036	-0.112	-1.041	0.301
	Target Revenues to Acquiror Revenues	-0.143	0.085	-0.172	-1.678	0.097
	Target Operating Margin	0.106	0.084	0.151	1.260	0.211
	Target Capex as % of Sales	-0.052	0.085	-0.074	-0.610	0.544
	Target Leverage	-0.070	0.046	-0.174	-1.513	0.134
	Target ROE	0.024	0.057	0.047	0.417	0.678
	Acquiror Operating Margin	-0.058	0.109	-0.064	-0.530	0.597
	Acquiror Capex as % of Sales	-0.106	0.144	-0.091	-0.739	0.462
	Acquiror Leverage	0.138	0.063	0.282	2.181	0.032
	Acquiror ROE	0.015	0.016	0.098	0.915	0.363
	Cash	3.804	1.963	0.197	1.938	0.056
	Cross-Border	3.336	2.067	0.177	1.614	0.110
	Cross-Industry	-1.236	1.857	-0.069	-0.665	0.508
2	(Constant)	3.539	3.449		1.026	0.308
	Target Environment Pillar Score_c	0.000	0.039	0.000	-0.002	0.998
	Target Revenues to Acquiror Revenues	-0.129	0.083	-0.156	-1.551	0.125
	Target Operating Margin	0.107	0.082	0.153	1.307	0.195
	Target Capex as % of Sales	-0.073	0.083	-0.105	-0.880	0.381
	Target Leverage	-0.087	0.046	-0.216	-1.901	0.061
	Target ROE	0.031	0.056	0.061	0.550	0.584
	Acquiror Operating Margin	-0.058	0.107	-0.064	-0.545	0.587
	Acquiror Capex as % of Sales	-0.112	0.140	-0.096	-0.799	0.427
	Acquiror Leverage	0.142	0.062	0.292	2.311	0.023
	Acquiror ROE	0.017	0.016	0.112	1.069	0.288
	Cash	3.257	1.930	0.169	1.687	0.095
	Cross-Border	3.811	2.027	0.202	1.880	0.064
	Cross-Industry	-1.166	1.812	-0.065	-0.644	0.522
	Target Environment Pillar Score_c_sq	-0.003	0.001	-0.253	-2.294	0.024

a. Dependent Variable: EBITDA Transaction Multiple Difference

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Target Environment Pillar Score_c_sq	-.253[b]	-2.294	0.024	-0.244	0.727

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors in the Model: (Constant), Target Environment Pillar Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

Table 2.4: Regression Analysis of EBITDA Transaction Multiple Difference

Against Emission Score

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square	F Change	df1	df2	Sig. F Change
1	.480[a]	0.230	0.111	8.43895	0.230	1.932	13	84	0.038
2	.498[b]	0.248	0.121	8.39234	0.018	1.936	1	83	0.168

a. Predictors: (Constant), Target Emissions Score_c Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

b. Predictors: (Constant), Target Emissions Score_c Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, Target Emissions Score_c_sq

ANOVA[a]

Model		Sum of	df	Mean Square	F	Sig.
1	Regression	1788.567	13	137.582	1.932	.038[b]
	Residual	5982.128	84	71.216		
	Total	7770.695	97			
2	Regression	1924.887	14	137.492	1.952	.032[c]
	Residual	5845.808	83	70.431		
	Total	7770.695	97			

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors: (Constant), Target Emissions Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

c. Predictors: (Constant), Target Emissions Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, Target Emissions Score_c_sq

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.526	3.469		0.728	0.469
	Target Emissions Score_c	-0.041	0.029	-0.155	-1.420	0.159
	Target Revenues to Acquiror Revenues	-0.143	0.084	-0.172	-1.687	0.095
	Target Operating Margin	0.093	0.085	0.133	1.102	0.274
	Target Capex as % of Sales	-0.045	0.085	-0.065	-0.534	0.594
	Target Leverage	-0.070	0.046	-0.174	-1.517	0.133
	Target ROE	0.028	0.057	0.056	0.497	0.621
	Acquiror Operating Margin	-0.063	0.108	-0.069	-0.583	0.561
	Acquiror Capex as % of Sales	-0.107	0.143	-0.092	-0.749	0.456
	Acquiror Leverage	0.140	0.063	0.287	2.236	0.028
	Acquiror ROE	0.015	0.016	0.096	0.907	0.367
	Cash	3.456	1.984	0.179	1.742	0.085
	Cross-Border	3.506	2.057	0.186	1.705	0.092
	Cross-Industry	-1.291	1.837	-0.072	-0.702	0.484
2	(Constant)	3.795	3.569		1.063	0.291
	Target Emissions Score_c	-0.024	0.032	-0.091	-0.774	0.441
	Target Revenues to Acquiror Revenues	-0.136	0.084	-0.165	-1.622	0.109
	Target Operating Margin	0.112	0.085	0.159	1.311	0.193
	Target Capex as % of Sales	-0.071	0.086	-0.101	-0.823	0.413
	Target Leverage	-0.076	0.046	-0.189	-1.655	0.102
	Target ROE	0.028	0.056	0.056	0.504	0.616
	Acquiror Operating Margin	-0.085	0.109	-0.094	-0.782	0.436
	Acquiror Capex as % of Sales	-0.102	0.142	-0.087	-0.715	0.476
	Acquiror Leverage	0.149	0.063	0.306	2.385	0.019
	Acquiror ROE	0.018	0.016	0.122	1.138	0.258
	Cash	3.222	1.980	0.167	1.627	0.108
	Cross-Border	3.641	2.048	0.193	1.778	0.079
	Cross-Industry	-1.425	1.830	-0.080	-0.779	0.438
	Target Emissions Score_c_sq	-0.001	0.001	-0.155	-1.391	0.168

a. Dependent Variable: EBITDA Transaction Multiple Difference

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Target Emissions Score_c_sq	-.155[b]	-1.391	0.168	-0.151	0.727

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors in the Model: (Constant), Target Emissions Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

Table 2.5: Regression Analysis of EBITDA Transaction Multiple Difference

Against Environmental Innovation Score

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square	F Change	df1	df2	Sig. F Change
1	.469[a]	0.220	0.099	8.49550	0.220	1.821	13	84	0.053
2	.495[b]	0.245	0.118	8.40676	0.025	2.783	1	83	0.099

a. Predictors: (Constant), Target Innovation Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

b. Predictors: (Constant), Target Innovation Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, Target Innovation Score_c_sq

ANOVA[a]

Model		Sum of	df	Mean Square	F	Sig.
1	Regression	1708.126	13	131.394	1.821	.053[b]
	Residual	6062.569	84	72.173		
	Total	7770.695	97			
2	Regression	1904.784	14	136.056	1.925	.035[c]
	Residual	5865.911	83	70.674		
	Total	7770.695	97			

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors: (Constant), Target Innovation Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash,

c. Predictors: (Constant), Target Innovation Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, Target Innovation Score_c_sq

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.329	3.306		0.402	0.689
	Target Innovation Score_c	-0.033	0.035	-0.097	-0.935	0.352
	Target Revenues to Acquiror Revenues	-0.155	0.086	-0.187	-1.807	0.074
	Target Operating Margin	0.111	0.084	0.158	1.319	0.191
	Target Capex as % of Sales	-0.069	0.086	-0.098	-0.794	0.429
	Target Leverage	-0.071	0.046	-0.176	-1.532	0.129
	Target ROE	0.021	0.057	0.041	0.366	0.715
	Acquiror Operating Margin	-0.054	0.109	-0.059	-0.493	0.623
	Acquiror Capex as % of Sales	-0.084	0.146	-0.072	-0.578	0.565
	Acquiror Leverage	0.132	0.062	0.270	2.107	0.038
	Acquiror ROE	0.015	0.016	0.102	0.951	0.345
	Cash	4.033	1.947	0.209	2.071	0.041
	Cross-Border	3.123	2.039	0.166	1.532	0.129
	Cross-Industry	-1.169	1.854	-0.066	-0.630	0.530
2	(Constant)	2.109	3.305		0.638	0.525
	Target Innovation Score_c	0.035	0.053	0.105	0.659	0.511
	Target Revenues to Acquiror Revenues	-0.158	0.085	-0.191	-1.862	0.066
	Target Operating Margin	0.123	0.083	0.175	1.478	0.143
	Target Capex as % of Sales	-0.038	0.087	-0.055	-0.437	0.663
	Target Leverage	-0.089	0.047	-0.221	-1.887	0.063
	Target ROE	0.017	0.056	0.033	0.297	0.767
	Acquiror Operating Margin	-0.036	0.108	-0.039	-0.329	0.743
	Acquiror Capex as % of Sales	-0.147	0.149	-0.126	-0.982	0.329
	Acquiror Leverage	0.129	0.062	0.264	2.081	0.040
	Acquiror ROE	0.011	0.016	0.076	0.702	0.485
	Cash	3.652	1.940	0.189	1.882	0.063
	Cross-Border	3.379	2.023	0.179	1.670	0.099
	Cross-Industry	-1.050	1.836	-0.059	-0.572	0.569
	Target Innovation Score_c_sq	-0.002	0.001	-0.254	-1.668	0.099

a. Dependent Variable: EBITDA Transaction Multiple Difference

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Target Innovation Score_c_sq	-.254[b]	-1.668	0.099	-0.180	0.394

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors in the Model: (Constant), Target Innovation Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

Table 2.6: Regression Analysis of EBITDA Transaction Multiple Difference Against Resource Use Score

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square	F Change	df1	df2	Sig. F Change
1	.463[a]	0.214	0.093	8.52619	0.214	1.761	13	84	0.063
2	.486[b]	0.236	0.107	8.45712	0.022	2.378	1	83	0.127

a. Predictors: (Constant), Target Resource Use Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

b. Predictors: (Constant), Target Resource Use Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, Target Resource Use Score_c_sq

ANOVA[a]

Model		Sum of	df	Mean Square	F	Sig.
1	Regression	1664.240	13	128.018	1.761	.063[b]
	Residual	6106.455	84	72.696		
	Total	7770.695	97			
2	Regression	1834.298	14	131.021	1.832	.047[c]
	Residual	5936.398	83	71.523		
	Total	7770.695	97			

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors: (Constant), Target Resource Use Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

c. Predictors: (Constant), Target Resource Use Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry, TTarget Resource Use Score_c_sq

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.244	3.481		0.357	0.722
	Target Resource Use Score_c	-0.016	0.032	-0.055	-0.514	0.609
	Target Revenues to Acquiror Revenues	-0.143	0.085	-0.173	-1.678	0.097
	Target Operating Margin	0.108	0.085	0.153	1.266	0.209
	Target Capex as % of Sales	-0.050	0.086	-0.071	-0.579	0.564
	Target Leverage	-0.071	0.047	-0.177	-1.528	0.130
	Target ROE	0.019	0.057	0.038	0.338	0.736
	Acquiror Operating Margin	-0.040	0.108	-0.044	-0.366	0.715
	Acquiror Capex as % of Sales	-0.116	0.145	-0.099	-0.798	0.427
	Acquiror Leverage	0.131	0.063	0.269	2.076	0.041
	Acquiror ROE	0.013	0.016	0.088	0.825	0.412
	Cash	3.980	1.965	0.206	2.025	0.046
	Cross-Border	3.090	2.071	0.164	1.492	0.140
	Cross-Industry	-0.995	1.850	-0.056	-0.538	0.592
2	(Constant)	2.700	3.580		0.754	0.453
	Target Resource Use Score_c	-0.003	0.032	-0.012	-0.107	0.915
	Target Revenues to Acquiror Revenues	-0.129	0.085	-0.156	-1.510	0.135
	Target Operating Margin	0.111	0.085	0.159	1.318	0.191
	Target Capex as % of Sales	-0.048	0.085	-0.069	-0.569	0.571
	Target Leverage	-0.084	0.047	-0.208	-1.784	0.078
	Target ROE	0.028	0.057	0.055	0.485	0.629
	Acquiror Operating Margin	-0.037	0.107	-0.041	-0.350	0.727
	Acquiror Capex as % of Sales	-0.134	0.144	-0.115	-0.927	0.357
	Acquiror Leverage	0.127	0.063	0.261	2.033	0.045
	Acquiror ROE	0.013	0.016	0.087	0.819	0.415
	Cash	3.973	1.949	0.206	2.038	0.045
	Cross-Border	3.235	2.057	0.172	1.573	0.120
	Cross-Industry	-0.814	1.838	-0.046	-0.443	0.659
	Target Resource Use Score_c_sq	-0.002	0.001	-0.161	-1.542	0.127

a. Dependent Variable: EBITDA Transaction Multiple Difference

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Target Resource Use Score_c_sq	-.161[b]	-1.542	0.127	-0.167	0.848

a. Dependent Variable: EBITDA Transaction Multiple Difference

b. Predictors in the Model: (Constant), Target Resource Use Score_c, Target Revenues to Acquiror Revenues, Target Operating Margin, Target Capex as % of Sales, Target Leverage, Target ROE, Acquiror Operating Margin, Acquiror Capex as % of Sales, Acquiror Leverage, Acquiror ROE, Cash, Cross-Border, Cross-Industry

Table 2.7: Lower Half: Moderating Effect of Acquirer Environmental Pillar Score

on the Relationship Between Target Environmental Pillar Score Squared

and EBITDA Transaction Multiple Difference

***************** PROCESS Procedure for SPSS Version 4.2 *****************
Y: EBITDA Transaction Multiple Difference
X: Target Environmental Pillar Score_sq
W: Acquiror Environmental Pillar Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.4276	0.1828	87.1375	3.4308	3	46	0.0246

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	5.5502	4.2163	1.3164	0.1946	-2.9369	14.0372
Target Environmental Pillar Score_sq	-0.0064	0.0049	-1.3103	0.1966	-0.0164	0.0035
Acquiror Environmental Pillar Score	0.0262	0.0853	0.3065	0.7606	-0.1456	0.1979
Int_1	0.0002	0.0001	1.4343	0.1583	-0.0001	0.0004

Product terms key:

Int_1 : Target Environmental Pillar Score_sq x Acquiror Environmental Pillar Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0365	2.0571	1	46	0.1583

Level of confidence for all confidence intervals in output: 95.0000

Table 2.8: Lower Half: Moderating Effect of Acquirer Emission Score

on the Relationship Between Target Emission Score Squared

and EBITDA Transaction Multiple Difference

***************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: EBITDA Transaction Multiple Difference
X: Target Emission Score_sq
W: Acquiror Emission Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference
Model Summary

R	R-sq	MSE	F	df1	df2	p
0.5506	0.3032	74.3025	6.6721	3	46	0.0008

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	4.0875	4.1359	0.9883	0.3282	-4.2378	12.4127
Target Emission Score_sq	-0.0028	0.0035	-0.8107	0.4217	-0.0099	0.0042
Acquiror Emission Score	-0.0251	0.0729	-0.3441	0.7324	-0.1719	0.1217
Int_1	0.0002	0.0001	2.4064	0.0202	0.0000	0.0003

Product terms key:

Int_1: Target Emission Score_sq x Acquiror Emission Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0877	5.7906	1	46	0.0202

Focal predict: Target Emission Score_sq (X)
Mod var: Acquiror Emission Score (W)

Conditional effects of the focal predictor at values of the moderator(s):

AcEmSc	Effect	se	t	p	LLCI	ULCI
0.0000	-0.0028	0.0035	-0.8107	0.4217	-0.0099	0.0042
41.2248	0.0036	0.0022	1.6755	0.1006	-0.0007	0.0079
83.0957	0.0101	0.0034	2.9791	0.0046	0.0033	0.0170

Level of confidence for all confidence intervals in output: 95.0000

Table 2.9: Lower Half: Moderating Effect of Acquirer Environmental Innovation Score

on the Relationship Between Target Environmental Innovation Score Squared

and EBITDA Transaction Multiple Difference

***************** PROCESS Procedure for SPSS Version 4.2 *****************
Y: EBITDA Transaction Multiple Difference
X: Target Enironmental Innovation Score_sq
W: Acquiror Environmental Innovation Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3180	0.1011	95.8494	1.7253	3	46	0.175

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	7.5268	4.6065	1.6340	0.1091	-1.7457	16.7992
Target Enironmental Innovation Score_	-0.0098	0.0108	-0.9060	0.3697	-0.0316	0.0120
Acquiror Environmental Innovation Sco	0.0763	0.0999	0.7637	0.4489	-0.1248	0.2773
Int_1	0.0000	0.0003	-0.0457	0.9638	-0.0005	0.0005

Product terms key:

Int_1: Target Enironmental Innovation Score_sq x Acquiror Environmental Innovation Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0000	0.0021	1	46	0.9638

Level of confidence for all confidence intervals in output: 95.0000

Table 2.10: Lower Half: Moderating Effect of Acquirer Resource Use Score

on the Relationship Between Target Resource Use Score Squared

and EBITDA Transaction Multiple Difference

***************** PROCESS Procedure for SPSS Version 4.2 *****************
Y: EBITDA Transaction Multiple Difference
X: Target Resource Use Score_sq
W: Acquiror Resource Use Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3966	0.1573	89.8600	2.8623	3	46	0.0469

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	6.9765	3.7684	1.8513	0.0705	-0.6090	14.5620
Target Resource Use Score_sq	-0.0047	0.0031	-1.5411	0.1301	-0.0109	0.0014
Acquiror Resource Use Score	-0.0061	0.0702	-0.0872	0.9309	-0.1475	0.1352
Int_1	0.0001	0.0001	1.6975	0.0964	0.0000	0.0002

Product terms key:

Int_1: Target Resource Use Score_sq x Acquiror Resource Use Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0528	2.8814	1	46	0.0964

Focal predictor: Target Resource Use Score_sq (X)
Moderator variable: Acquiror Resource Use Score (W)

Conditional effects of the focal predictor at values of the moderator(s):

AcRUSc	Effect	se	t	p	LLCI	ULCI
0.0000	-0.0047	0.0031	-1.5411	0.1301	-0.0109	0.0014
48.0583	0.0001	0.0022	0.0547	0.9566	-0.0042	0.0045
81.8468	0.0035	0.0033	1.0592	0.2950	-0.0032	0.0102

Level of confidence for all confidence intervals in output: 95.0000

Table 2.11: Upper Half: Moderating Effect of Acquirer Environmental Pillar Score

on the Relationship Between Target Environmental Pillar Score Squared

and EBITDA Transaction Multiple Difference

***************** PROCESS Procedure for SPSS Version 4.2 *****************
Y: EBITDA Transaction Multiple Difference
X: Target Environmental Pillar Score_sq
W: Acquiror Environmental Pillar Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.4120	0.1697	84.0594	3.1340	3	46	0.0344

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	5.1668	4.2062	1.2284	0.2256	-3.3000	13.6336
Target Environmental Pillar Score_sq	-0.0078	0.0052	-1.4997	0.1405	-0.0182	0.0027
Acquiror Environmental Pillar Score	0.0647	0.0679	0.9525	0.3458	-0.0720	0.2014
Int_1	0.0000	0.0001	0.6227	0.5366	-0.0001	0.0002

Product terms key:

Int_1: Target Environmental Pillar Score_sq x Acquiror Environmental Pillar Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0070	0.3877	1	46	0.5366

Level of confidence for all confidence intervals in output: 95.0000

Table 2.12: Upper Half: Moderating Effect of Acquirer Emission Score

on the Relationship Between Target Emission Score Squared

and EBITDA Transaction Multiple Difference

********************** PROCESS Procedure for SPSS Version 4.2 *********************
Y: EBITDA Transaction Multiple Difference
X: Target Emission Score_sq
W: Acquiror Emission Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference
Model Summary

R	R-sq	MSE	F	df1	df2	p
0.2741	0.0752	93.6317	1.2461	3	46	0.304

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.3411	4.6028	0.5086	0.6134	-6.9239	11.6061
Target Emission Score_sq	0.0002	0.0038	0.0600	0.9524	-0.0075	0.0080
Acquiror Emission Score	0.0936	0.0741	1.2635	0.2128	-0.0555	0.2428
Int_1	0.0000	0.0001	-0.7477	0.4585	-0.0001	0.0001

Product terms key:

Int_1: Target Emission Score_sq x Acquiror Emission Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0112	0.559	1	46	0.4585

Level of confidence for all confidence intervals in output: 95.0000

Table 2.13: Upper Half: Moderating Effect of Acquirer Environmental Innovation Score on the Relationship Between Target Environmental Innovation Score Squared and EBITDA Transaction Multiple Difference

******************* PROCESS Procedure for SPSS Version 4.2 ******************

Y: EBITDA Transaction Multiple Difference
X: Target Enironmental Innovation Score_sq
W: Acquiror Environmental Innovation Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3201	0.1025	90.8664	1.7506	3	46	0.1699

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.9551	2.5909	1.5265	0.1337	-1.2602	9.1703
Target Enironmental Innovation Score_	-0.0014	0.0024	-0.5594	0.5786	-0.0062	0.0035
Acquiror Environmental Innovation Scc	0.0688	0.0486	1.4158	0.1636	-0.0290	0.1666
Int_1	0.0000	0.0000	-0.3564	0.7232	-0.0001	0.0001

Product terms key:

Int_1: Target Enironmental Innovation Score_sq x Acquiror Environmental Innovation Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0025	0.127	1	46	0.7232

Level of confidence for all confidence intervals in output: 95.0000

Table 2.14: Upper Half: Moderating Effect of Acquirer Resource Use Score

on the Relationship Between Target Resource Use Score Squared

and EBITDA Transaction Multiple Difference

***************** PROCESS Procedure for SPSS Version 4.2 *****************
Y: EBITDA Transaction Multiple Difference
X: Target Resource Use Score_sq
W: Acquiror Resource Use Score
Sample Size: 50

OUTCOME VARIABLE: EBITDA Transaction Multiple Difference

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.2818	0.0794	93.1996	1.3229	3	46	0.2784

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	7.4037	4.9424	1.4980	0.1410	-2.5449	17.3524
Target Resource Use Score_sq	-0.0081	0.0065	-1.2511	0.2172	-0.0212	0.0049
Acquiror Resource Use Score	0.0082	0.0729	0.1121	0.9112	-0.1386	0.1550
Int_1	0.0001	0.0001	0.8133	0.4202	-0.0001	0.0002

Product terms key:

Int_1: Target Resource Use Score_sq x Acquiror Resource Use Score

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0132	0.6615	1	46	0.4202

Level of confidence for all confidence intervals in output: 95.0000

3. Beyond Financial Outcomes: Assessing the Influence of ESG Tilt and Momentum on Employee Satisfaction in S&P 500 Corporations

Abstract: Employees are a crucial resource for most companies, and they increasingly care about ESG (Environmental, Social, and Governance)-related aspects within their firms. Accordingly, studies have highlighted employee satisfaction as a crucial link between ESG and financial performance. However, how ESG impacts employee satisfaction remains only partially explored. Next to a static view of perceived ESG performance levels, acknowledging changes in ESG performance is important as expectations, interpretations, and attitudinal consequences may be impacted by how sustainability develops within organizations. We thus explore the following question: What is the effect of ESG performance and its change over time on employee satisfaction? In this paper, we draw on organizational justice theory as well as expectancy theory to theorize different impacts that ESG performance level (i.e., ESG Tilt) and changes in ESG performance (i.e., ESG Momentum) have on employee satisfaction, based on different mechanisms connected to Tilt and Momentum. We utilize a dataset from Glassdoor.com, comprising S&P 500 employee reviews from 2009 to 2017, a comprehensive ESG dataset, and automated text analysis (NLP) to test our hypotheses. Our findings confirm that a higher level of ESG performance (i.e., Tilt) increases employee satisfaction mediated by employee perceptions of organizational justice. A relationship between the changes in ESG performance (i.e., Momentum) and employee satisfaction, mediated by the expectancy of future rewards, is partly confirmed. As a key stakeholder group, our paper contributes to a more refined perspective on the relationship between ESG and employees, advancing knowledge of mediating factors in these relationships. Furthermore, we provide a novel operationalization of organizational justice perceptions and employee expectancy through the analysis of employee reviews through natural language processing.

Keywords: ESG; Corporate Sustainability; Employee Satisfaction; Organizational Justice Theory; Expectancy Theory

3.1. Introduction

An employee review stating *"This company is huge on corporate social responsibility: employees tend to stay here long term due to the corporate culture. Great benefits package and flexibility for employees."* undoubtedly sounds more appealing than a review criticizing *"Terrible information sharing, poor corporate culture, and lack of sustainability. Unfair mistreatment from management to lower ranks. Working there is like swimming in a pool of deprived sharks with a bleeding wound."*

Over recent years, online employee reviews have gained significant attention from management practitioners and scholars (Corritore et al., 2020; Sharkey et al., 2022). In these reviews, employees express their evaluative judgements about various organizational aspects and articulate their satisfaction levels (Das Swain et al., 2020). To date, however, only a limited number of studies have explored how corporate sustainability and its growing adoption by major corporations affect employee satisfaction (Bauer, 2012; Ruiz-Palomino et al., 2021; Wowak et al., 2022). Employee satisfaction is generally defined as the extent to which employees are content with their jobs and work environment, encompassing the degree to which their experiences align with their personal values and goals (Locke, 1969). This is particularly surprising as we know that employees care about their firms' sustainability performance (Paruzel et al., 2021). Additionally, while previous studies have demonstrated that employee perceptions of ESG initiatives can vary over time and among individuals (Lauriano et al., 2022), and that there may be interrelatedness between employee perceptions and a company's existing sustainability record (Chen et al., 2020), most research has focused on static rather than dynamic views when exploring the effects of sustainability.

Within ESG research, much focus has been on the financial impact, showing that ESG performance can positively influence the performance of equities (Global Impact Investing Network and Cambridge Associates, 2015; GSIA Global Sustainable Investment Review,

2016; Friede et al., 2015), fixed income (Bauer & Hann, 2014) and overall financial performance (Edmans et al., 2017; Yoon et al., 2018; Zhao et al., 2018). Despite strong evidence of this impact, the precise drivers leading to corresponding financial performance gains are yet poorly understood. The literature has started to examine various drivers that explain the relationship between ESG and financial performance, such as innovation (Chouaibi et al., 2022), culture (Shin et al., 2023), and reputation (Kim et al., 2021).

Beyond financial performance, ESG research has increasingly expanded its focus towards employee welfare, motivation, and performance as the basis of successful firms. This shift marks a pivotal turn towards a closer examination of the effects of corporate sustainability on various internal stakeholder groups (Bénabou & Tirole, 2010; Servaes & Tamayo, 2013). A study by Gond et al. (2017) reviewed the micro-foundations of corporate social responsibility, emphasizing individual perspectives to understand better the personal drivers and implications of Corporate Social Responsibility (CSR) behaviors in organizations. Regarding corporate inclusion and diversity management, Pichler et al. (2018) found that LGBT-supportive corporate policies can enhance firm performance, with firms implementing (discontinuing) LGBT-supportive policies experiencing increasing (decreasing) firm value, productivity, and profitability. Adding to the dimension of workforce diversity, Austin and Pisano (2017) have underscored the value of neurodiversity in the workplace, demonstrating how the inclusion of neurodiverse individuals can significantly benefit areas like innovation and problem-solving. Wilkinson, Tomlinson and Gardiner (2018) explored the fairness perceptions of work-life balance policies in UK firms, revealing that childless, solo-living professionals largely did not perceive these policies, often tailored to working parents, as unfair.

Such studies extend the traditional understanding of employee-related ESG research towards a broader definition, including LGBT issues, neurodiversity, and work-life balance, of what makes a company a strong performer. In sum, scholarship increasingly acknowledges the

impact of various ESG initiatives on employee satisfaction. Despite the importance of such results, there is still a lack of understanding of how such ESG initiatives drive employee satisfaction as they change. Acknowledging changes, however, is vital as expectations, interpretations, and attitudinal consequences (and behavior) are significantly impacted by how sustainability develops within organizations (Lauriano et al., 2022). In this paper, we hence explore the following question: **What is the effect of ESG performance level and its change over time on employee satisfaction?**

To tackle this question, we propose that the influence of ESG performance level (i.e., ESG Tilt) and change (i.e., ESG Momentum) on employee satisfaction operates through two distinct mechanisms. First, we argue that ESG Tilt, which refers to a company's ESG performance level at a given time, impacts employee satisfaction through perceived organizational justice (Colquitt et al., 2001). We argue that high ESG levels lead to an increased perception of organizational justice because ESG furthers an organization's distributive, procedural, interpersonal, and informational justice (Glavas & Kelley, 2014). Second, and in contrast, we argue that ESG Momentum, defined as the change in ESG performance over time (i.e., the scale at which a company is improving or declining in its ESG practices), impacts employee satisfaction through improving employees' expectations that their individual efforts will be acknowledged (Vroom, 1964). We posit this to be the case as the dynamic change and increase in ESG signals to employees a general improvement in organizational efforts to meet sustainability expectations, and consequently, they may infer that their efforts will be acknowledged in the future (Vroom, 1964). It thus extends previous findings, which adopted an anticipatory stance based on announcements of future sustainability advancements (Babu et al., 2020; Lauriano et al., 2022), towards an empirical approach that grounds expectations in recent sustainability advancements. Furthermore, we create a framework based on these two mechanisms, rooted in organizational justice theory (Greenberg, 1990) and expectancy theory

(Van Eerde & Thierry, 1996), which guides our analysis of the trajectory of a firm's ESG efforts and their relationship with employee satisfaction.

We test our hypotheses through the analysis of 833,632 employee reviews posted by Glassdoor users for S&P 500 firms from 2009 to 2017 via natural language processing algorithms (Kang et al., 2020). Glassdoor is an employee review website where employees voice their (dis-)satisfaction with companies for various issues and has been used for studies on employee satisfaction (Lee et al., 2021; Luo et al., 2016). For the ESG data, we leverage a dataset from LSEG (formerly Refinitiv) / ASSET4, encompassing firm-specific ESG scores and thematic variables for each dimension. In addition, we have procured pertinent financial metrics to account for potential confounding factors. Our analyses reveal that ESG Tilt (i.e., the overall ESG level of an employer) significantly enhances general employee satisfaction, mediated by the perceived organizational justice dimensions of distributive, procedural, informational, and interpersonal justice. Thus, a higher ESG performance likely bolsters perceptions of organizational justice, which in turn contributes to increased employee satisfaction. However, our examination of the impact of ESG Momentum (i.e., the change in ESG scores over the past 2 years) shows no significant effect.

Our paper contributes to an advanced understanding of the impact of ESG on employee satisfaction by acknowledging the distinction between ESG level and change and the distinct impact they have on employee satisfaction. On the one hand, we use the Organizational Justice Theory to explain employee satisfaction based on perceived fairness due to current ESG practices at the organizational level influencing employee perceptions of fairness. On the other hand, we use the Expectancy Theory to explain employee satisfaction based on future expectations and anticipated rewards at the individual level that ESG Momentum impacts. The findings suggest that the relationship between perceived justice within a firm and its ESG level has a more significant impact than the relationship between individual expectancy and changes

in ESG. Our study also highlights the increased transparency of organizational justice and employee expectancy through platforms like Glassdoor and how ESG Tilt and Momentum might impact the voicing of such. This analysis furthermore provides practical implications for companies aiming to enhance their ESG strategies, by showing that high levels of ESG performance can positively affect employee satisfaction through perceived organizational justice, while changes in ESG performance may not have the immediate effects that might be anticipated. This differentiation between the static and dynamic aspects of ESG performance ultimately underscores the importance of consistent and long-term ESG commitments.

3.2. Theory & Hypotheses

3.2.1. Organizational Justice Theory, Employee Satisfaction, and ESG

Organizational justice centers around fairness within an organization, including distributive, procedural, interactional, and informational dimensions (Greenberg, 1990; Greenberg, 1993; Colquitt, 2001). Initially based on distributive justice, which examines outcome fairness based on equity, equality, and need (Adams, 1965; Deutsch, 1975; Leventhal, 1976), the concept has evolved to incorporate procedural justice. This dimension emphasizes the fairness of procedures leading to allocations and adherence to criteria such as consistency and the absence of bias (Thibaut & Walker, 1978), as well as the fairness of systems in decision-making and conflict mediation (Blader & Tyler, 2003). Recent developments have encouraged businesses to increasingly adopt corporate policies, sustainability measures, and compliance standards designed to promote procedural justice (Greenberg, 1990; Moorman, 1991). Examples include fair employee evaluation systems and equitable reward structures. These practices ensure that employees feel their contributions are fairly assessed and rewarded and that any concerns can be addressed justly. Employees' job satisfaction is influenced by their perceptions of these processes as impartial and transparent (Cropanzano et al., 2007). The

model is further elaborated by interpersonal and interactional justice, focusing on respectful treatment in procedures (Bies, 1987) and, as the most recent extension, informational justice, concerning the clarity and transparency of information (Greenberg, 1993; Colquitt, 2001). Also, in these matters, companies increasingly focus on transparency, employee involvement in decision-making processes, and providing clear explanations for organizational decisions.

Employee satisfaction is typically gauged by the degree to which an individual's values align with their job experiences and the fulfilment of these values (Locke, 1976). Within this framework, it represents an emotional response to a range of job characteristics, influencing key organizational outcomes such as turnover rates, productivity, and the general well-being of employees (Judge et al., 2001). On an extended view, Employee Satisfaction is commonly seen as a multidimensional construct encompassing various facets of job contentment, including work environment, role clarity, remuneration, and interpersonal relations (Judge et al., 2001). In terms of the level of ESG in a company, research indicates that when employees perceive their organization as committed to sustainable practices and equitable treatment, it enhances their sense of alignment with the company's values, thereby boosting their overall job satisfaction and engagement (Aguinis & Glavas, 2019; Rupp et al., 2013). This alignment reinforces employee's belief in the organization's commitment to ethical principles, which is increasingly recognized as a key driver of employee satisfaction in the modern workplace (Valentine & Fleischman, 2008).

ESG Tilt and Organizational Justice as Mediating Factor of Glassdoor Employee Satisfaction

Empirical studies suggest that strong ESG performance significantly contributes to employee satisfaction and engagement (Brammer et al., 2007; Glavas, 2016). In the light of the Organizational Justice Theory, the deployment of transparent rules and procedures plays a critical role in mitigating both favoritism and discrimination, thereby fostering a more inclusive

work environment (Colquitt et al., 2001). Within this paradigm, organizational justice also incorporates distributive justice, which addresses the fairness of outcomes, and interactional justice, which pertains to the quality of interpersonal treatment (Cropanzano et al., 2001; Greenberg, 1993). In return, these facets of organizational justice aid in establishing a positive organizational climate, reinforcing employee trust and promoting commitment to the organization. When employees perceive their work environment as fair and their treatment as respectful, this perception enhances job satisfaction and engagement, ultimately contributing to improved organizational outcomes (Colquitt et al., 2001; Masterson et al., 2000). We propose that companies with a pronounced ESG Tilt typically establish robust sustainability frameworks, leading to more transparent and fair decision-making processes, thereby enhancing employee satisfaction (Aguinis & Glavas, 2019). Fairness theory posits that individuals assess fairness by considering hypothetical alternatives of 'could,' 'should,' or 'would' (Folger & Cropanzano, 1998, 2001). Feelings of injustice may arise when stakeholders' evaluative principles diverge from those the organization employs (Wilkinson et al., 2018). In this context, sustainability stewardship in a company often involves transparent and accountable processes, for instance, in terms of environmental or workforce-related matters. This transparency can, among others, enhance employees' perceptions of procedural justice. By adhering to sustainable practices, organizations are committed to fair and ethical processes, bolstering employee trust in organizational procedures (Aguilera et al., 2007). Crucial to employees' perception of procedural justice are transparency, unbiased processes, consistency (Lind & Tyler, 1988), stakeholder engagement, and inclusivity in decision-making (Aguinis & Glavas, 2019). Particularly, the social dimension of ESG, which encompasses aspects such as diversity, employee rights, and community engagement, is closely aligned with the concept of procedural and distributive justice. Companies with strong social performance are likely to be perceived as fair in their procedures and the distribution of resources and

opportunities, enhancing employees' sense of equity and fairness (Brammer et al., 2007; Glavas, 2016). Next to this, effective governance, characterized by ethical leadership, accountability, and transparency, particularly influences perceptions of interpersonal and informational justice. Strong governance ensures that employees are treated with respect and dignity, thus fostering a sense of being valued within the organization (Brown et al., 2005). As the first hypothesis, we hence propose that there exists a positive correlation between ESG Tilt and Perceived organizational justice within an organization. This hypothesis is grounded in the principle that a strong ESG Tilt fortifies the perception of ethical and responsible corporate behavior. It is furthermore indicative of a certain level of fair and just internal processes and standards, thus enhancing their perception of organizational justice.

H1a: There is a positive relationship between ESG Tilt and perceived organizational justice among employees.

Following the initial hypothesis concerning the influence of ESG Tilt on organizational justice, the study progresses to theorize the subsequent impact of perceived organizational justice on employee satisfaction. This hypothesis is again anchored in the principles of Organizational Justice Theory, which contends that employees' perceptions of fairness within the organization are instrumental in determining their overall job satisfaction. Organizational justice, as previously outlined, encompasses distributive, procedural, interpersonal and informational dimensions. The theory posits that employees assess their satisfaction not just on the outcomes they receive (distributive justice) but also on the fairness of the processes leading to those outcomes (procedural justice), the quality of interpersonal treatment they experience, and the sufficiency and promptness of explanations provided (interpersonal and informational justice).

ESG-oriented firms often demonstrate a commitment to procedural justice, a core aspect of organizational justice focusing on the fairness of decision-making methods and resource allocation (Leventhal, 1980). When employees perceive that rewards and opportunities are distributed fairly, it enhances their sense of value and satisfaction within the organization. Equity theory supports this view, suggesting that employees continually assess the fairness of their rewards relative to their contributions (Adams, 1965). By implementing transparent, impartial, and consistent procedures, these firms establish a work environment where employees perceive their treatment as equitable (Cropanzano et al., 2007). Such alignment with procedural justice's key elements can lead to heightened job satisfaction (Lind & Tyler, 1988). Additionally, in the realm of distributive justice, studies have shown that the perceived fairness in resource distribution, recognition, and rewards within a company is crucial in molding employee satisfaction and engagement (Colquitt et al., 2006). This perspective is reinforced by the growing understanding that perceptions of distributive justice are essential to employees' sense of value and organizational commitment (Fortin, 2008). Fair and transparent procedures boost in this context employees' trust in the organization, which is a critical determinant of job satisfaction. Procedural fairness ensures that employees feel respected and valued, contributing to their overall job satisfaction (Thibaut & Walker, 1975; 1978; Colquitt et al., 2001). Regarding informational justice, research underscores the necessity of transparent communication and providing adequate explanations about decisions to nurture employee trust and commitment (Greenberg, 1993; Colquitt et al., 2001). This dimension of justice underscores the significance of clarity and openness from management, contributing substantially to employee satisfaction and organizational trust (Mayer et al., 1995). As for interpersonal justice, recent studies indicate that the quality of interpersonal treatment and respectful interactions with management are key predictors of job satisfaction and an employee's organizational commitment (Patient & Skarlicki, 2010). These aspects of

interpersonal justice are fundamental in fostering a supportive work environment, directly influencing an employee's engagement and perception of the company (Bies, 2001).

As a consecutive step, we theorize that perceived organizational justice positively influences employee satisfaction. This hypothesis suggests that perceptions of fairness in various aspects of organizational functioning are critical drivers of employee satisfaction. By examining the link between perceived organizational justice and employee satisfaction, this study aims to elucidate how fairness perceptions translate into tangible outcomes in terms of employee attitudes and behaviors within the workplace.

H1b: There is a positive relationship between perceived organizational justice and Employee Satisfaction.

We furthermore suggest that a company's positive ESG profile can, in return, play a significant role in enhancing employee satisfaction (Greenberg, 1990; Cohen-Charash & Spector, 2001; Colquitt, 2001). Previous studies have demonstrated a correlation between positive ESG performance and higher employee satisfaction, which in turn is associated with lower turnover rates (Gond et al., 2010; Guerci et al., 2015). Employees increasingly seek alignment with organizations whose values reflect their own, particularly regarding social responsibility and environmental stewardship. This alignment can enhance employees' sense of pride and satisfaction in their workplace (Bhattacharya et al., 2009). ESG performance is often seen as a reflection of an organization's ethical standards and culture. Employees' perceptions of their organization's ethical stance can significantly influence their overall job satisfaction (Glavas, 2016). This is particularly pertinent in scenarios where employees identify personally with the ethical stance of their organization (Valentine & Fleischman, 2008). To complement the two previous hypotheses, we consequently posit that ESG Tilt has a direct

positive effect on employee satisfaction, and this relationship is partly mediated by the perceived organizational justice of employees. This hypothesis integrates the constructs of ESG Tilt and perceived organizational justice to explain their combined effect on Employee Satisfaction. The mediating role of perceived organizational justice underscores the significance of employees' perceptions of fairness as a key mechanism through which ESG initiatives exert their influence on employee satisfaction.

H1c: ESG Tilt has a direct positive effect on Employee Satisfaction.

While we posit that ESG Tilt can directly influence Employee Satisfaction, its impact is also mediated through perceived organizational justice. Drawing upon H1a and H1b, we propose a more nuanced understanding: Employees who perceive their organization as embodying fairness, especially through an elevated ESG level, are more likely to experience heightened satisfaction. This posited correlation stems from the fact that perceptions of fairness in organizational policies and practices, particularly those pertaining to environmental and social governance, significantly contribute to an employee's sense of being valued and respected within their workplace environment (Rupp et al., 2013; Colquitt et al., 2007). We hence hypothesize that perceived organizational justice partly mediates the relationship between ESG Tilt and Employee Satisfaction among employees.

H1d: The relationship between ESG Tilt and Employee Satisfaction is partly mediated by employee' perceived organizational justice.

3.2.2. Expectancy Theory, Employee Satisfaction, and ESG

As a central point, this paper further suggests that employee satisfaction may be influenced not only by the current level of ESG performance but also by changes in ESG performance over time. In examining employee responses to the dynamic evolution of a firm's sustainability performance, recent research has predominantly concentrated on the impact of CSR expectancy violations among stakeholder groups such as customers (Kim et al., 2023; Park et al., 2021) and among employees, e.g. through research on corporate hypocrisy (Babu et al., 2020; Lauriano et al., 2022). The empirical dataset utilized in this study enables the exploration of such expectations not based on future announcements but on actual changes in sustainability performance observed in the recent past.

The Expectancy Theory of motivation, as formulated by Vroom in 1964, asserts that individuals are incentivized when there is a discernible nexus between their efforts, their resultant performance, and the rewards that follow. Central to this theory are three primary constructs: expectancy, instrumentality, and valence. Expectancy is the belief that effort will result in the attainment of desired performance levels; instrumentality is the belief that this performance will result in certain outcomes; and valence refers to the value an individual places on these outcomes (Vroom, 1964). Focusing on time as a dimension, Van Eerde and Thierry (1996) expanded the scope of Expectancy Theory by incorporating a temporal perspective, positing an interplay between time, motivation, and performance. They proposed that the expectancy relationships are dynamic rather than static. According to their view, an individual's perception of time, along with their orientation towards the past, present, and future, could significantly influence their motivational dynamics. This, in turn, has potential implications for their work satisfaction. This extended definition of the Expectancy Theory hence reflects a more proactive and future-oriented stance by explaining satisfaction levels based on anticipated rewards. This view integrates the past, present, and future, framing them

not as separate entities but as interconnected dimensions of an individual's motivational landscape. In the context of ESG, such an additional layer suggests that both the company's trajectory in ESG performance and the employee's time orientation play pivotal roles in determining their motivation and satisfaction at work. By integrating the temporal dynamics of ESG performance with individual perceptions of effort and reward, we offer a more holistic understanding of the factors that influence employee satisfaction. This perception aligns with their future-oriented expectations, enhancing their belief in the value and impact of their contributions (Glavas & Kelley, 2014). The emphasis, therefore, lies not just in current rewards but in the continuous interplay of expectancy, individual temporal orientations, and perceived outcomes.

ESG Momentum and Employee Expectancy as Mediating Factor of Glassdoor Employee Satisfaction

The expectancy theory, as proposed by Vroom (1964), posits that individuals' decisions and behaviors are driven by their expectations of outcomes, which are based on three key elements: expectancy, suggesting that effort leads to performance; instrumentality, indicating that performance will lead to certain outcomes; and valence, which refers to the value the individual places on the outcome (Porter & Lawler, 1968). Van Eerde and Thierry (1996) have added a temporal component depending on the employees' past, present or future orientation. Regarding of ESG Momentum and hence the temporal changes in ESG performance, employees are likely to perceive improvements in ESG Momentum, which refers to changes in ESG scores over time, as a signal of the organization's commitment to ethical, sustainable, and responsible behavior, and this perception could influence their expectancy, instrumentality, and valence assessments. With an increase in ESG Momentum, employees' expectancy may rise due to the perception that their efforts contribute to an organization's noble cause (Glavas,

2016). Instrumentality, pertaining to the perceived likelihood of rewards following performance within expectancy theory, relates to employees' beliefs about the tangible and intangible rewards associated with their performance. It may be further supported if organizations effectively communicate that positive ESG changes can lead to favorable outcomes, such as a positive work environment, improved reputation, and long-term business sustainability (Brammer et al., 2007).

As ESG scores improve, employees may perceive a stronger link between their efforts and the organization's ethical and sustainable performance. This perception enhances their belief that their contributions are instrumental in achieving valuable outcomes (Rupp et al., 2018). Effective communication about the impact of positive ESG changes could be crucial in strengthening the instrumentality aspect of the Expectancy Theory, as employees perceive a clear connection between the organization's ESG performance and favorable outcomes like a positive work environment or enhanced reputation (Brammer et al., 2007). The valence component is strengthened when employees value the outcomes associated with positive ESG Momentum. Employees increasingly value sustainable and ethical workplaces (Turban & Greening, 1997) and may hence perceive the outcomes of their efforts in organizations with positive ESG Momentum more favorably. In modern organizational contexts, employees increasingly value working in sustainable and ethical environments. Improvements in ESG performance can hence enhance the desirability of these outcomes (Turban & Greening, 1997). On this basis, employees may be more motivated and satisfied due to the alignment between their personal values and their perception of the organization's values (Rupp et al., 2018). We consequently posit that there is a positive relationship between ESG Momentum and employees' expectancy.

H2a: There is a positive relationship between ESG Momentum and employee expectancy.

Within the framework of Expectancy Theory, expectations are conceptualized as anticipated rewards (Vroom, 1964). These rewards encompass tangible benefits and intangible aspects such as recognition, personal growth, and alignment with personal and ethical values. Research indicates that employees' perceptions of their role and future in the organization, along with the fulfilment of their ethical and professional expectations, play a significant role in determining their job satisfaction (Judge et al., 2001). When employees perceive that their efforts are leading to the fulfilment of these anticipated rewards, their overall job satisfaction is likely to increase. The alignment of employees' values with the organization's ESG commitments is crucial in this relationship (Aguinis & Glavas, 2012). When employees see their values reflected in the organization's actions, their satisfaction with their job and the organization increases. Consecutively, we hypothesize that there is a positive relationship between the level of employee expectancy and satisfaction. We hence posit that employees with higher expectancy, fostered by the organization's strong commitment to ESG, are likely to feel more valued, motivated, and satisfied with their jobs.

H2b: There is a positive relationship between employee expectancy and employee satisfaction.

In terms of ESG Momentum, a growing body of research has explored the effects of dynamic ESG performance on employee satisfaction. Brammer et al. (2007) highlighted a positive link between improvements in corporate social performance and employee commitment. Valentine & Fleischman (2008) found that companies implementing ethics

programs can, in parallel, also boost work attitudes among employees due to the higher appreciation of ethical organizations. Similarly, Glavas (2016) found that incremental advancements in ESG performance bolstered employees' perceptions of meaningful work, influencing their satisfaction levels. In a more subtle study, Turban and Greening (1997) observed that while enhancements in ESG performance generally boosted job satisfaction, this effect was more pronounced in employees with a heightened social consciousness. This observation is in line with Rupp et al.'s (2018) findings, which highlight the role of individual differences in perceiving the significance of changes in ESG performance. Next to the static impact of a status quo level in ESG performance, we hence draw on such findings confirming an impact of changes in ESG performance and assume that changes in ESG performance may likewise impact employee satisfaction. We argue that firms with increased ESG Momentum can foster higher levels of employee satisfaction through improvements experienced from increases in ESG score performance.

H2c: ESG Momentum has a direct positive effect on Employee Satisfaction.

Further to the previous hypothesis, we posit that while ESG Momentum directly influences satisfaction by creating a more engaging and value-driven work environment, it also has an indirect effect through its impact on employees' expectations about their future in the organization and possible rewards in conjunction with their contributions. Regarding employee expectations, Lauriano et al. (2022) demonstrated that firms with elevated sustainability ambitions can raise their employees' moral expectations. This indicates that the anticipation of future sustainability performance levels may positively impact employee satisfaction levels. Although research has indicated that discrepancies between the expectations set by CSR announcements and measurable outcomes can negatively affect employee motivation (Babu et

al., 2020), this paper's ESG Momentum approach focuses on the actual differences in ESG performance. This mitigates the risks of word-deed misalignments by concentrating on tangible improvements achieved within the firm, thereby setting a more objective expectation standard among employees. As employees perceive an increase in ESG Momentum, their expectancy - the belief that their efforts contribute to meaningful outcomes - is likely to increase. This elevated expectancy can enhance their sense of instrumentality, believing that their performance will lead to valuable outcomes, thereby positively influencing their job satisfaction (Van Eerde & Thierry, 1996). Furthermore, this relationship is characterized by the valence aspect of Expectancy Theory, wherein employees value the outcomes associated with their contributions to an organization's sustainable and ethical practices (Porter & Lawler, 1968). We hypothesize that the relationship between ESG Momentum and Employee Satisfaction is partly mediated by employee expectancy. This hypothesis integrates ESG Momentum with the motivational constructs of expectancy theory due to the anticipated rewards and an expectation of an improved sustainability stance of the firm, suggesting that ESG Momentum influences Employee Satisfaction both directly and indirectly.

H2d: The relationship between ESG Momentum and Employee Satisfaction is partly mediated by Employee Expectancy.

3.3. Data Collection and Methodologies

3.3.1. Corporate and ESG Data

The group of companies assessed in this study consists of the 500 constituents of the S&P 500 as of 31 December 2016, spanning from 2009 to 2017. This selection aligns with other relevant research in this field (Alareeni & Hamdan, 2020; Minutolo et al, 2019) and is motivated by the robust availability of data for major corporations, the comprehensive coverage

of various industries, and the minimization of potential diverging external cultural and regulatory influences due to its strong alignment with the United States. This focus enables a more controlled analysis, reducing the variability that might arise from cross-cultural differences in corporate practices and ESG reporting standards. The dataset is filtered to include only entities with complete availability of relevant data points in terms of corporate, financial, and sustainability data as provided by LSEG, resulting in a total of 248 constituents being considered.

ESG scores encompass a substantial amount of material non-financial information, making them a valuable complementary dataset for assessing a company's performance (Li et al., 2018). We obtained quarterly ESG scoring data for the constituents of the S&P 500 from 2009 to 2017, focusing on the ESG category score data provided by LSEG ASSET4 and specifically in the social and governance domains. The relevant ASSET4 categories, therefore, include the Social Pillar Score, which reflects the weighted rating of a company based on disclosed social information; the Workforce Score, indicating the company's effectiveness in job satisfaction and employee development; the Human Rights Score, assessing a company's adherence to fundamental human rights conventions; the Community Score, evaluating a company's commitment to good citizenship and ethical practices; the Product Responsibility Score, reflecting the company's ability to ensure customer safety and product integrity; the Governance Pillar Score, derived from the weighted rating of reported governance data; the Management Score, measuring adherence to corporate governance best practices; the Shareholders Score, indicating effectiveness in equal shareholder treatment and anti-takeover measures; and the CSR Strategy Score, reflecting the integration of economic, social, and environmental decisions. This data set has been used in other studies, such as those by Friede et al. (2015) on ESG and financial performance and Khan et al. (2016) on sustainability information and stock performance. The category scores indicate the performance percentile

of the respective companies, measured against their industry peer group. Scores range from 0, being the lowest, to 100, representing the highest score attainable:

$$\text{ESG Score} = \frac{no.\,of\,companies\,with\,a\,lower\,value + \frac{no.\,of\,companies\,with\,the\,same\,value\,as\,the\,given\,company}{2}}{no.\,of\,companies\,with\,a\,value}$$

The overall composition of the category scores is determined by the weighting of specific ESG areas, deemed particularly material within each respective industry, such as greenhouse gas emissions for power generator companies. An indicative weighting matrix by LSEG is included in the appendix.

The measurement of ESG Tilt, within the scope of this study, involves analyzing the actual ESG scores across various categories for a specific quarter. This metric reflects a company's ESG score level in comparison to its industry peers. Conversely, the measurement of ESG Momentum is derived from the absolute change in a company's ESG score for a given quarter, compared to the same quarter two years earlier. This indicator demonstrates the extent to which a company's absolute ESG score level, relative to its peers, has evolved over a two-year period. For a detailed overview of the underlying ASSET4 ESG data categories, please refer to Table 3.1 in the appendix.

3.3.2. Glassdoor.com Ratings & Reviews

To measure perceived organizational justice, employee expectancy, and satisfaction across various organizations, we utilized a dataset comprising 833,632 Glassdoor.com reviews for the 500 constituents of the S&P 500 as of 31 December 2016. This dataset spans from 2009 to 2017 and serves as a unique and valuable source for assessing employee satisfaction. While certain limitations exist, the platform's anonymity may encourage employees to offer more forthright feedback, revealing their genuine sentiments about their employer. This aspect is

crucial for capturing potentially unvarnished perceptions of an organization's behavior and practices, as noted by Bamberger (2018). Our focus was exclusively on companies with complete datasets available throughout the observation period, resulting in a reduced number of companies under consideration. Refer to Table 3.1 of the appendix for an overview of the data categories.

Employee Satisfaction Data

Glassdoor.com's rating system includes three Boolean and seven numerical rating categories. These categories reflect employees' satisfaction with various aspects of their organizations and roles, as discussed by Chatterji et al. (2016). These specific categories include Overall Satisfaction, which relates to an aggregate measure of an employee's contentment with their job and employer. Next to this, it also covers Recommend to a Friend, Approve of CEO, Positive Business Outlook, Career Opportunities, Compensation & Benefits, Culture & Values, Diversity & Inclusion, Senior Management, and Work/Life Balance. While providing a rating for Overall Satisfaction is mandatory, the remaining nine categories are optional. For this study, we considered Overall Satisfaction as a proxy for employee satisfaction, due to its generic nature as a standardized measure for the overall satisfaction of employees with their firm and the broadest availability of data among all categories. The satisfaction score is provided as a numerical rating on a scale of 1 to 5.

Organizational Justice Data

To further test the hypotheses involving perceived organizational justice, which refers to employees' perceptions of fairness in their organization, we have categorized bigrams into groups representing distributive, procedural, interpersonal, and informational justice. For each of these categories, we have selected 25 bigrams that signify a particularly high and a

particularly low level of the corresponding justice type, respectively. Using Natural Language Processing through a proprietary script based on NLTK, we have scanned the verbal reviews in the 'pro' section of Glassdoor.com for bigrams representing a high level of organizational justice and the 'con' review text sections for bigrams representing a low level. Such selections include bigrams as "fair pay" to account for a high and "low compared" to account for a low perceived distributive justice. For the regression analyses, individual variables are employed for each of the four categories of justice, whereas an aggregate variable encompassing all four categories is utilized in the mediation analysis. This approach allows for the standardization of language patterns while simultaneously achieving sufficient granularity to capture employees' thoughts and impressions regarding the applied theories. On this basis, as described in the data processing section, we calculate the relative ratio of positive versus negative bigrams in their respective comment sections as a scale variable between 0 and 100 per cent. To transfer the four dimensions of organizational justice into one organizational justice indicator, we subsequently calculate the average value of distributive, procedural, interpersonal, and informational justice. This allows for a measurement of the relative strength of positive versus negative comments to reflect on employees' perceptions regarding organizational justice.

Expectancy Theory Data

Additionally, to test for the hypotheses involving employee expectancy, which is in the context of the Expectancy Theory defined as the degree to which employees believe their efforts will lead to effective performance and desired outcomes, we identified a group of 25 bigrams representing particularly high and a particularly low level of expectancy, respectively. As for the perceived organizational justice, we also, here, in textual analysis, identified the number of bigrams for each company and quarter in the 'pro' and 'con' comment sections on Glassdoor.com and calculated their relative occurrence to each other. Such bigrams include,

e.g. "advancement opportunities" to account for a high and "turnover rate" to account for a low employee expectancy. We measure this scale variable as a percentage from 0 to 100 per company and quarter. As expectancy relates to a behavioral process and does not have thematic areas such as perceived organizational justice, we only measure one scale variable.

3.3.3. Control Variables

In addressing potential confounding factors, we incorporated a range of financial and non-financial control variables based on data obtained through LSEG (formerly Refinitiv). Financial variables include company size, measured by total assets (Rajan & Zingales, 1995); profitability, represented by return on assets (ROA) (Fama & French, 1992); leverage, calculated as total debt to total assets (Myers, 1977); capital expenditures (Capex), indicative of a company's investments in physical assets (Titman & Wessels, 1988); and the number of employees to gauge organizational scale (Caves, 1998). For non-financial variables, we included the number of employees and the year-on-year employee headcount growth to reflect organizational changes (Pfeffer & Salancik, 1978).

3.3.4. Data Processing

For our analyses, we adopted an approach distinct from that of Glassdoor.com, which calculates average rating levels over larger periods. Instead, we computed average ratings on a quarterly basis. This computation was achieved by analyzing reviews submitted during specific quarterly periods, utilizing a proprietary Python script. The comprehensive longitudinal data, covering the years from 2009 to 2017, enabled an objective observation of variations in relevant employee assessments over time. We employed a proprietary script based on the Python Natural Language Toolkit (NLTK) library to quantify the textual patterns in the reviews,

adopting a 'bag of words' methodology (Blei et al., 2003). This involved examining the frequency of lemmatized and, hence, standardized word pairs (bigrams) and ranking them according to their cumulative occurrence within the dataset. During the pre-processing of qualitative data from the Glassdoor.com dataset, we encoded the information using UTF-8, cleaned it, and partitioned it into word tokens (Kang et al., 2020). Subsequently, we translated reviews from languages other than English into English, corrected orthographical errors, and removed stop words, such as conjunctions, which, though prevalent in natural language, provide minimal analytical value (Manning & Schütze, 1999). Ultimately, we applied stemming or lemmatization to the words, transforming them from their inflected forms to foundational forms (Porter, 1980). Based on the bigram results, we delineated four categories of bigrams corresponding to procedural, distributive, interpersonal, and informational justice, with each of the sets containing 25 positive and 25 negative bigrams. The positive bigram set is measured in the "Pro" section of the Glassdoor.com reviews, while the negative bigram set is measured in the "Con" section. We conducted the same for bigrams relating to positive and negative expectancy levels in line with the Expectancy Theory. The corresponding bigrams used for the analysis can be found in Table 3.3 of the appendix. To determine the relative predominance of distinct word pairs, we computed a ratio as follows:

$$
NLP \ Review \ Ratio
$$
$$
= \frac{No. count \ for \ positive \ bigram \ set \ in \ given \ quarter}{(No. count \ for \ positive \ bigram \ set \ in \ given \ quarter + No. count \ for \ negative \ bigram \ set \ in \ given \ quarter)}
$$

Figure 3.1: Flow Chart of Natural Language Processing
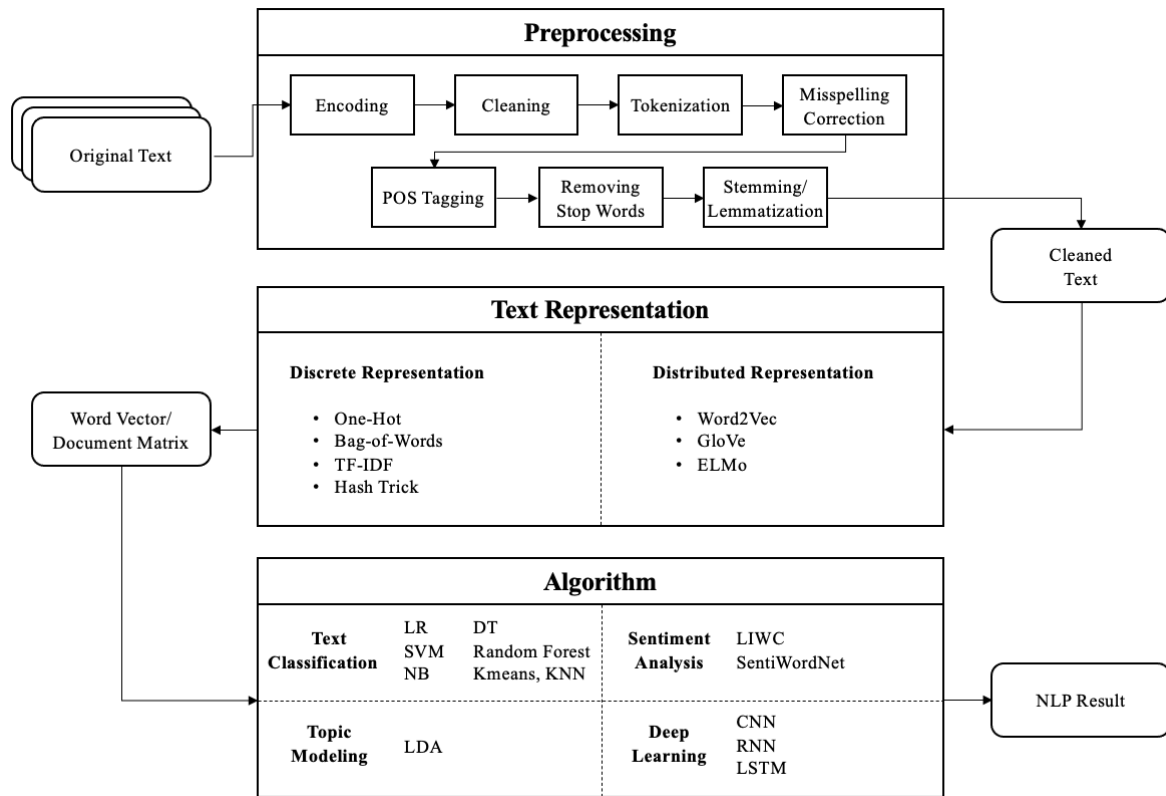
Kang, Y., Cai, Z., Tan, C-W., Huang, Q., & Liu, H. (2020). Natural Language Processing (NLP) in Management Research: A Literature Review. Journal of Management Analytics, 7(2), 139-172.

3.4. Results

In this section, we present the findings from our analysis of the relationship between ESG metrics and employee ratings and reviews on Glassdoor.com and their possible mediating factors. Figure 3.2 summarizes the means, standard deviations, and correlations among all variables.

Starting with the Independent Variables, we observe that the mean scores for the various tilts range from 32.16 for the Human Rights Score Tilt to 79.29 for the Community Score Tilt, indicating varying degrees of emphasis companies place on different ESG aspects. These categories have substantial standard deviations, particularly for the Human Rights Score Tilt (34.44), signaling a wide dispersion of company scores around the mean. Correlation coefficients between these tilts indicate significant positive relationships at the 0.01 level (**),

with particularly strong correlations observed between Workforce Score Tilt and Social Pillar Score Tilt (0.800), and between CSR Strategy Score Tilt and both Social Pillar Score Tilt (0.633) and Workforce Score Tilt (0.625). These strong correlations suggest that companies with a focus on social issues and workforce engagement tend to also prioritize CSR strategies. Score Momentums, representing changes over time in the various ESG aspects, have lower mean values close to or below 3, with Human Rights Score Momentum being the highest at 3.09, and Shareholders Score Momentum being essentially negligible at 0.04. This might indicate that changes in these ESG scores are typically incremental for S&P 500 companies. The mediating variables show moderate mean values of 0.69 for Perceived organizational justice and 0.45 for Employee Expectancy, with a positive correlation between them (0.147 at the 0.05 level), suggesting that as employees' perception of fairness increases, so does their expectancy of outcomes. Employee Satisfaction as the dependent variable has a mean of 3.27 on a scale of 1 to 5 and a standard deviation of 0.64. It shows significant positive correlations with many of the independent variables, including a strong correlation with CSR Strategy Score Tilt (0.148 at the 0.01 level), indicating that a company's strategic approach to CSR is strongly associated with higher employee ratings. For the control variables, the mean and standard deviation for the Number of Employees indicate a wide variation in company sizes. Notably, it has a significant positive correlation with many of the ESG tilts, suggesting that larger companies may tend to score higher on these ESG metrics. Financial metrics such as 'Operating Profit Margin' and 'Leverage as % of Capital' have correlations with both independent and dependent variables, though these tend to be weaker than the non-financial control variables.

Figure 3.2: Means, Standard Deviations, and Correlations among all Variables

Means, standard deviations and correlations among all variables

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Independent Variables																													
Social Pillar Score Tilt	58.40	19.26	1																										
Workforce Score Tilt	62.39	22.99	.800**	1																									
Human Rights Score Tilt	32.16	34.44	.727**	.454**	1																								
Community Score Tilt	79.29	17.88	.649**	.539**	.295**	1																							
Product Responsibility Score Tilt	54.24	27.55	.701**	.427**	.386**	.312**	1																						
Governance Pillar Score Tilt	59.23	19.91	.237**	.279**	.158**	.239**	.148**	1																					
Management Score Tilt	61.64	25.11	.080**	.121**	.054**	.073**	.066**	.928**	1																				
Shareholders Score Tilt	57.83	27.26	.103**	.139**	0.008	.212**	0.014	.476**	.194**	1																			
CSR Strategy Score Tilt	49.24	33.40	.633**	.625**	.495**	.534**	.400**	.400**	.153**	.175**	1																		
Social Pillar Score Momentum	1.52	6.03	.152**	.093**	.116**	.108**	.099**	-0.015	0.001	-.059**	0.003	1																	
Workforce Score Momentum	0.98	8.54	.048**	.180**	-0.010	0.019	-.037**	-0.018	-0.008	-.029*	-0.013	.566**	1																
Human Rights Score Momentum	3.09	12.18	.157**	.048**	.259**	.047**	.061**	-0.002	-0.011	-0.008	.039**	.609**	.102**	1															
Community Score Momentum	0.64	9.13	.077**	.039**	-0.007	.257**	0.010	0.002	-0.002	-0.022	.041**	.494**	.139**	.065**	1														
Product Responsibility Score Momentum	1.27	10.33	.051**	-.031*	-0.014	-.043**	.198**	-.028*	0.011	-.061**	-.092**	.565**	.168**	.124**	.065**	1													
Governance Pillar Score Momentum	1.28	10.70	-.037**	-.041**	-0.002	-0.021	-.043**	.275**	.319**	0.024	-0.015	.080**	.095**	0.023	.035*	.050**	1												
Management Score Momentum	1.56	15.28	-.035*	-.038**	-0.003	-0.026	-.037**	.269**	.337**	-.030*	-.044**	.047**	.069**	0.010	0.005	.037**	.963**	1											
Shareholders Score Momentum	0.04	11.98	-0.017	-.030*	0.017	-0.018	-0.016	.068**	0.005	.213**	0.019	.034*	0.006	0.018	0.021	.029*	.276**	.054**	1										
CSR Strategy Score Momentum	1.72	11.73	0.002	0.013	-0.022	.056**	-.028*	0.026	-0.022	.035*	.155**	.193**	.192**	.065**	.176**	.052**	.146**	-0.001	0.005	1									
Mediating Variables																													
Perceived Organizational Justice	0.69	0.22	0.018	.058**	-0.002	.033**	.027*	.071**	.037**	.056**	.108**	-0.004	0.021	0.005	-0.009	-0.022	0.009	0.001	.031*	0.006	1								
Employee Expectancy	0.45	0.42	0.003	0.011	-0.019	0.006	0.017	-0.006	-0.016	0.003	0.029	-0.038	0.016	-0.015	-0.028	-.056**	0.005	0.011	-0.017	-0.019	.147**	1							
Dependent Variables																													
Employee Rating	3.27	0.64	.112**	.129**	.103**	.111**	.054**	.045**	0.008	0.019	.148**	.044**	.036**	.049**	0.021	-0.002	0.011	0.003	.038**	-0.002	.324**	.145**	1						
Control Variables																													
Employee No.	60,946.60	150,434.74	.236**	.203**	.203**	.125**	.164**	.029*	0.004	-0.020	.140**	-.043**	-.031**	-.046**	0.010	-0.025	-0.012	-0.005	-0.012	-0.027	-.102**	-.082**	-.037**	1					
Employee 1yr Growth	3.11	19.89	-.071**	-.031**	-.046**	-.101**	-.070**	-.134**	-.093**	-.093**	-.133**	.068**	.123**	.041**	-.029*	0.013	-.040**	-.041**	-0.011	0.015	-.048**	0.005	-0.015	-0.005	1				
Turnover 12 Months Trailing	24,386.05	46,726.12	.274**	.251**	.233**	.177**	.197**	.129**	.062**	.073**	.252**	-.058**	-.042**	-.047**	0.003	-0.026	-.054**	-.040**	-.055**	-0.026	-.032**	-.045**	0.007	.668**	-.039**	1			
Operating Profit Margin	15.95	11.30	0.018	.036**	-.068**	0.005	.024*	-0.006	-0.019	.061**	-.032*	.041**	.061**	-0.004	0.013	.067**	0.017	0.022	-0.021	0.003	0.016	.049**	.031*	-.101**	.054**	-.151**	1		
Leverage as % of Capital	44.35	27.26	.075**	0.011	.056**	.070**	.055**	.090**	.039**	.128**	.100**	-0.009	-0.004	0.001	0.017	-0.026	0.025	0.016	0.008	.052**	-0.008	0.002	0.002	.062**	-.047**	-0.006	.047**	1	
Capex as % of Sales	9.87	18.25	-.151**	-.077**	-.157**	-.133**	-.113**	.029*	.028*	.031*	-0.013	0.018	0.024	-0.020	.040**	0.015	.053**	.041**	.050**	0.023	.092**	0.008	.069**	-.115**	-.027**	-.112**	.047**	.059**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

3.4.1. Impact of ESG Tilt on Employee Satisfaction

Regression Analyses for ESG Tilt, Perceived organizational justice, and Glassdoor.com Employee Ratings

The impact of ESG Tilt on Glassdoor.com employee ratings has been substantiated by three different regression analyses, which included 15,796 data rows of the different S&P 500 constituents to allow for a strong robustness of the results. The analyses refer to the relationship between ESG Tilt and perceived organizational justice for a test of Hypothesis H1a, then to the relationship between perceived organizational justice and employee satisfaction for a test of H1b and finally to the relationship of ESG Tilt and employee satisfaction for a test of H1c. Figure 3 summarizes the results of the corresponding analyses.

As the first step, we conducted a regression analysis to explore the relationship between perceived organizational justice and various predictors encompassing social and governance dimensions, workforce metrics, and financial indicators to test Hypothesis H1a. In this model, the constant term for organizational justice is significant (p-value < 0.000), with a coefficient of 64.492, indicating a solid baseline level of perceived organizational justice across the sample when all other variables are held at zero. This suggests a foundational level of justice employees perceive, irrespective of the other measured factors. Regarding independent variables, the Social Pillar Score negatively affects organizational justice (coefficient = -0.337, p-value < 0.000). Conversely, the Workforce and Product Responsibility Scores positively influence perceived justice (coefficients of 0.127 and 0.088, respectively, both with p-values < 0.000), suggesting that higher scores in these performance areas might be associated with perceptions of increased fairness among employees. Human Rights and Community Scores also show positive associations with perceived justice, though their coefficients are relatively smaller (0.046 and 0.069, with p-values of 0.004 and 0.009, respectively), indicating a more modest impact on employee perceptions of fairness. Control variables such as Employee

Number and Capex as % of Sales are significantly associated with perceived justice, with Employee Number showing a very small but significant coefficient (p-value < 0.000). The Operating Profit Margin's positive coefficient (0.062, p-value = 0.012) underscores the role of financial performance in influencing perceptions of fairness within the organization. The statistical significance of the regression model is underscored by an F-Value of 22.479 and an Adjusted R-Square of 0.044. While the latter may seem modest, it highlights the complexity of factors influencing employee perceptions in organizational settings. In sum, we can conclude statistically relevant relationships between ESG Tilt and the perceived organizational justice within the analyzed data set. The coefficient is positive for most independent variables, while the results in single instances yielded a statistically negative coefficient, such as for the Social Pillar Score. Hypothesis H1a is, hence, partly confirmed.

As a test of Hypothesis H1b, we further examined the regression analysis focusing on employee satisfaction as the dependent variable in the context of perceived organizational justice. In this model, the constant term is significantly positive (coefficient = 2.632, p-value < 0.000), setting a foundational level of employee satisfaction that exists independently of the measured variables. The coefficient for Perceived organizational justice stands at 0.008 (p-value < 0.000), indicating a direct and positive relationship between how justice is perceived within the organization and the overall satisfaction of employees. The significance of this variable suggests that even small improvements in perceived justice can lead to noticeable increases in employee satisfaction. Regarding control variables, the Turnover 12 Months Trailing and Capex as % of Sales variables show a significant relationship with employee satisfaction, underscoring the impact of size and growth investments on how employees feel about their workplace. However, some control variables, such as Employee 1yr Growth and Leverage as % of Capital, did not show a statistically significant impact on employee satisfaction within this model (p-values of 0.450 and 0.605, respectively). The model's F-value

of 112.973 suggests that the variables included in the model collectively have a significant effect on employee satisfaction. The R-Square value of 0.108, with an Adjusted R-Square of 0.107, indicates that the model can explain approximately 10.7% of the variance in employee satisfaction. Hypothesis H1b, which posits a positive relationship between perceived organizational justice and Employee Satisfaction, is hence confirmed.

To test hypothesis H1c, we furthermore employed regression analysis to validate the impact of ESG Tilt as independent on employee satisfaction as dependent variable. As for the other analyses, the model shows a significant constant term (coefficient = 2.932, p-value < 0.000). For Tilt, the Social Pillar Score Tilt shows a negative association with employee satisfaction (coefficient = -0.011, p-value < 0.000). As for previous analyses, other tilt factors like the Workforce, Human Rights, and Community Score Tilts all positively influence employee satisfaction (coefficients of 0.005, 0.004, and 0.005, respectively), with p-values < 0.000. The Governance Pillar Score Tilt shows a marginal and not statistically significant impact on employee satisfaction, hinting that governance factors might not be as directly impactful on employee satisfaction. Control variables such as Employee Number and Capex as % of Sales are both significant at p-values of 0.000. The positive coefficient of Operating Profit Margin (0.002, p-value = 0.001) reinforces the notion that financial health positively impacts satisfaction. The statistical robustness of the analysis is highlighted by an F-value of 24.819. The R-Square and Adjusted R-Square stand at 0.048 and 0.046, respectively. Hypothesis H1c, which posits a direct positive effect of ESG Tilt on Employee Satisfaction, is hence partly confirmed.

Figure 3.3: Regression Analyses

Regression Analysis for Perceived organizational justice and Employee Expectancy

	Model 1 (Org. Just.)[a]		Model 2 (Exp.)[b]	
	Coefficient	P-value	Coefficient	P-value
(Constant)	64.492	0.000	40.567	0.000
Social Pillar Score Tilt	-0.337	0.000		
Workforce Score Tilt	0.127	0.000		
Human Rights Score Tilt	0.046	0.004		
Community Score Tilt	0.069	0.009		
Product Responsibility Score Tilt	0.088	0.000		
Governance Pillar Score Tilt[c]	-	-		
Management Score Tilt	-0.005	0.662		
Shareholders Score Tilt	0.026	0.014		
CSR Strategy Score Tilt	0.071	0.000		
Social Pillar Score Momentum			-0.172	0.788
Workforce Score Momentum			0.136	0.512
Human Rights Score Momentum			0.011	0.944
Community Score Momentum			-0.046	0.820
Product Responsibility Score Momentum			-0.214	0.257
Governance Pillar Score Momentum[c]			-	-
Management Score Momentum			-0.008	0.890
Shareholders Score Momentum			-0.014	0.864
CSR Strategy Score Momentum			-0.053	0.514
Employee No.	0.000	0.000	0.000	0.001
Employee 1yr Growth	-0.072	0.000	0.013	0.844
Turnover 12 Months Trailing	0.000	0.901	0.000	0.069
Operating Profit Margin	0.062	0.012	0.268	0.002
Leverage as % of Capital	-0.017	0.121	0.007	0.859
Capex as % of Sales	0.119	0.000	0.063	0.503
Number of Data Rows	15796		15796	
F-Value	22.479		2.613	
R-Square	0.046		0.017	
Adjusted R-Square	0.044		0.011	

a. Dependent Variable: Perceived organizational justice
b. Dependent Variable: Employee Expectancy
c. Variable Excluded

Regression Analysis for Employee Satisfaction

	Model 1 (Org. Just.)[a]		Model 2 (Exp.)[a]	
	Coefficient	P-value	Coefficient	P-value
(Constant)	2.632	0.000	3.148	0.000
Perceived organizational justice	0.008	0.000		
Employee Expectancy			0.001	0.000
Employee No.	0.000	0.003	0.000	0.000
Employee 1yr Growth	0.000	0.450	0.000	0.572
Turnover 12 Months Trailing	0.000	0.000	0.000	0.001
Operating Profit Margin	0.001	0.030	0.001	0.220
Leverage as % of Capital	0.000	0.605	0.001	0.055

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	Model 1 (Tilt)[a]		Model 2 (Momentum)[a]	
	Coefficient	P-value	Coefficient	P-value
Capex as % of Sales	0.001	0.000	0.001	0.222
Number of Data Rows	15796		15796	
F-Value	112.973		12.728	
R-Square	0.108		0.035	
Adjusted R-Square	0.107		0.032	

Regression Analysis for Employee Satisfaction

	Model 1 (Tilt)[a]		Model 2 (Momentum)[a]	
	Coefficient	P-value	Coefficient	P-value
(Constant)	2.932	0.000	3.269	0.000
Social Pillar Score Tilt	-0.011	0.000		
Workforce Score Tilt	0.005	0.000		
Human Rights Score Tilt	0.004	0.000		
Community Score Tilt	0.005	0.000		
Product Responsibility Score Tilt	0.002	0.000		
Governance Pillar Score Tilt	-0.001	0.052		
Shareholders Score Tilt	0.000	0.968		
CSR Strategy Score Tilt	0.001	0.000		
Social Pillar Score Momentum			-0.003	0.565
Workforce Score Momentum			0.003	0.082
Human Rights Score Momentum			0.003	0.029
Community Score Momentum			0.002	0.318
Product Responsibility Score Momentum			0.000	0.844
Governance Pillar Score Momentum			0.000	0.777
Shareholders Score Momentum			0.002	0.004
CSR Strategy Score Momentum			-0.001	0.230
Employee No.	0.000	0.000	0.000	0.000
Employee 1yr Growth	0.000	0.993	-0.001	0.015
Turnover 12 Months Trailing	0.000	0.191	0.000	0.000
Operating Profit Margin	0.002	0.001	0.001	0.061
Leverage as % of Capital	0.000	0.650	0.000	0.918
Capex as % of Sales	0.003	0.000	0.003	0.000
Number of Data Rows	15796		15796	
F-Value	24.819		7.593	
R-Square	0.048		0.021	
Adjusted R-Square	0.046		0.018	

a. Dependent Variable: Employee Satisfaction

Mediation Analyses for ESG Tilt, Perceived organizational justice, and Glassdoor.com Employee Ratings

We further employed a mediation analysis using the PROCESS macro for SPSS (Hayes, 2022) to investigate the relationships among ESG Tilt across the relevant categories

within the social and governance performance remit (independent variable), Average Employee Satisfaction on Glassdoor.com (dependent variable), and the pro/con ratio on bigrams of the aggregated dimensions of perceived organizational justice (mediator).

For the Social Pillar Score, the results reveal a non-significant direct effect on perceived organizational justice (B = 0.021, p = 0.136). However, perceived organizational justice significantly influences employee satisfaction (B = 0.009, p < 0.001). The model accounts for approximately 11.8% of the variance in employee satisfaction (adjusted R^2 = 0.118), and the pathway from Social Pillar Score Tilt through organizational justice to employee satisfaction manifests an indirect effect within the range of 0.0002 to 0.0005. Focusing on the different sub-components of the Social Pillar, the Workforce Score Tilt shows a statistically significant prediction of perceived organizational justice (B = 0.056, p < 0.001), which underscores the robust nature of this relationship. The subsequent influence on employee satisfaction is equally significant, with a p-value of less than 0.001, thereby contributing to an adjusted R^2 of 0.120. The indirect effect of Workforce Score Tilt on employee satisfaction, mediated by perceived organizational justice, is quantified between 0.0005 and 0.0007. In the case of Human Rights Score Tilt, the analysis yields a negligible direct relationship. However, the pathway from perceived organizational justice to employee satisfaction remains significant, with an adjusted R^2 of 0.117. The derived indirect effect, ranging from 0.0000 to 0.0001, indicates a minimal impact of human rights considerations on employee satisfaction through perceived organizational justice as moderating variable. Community Score Tilt demonstrates a significant positive effect on perceived organizational justice (B = 0.041, p = 0.007), which, in turn, significantly predicts employee satisfaction (p < 0.001). This dimension accounts for an adjusted R^2 of 0.118 in employee satisfaction, with the mediation analysis revealing an indirect effect from 0.0004 to 0.0007. Finally, Product Responsibility Score Tilt significantly influences perceived organizational justice (B = 0.022, p = 0.025). This aspect of CSR

contributes to an adjusted R² of 0.107 for employee satisfaction, with the mediation pathway yielding an indirect effect estimated between 0.0002 and 0.0004.

For the governance remit, the Governance Pillar Score Tilt reveals a robust direct influence on perceived organizational justice, marked by a statistically significant beta coefficient of 0.079 ($p < 0.001$), indicating a strong underpinning of justice perceptions through governance practices. This dimension significantly predicts employee satisfaction through perceived organizational justice, with a notable p-value of less than 0.001 for the latter's effect on satisfaction. The adjusted R-square for employee satisfaction stands at 0.106, and the mediation analysis delineates an indirect effect ranging from 0.0007 to 0.0009, highlighting the role of governance in enhancing employee satisfaction via organizational justice. Focusing on the different sub-segments of governance, the Management Score Tilt shows a significant but more modest relationship with perceived organizational justice (B = 0.033, p = 0.002). The influence of perceived organizational justice on employee satisfaction remains significant ($p < 0.001$), with the model explaining 10.5% of the variance in employee satisfaction (adjusted R² = 0.105). The indirect effect through perceived organizational justice is quantified between 0.0003 and 0.0005. Next, the Shareholder Score Tilt demonstrates a significant positive effect on perceived organizational justice (B = 0.045, $p < 0.001$), signifying the importance of shareholder relations in shaping organizational justice perceptions. The effect of perceived organizational justice on employee satisfaction is consistently significant across models ($p < 0.001$), with this model explaining a similar variance in employee satisfaction (adjusted R² = 0.105). The mediation analysis reveals an indirect effect between 0.0004 and 0.0006, indicating the role of shareholder considerations in employee satisfaction through the lens of organizational justice. Lastly, the CSR Strategy Score Tilt significantly impacts perceived organizational justice (B = 0.072, $p < 0.001$). This dimension notably affects the perceptions of justice within the organization, which in turn, significantly predicts employee satisfaction

(p < 0.001), accounting for 12% of the variance in the latter (adjusted $R^2 = 0.120$). The indirect effect of CSR Strategy Score Tilt on employee satisfaction, mediated by perceived organizational justice, falls between 0.0006 and 0.0008.

In summary, the analysis substantiates the mediating role of perceived organizational justice in the relationship between ESG Tilt and employee satisfaction, particularly highlighting the significant indirect effects of Workforce Score Tilt and Community Score Tilt within the Social score remit. For scores within the Governance remit, the analysis underscores the substantial indirect impacts of Governance Pillar Score Tilt, Management Score Tilt, Shareholder Score Tilt, and CSR Strategy Score Tilt. Hypothesis H1d, which posits that the perceived organizational justice of employees partly mediates the relationship between ESG Tilt and Employee Satisfactions, is thus confirmed.

Figure 3.4: Mediation Analysis:
ESG Tilt, Perceived organizational justice and Employee Satisfaction

Social Pillar Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	68.343	0.000	0.879	2.461	0.000	0.031
Social Pillar Score Tilt	0.021	0.136	0.014			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.000			0.118	
Indirect Effect						
Social Pillar Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0002, .0005]

Workforce Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	66.029	0.000	0.796	2.478	0.000	0.029
Workforce Score Tilt	0.056	0.000	0.012			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.003			0.120	
Indirect Effect						
Workforce Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0005, .0007]

Human Rights Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	69.631	0.000	0.371	2.603	0.000	0.023
Human Rights Score Tilt	-0.001	0.875	0.008			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.000			0.117	
Indirect Effect						
Human Rights Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0000, .0001]

Community Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	66.322	0.000	1.247	2.372	0.000	0.038
Community Score Tilt	0.041	0.007	0.015			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.001			0.118	
Indirect Effect						
Community Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0004, .0007]

Product Responsibility Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	68.383	0.000	0.601	2.614	0.000	0.026
Product Responsibility Score Tilt	0.022	0.025	0.010			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.001			0.107	
Indirect Effect						
Product Responsibility Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0002, .0004]

Governance Pillar Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	64.902	0.000	0.847	2.630	0.000	0.030
Governance Pillar Score Tilt	0.079	0.000	0.014			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.005			0.106	
Indirect Effect						
Governance Pillar Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0007, .0009]

Management Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	67.578	0.000	0.714	2.675	0.000	0.028
Management Score Tilt	0.033	0.002	0.011			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.001			0.105	
Indirect Effect						
Management Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0003, .0005]

Shareholder Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	66.960	0.000	0.630	2.664	0.000	0.026
Shareholder Score Tilt	0.045	0.000	0.010			
Perceived Org. Justice				0.009	0.000	0.000
R2adj.		0.003			0.105	
Indirect Effect						
Shareholder Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0004, .0006]

CSR Strategy Score Tilt: Indirect Effects on Employee Satisfaction

	Perceived Org. Justice			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	66.001	0.000	0.482	2.579	0.000	0.024
CSR Strategy Score Tilt	0.072	0.000	0.008			
Perceived Org. Justice				0.008	0.000	0.000
R2adj.		0.012			0.120	
Indirect Effect						
CSR Strategy Score Tilt → Perceived Org. Justice → Empl. Satisfaction						[.0006, .0008]

3.4.2. Impact of ESG Momentum on Employee Satisfaction

Regression Analyses for ESG Momentum, Employee Expectancy, and Glassdoor.com Employee Ratings

To test for Hypothesis H2a, we first investigate the relationship between ESG Momentum and Employee Expectancy. The corresponding regression model shows a significant constant (coefficient = 40.567, p-value < 0.000), suggesting a base level of expectancy among employees. For the independent variables, it is noteworthy that the Social

Pillar Score, Workforce Score, Human Rights Score, and others show varied influences on employee expectancy, albeit many of these influences are not statistically significant in this model. For instance, the Social Pillar Score exhibits a negative coefficient (-0.172) but with a high p-value (0.788), indicating that while there appears to be a negative directionality in its relationship with employee expectancy, this relationship is not statistically robust. Similar observations apply to other scores like the Human Rights Score, Community Score, and Product Responsibility Score, where the relationships with employee expectancy either do not achieve statistical significance or display coefficients suggesting complex, not straightforward, effects. The control variables, including Employee Number and Capex as % of Sales, show a small but significant impact, indicating that organizational size and investment in capital expenditures shape employee expectancy. Notably, the Operating Profit Margin stands out with a significant positive coefficient (0.268, p-value = 0.002), illustrating a strong and positive relationship between the company's financial performance and expectancy, underscoring the importance of profitability as a key driver of employee expectations. The statistical measures, including an F-value of 2.613 and an R-Square of 0.017 (with an Adjusted R-Square of 0.011), indicate that while the model has identified certain significant relationships, the overall variance in employee expectancy explained by these variables is relatively modest. Hypothesis H2a, which states a positive relationship between ESG Momentum and employee expectancy, is hence not confirmed.

To further test the relationship between employee expectancy and satisfaction in the context of Hypothesis H2b, the model detects a positive constant (coefficient = 3.148) with a p-value < 0.000. The key independent variable, employee expectancy, is significantly associated with employee satisfaction (coefficient = 0.001, p-value < 0.000), with the positive coefficient indicating that higher expectancy levels contribute positively to satisfaction levels. Among the control variables, Turnover 12 Months Trailing and Capex as % of Sales both show

a significant relationship with employee satisfaction (p-values of 0.001 and 0.222, respectively), albeit with small coefficients. However, the significance of these relationships varies, with some control variables like Employee 1yr Growth and Leverage as % of Capital showing less direct impact on satisfaction levels within this model. The statistical robustness of Model 2 is highlighted by an F-value of 12.728, indicating the collective significance of the variables in explaining variations in employee satisfaction. The R-Square value of 0.035, along with an Adjusted R-Square of 0.032. Hypothesis H2b, which posits a positive relationship between employee expectancy and satisfaction, can be confirmed.

Finally, to test for Hypothesis H2c and hence a direct correlation between ESG Momentum and Employee Satisfaction, analysis detects a constant term with a coefficient of 3.269 and a p-value < 0.000. Focusing on the independent variables related to Momentum, the analysis reveals varying degrees of impact on employee satisfaction. The Shareholders Score Momentum stands out with a positive coefficient (0.002, p-value = 0.004), suggesting that positive Momentum in shareholder relations and practices can significantly enhance employee satisfaction. Conversely, the Social Pillar Score Momentum and CSR Strategy Score Momentum display coefficients that suggest a more complex direct impact on satisfaction (coefficients of -0.003 and -0.001, respectively), with the former not reaching statistical significance (p-value = 0.565) and the latter having a marginal impact (p-value = 0.230). Among the control variables, Employee Number and Capex as % of Sales show significant relationships with employee satisfaction (p-values of 0.000), reinforcing the notion that organizational scale and investment in growth are crucial factors that employees consider when forming their satisfaction levels. The statistical indicators, including an F-Value of 7.593 and an R-Square of 0.021 (with an Adjusted R-Square of 0.018), point to the model's capacity to elucidate certain relationships between Momentum and employee satisfaction, while the

modest explanatory power prevails. This lets us partly confirm Hypothesis H2c, which states that ESG Momentum has a direct positive effect on Employee Satisfaction.

Mediation Analyses for ESG Momentum, Employee Expectancy, and Glassdoor.com Employee Ratings

The further SPSS PROCESS analysis explored the potential mediating role of employee expectancy (mediator) in the relationship between ESG Momentum (independent variable) and Employee Satisfaction (dependent variable). Figure 5 summarizes the results of the mediation analyses conducted.

The moderation analysis for Social Pillar Score Momentum exhibits a marginally significant direct influence on employee expectancy with a beta of -0.274 and a p-value of 0.072. Notably, employee expectancy has a significant, albeit small, positive effect on employee satisfaction ($p < 0.001$). The adjusted R-square for employee satisfaction is 0.023, indicating modest explanatory power. The indirect effect, ranging from -0.0008 to 0.0000, suggests a potential decrease or null effect in employee satisfaction via expectancy. Focusing on the different sub-sections of the Social score remit, the Workforce Score Momentum, conversely, does not significantly predict employee expectancy, denoted by a p-value of 0.451. Despite this, the relationship between employee expectancy and satisfaction remains robust ($p < 0.001$), with an adjusted R-square of 0.026 for satisfaction. The analysis indicates a slight indirect positive effect on employee satisfaction, within a range of 0.0001 to 0.0004, hinting at subtle influences of workforce changes on overall satisfaction levels. In examining the Human Rights Score Momentum, we find a non-significant effect on employee expectancy ($p = 0.488$), paralleling a trend where human rights momentum may not straightforwardly impact employee anticipation. The pathway from expectancy to satisfaction continues to be significant ($p < 0.001$), though with a lower adjusted R-square of 0.022 for satisfaction. The estimated indirect

effect ranges from -0.0003 to 0.0001. Furthermore, the Community Score Momentum reveals a non-significant effect on employee expectancy (p = 0.183), suggesting that community engagement and performance changes may not significantly alter employee expectations. The link between expectancy and satisfaction remains consistently significant across models, with an adjusted R-square of 0.017 for satisfaction. The indirect effect oscillates between -0.0005 and 0.0001, suggesting a minor influence of community momentum on satisfaction. Lastly, the Product Responsibility Score Momentum demonstrates a significant negative impact on employee expectancy (p = 0.009), indicating that increased Momentum in product responsibility can lead to diminished employee expectations. This relationship underscores a potentially paradoxical reaction where intensified efforts in product responsibility may not align with employee anticipations. The effect on employee satisfaction via expectancy is significant, with an indirect effect ranging from -0.0006 to -0.0001.

For Governance Pillar Score Momentum, the direct impact on employee expectancy is statistically negligible (B = 0.018, p = 0.824). Nonetheless, the link between employee expectancy and satisfaction is maintained across models, signifying a consistent albeit small effect on satisfaction (p < 0.001), with an adjusted R-square of 0.016. The indirect effect spans from 0.0000 to 0.0002, subtly hinting at the potential, albeit limited, influence of governance momentum on employee satisfaction. Breaking down the different sub-sections of governance, Management Score Momentum also shows no significant predictive power on employee expectancy (B = 0.030, p = 0.599), reflecting a possible disconnection between management momentum and employee anticipatory judgments. Despite this, the pathway from expectancy to satisfaction remains statistically significant, affirming the influence of expectancy on satisfaction (p < 0.001). The model suggests a marginal indirect effect, ranging from 0.0000 to 0.0002, pointing to the minimal impact management momentum may have on enhancing employee satisfaction through expectancy. Shareholder Score Momentum also reveals a non-

significant effect on employee expectancy (B = -0.062, p = 0.434), suggesting that changes in shareholder-related activities do not markedly alter employee expectations. The relationship between expectancy and satisfaction is again confirmed (p < 0.001), with an adjusted R-square of 0.019 for satisfaction. The mediation analysis yields an indirect effect between -0.0003 and 0.0001. Finally, CSR Strategy Score Momentum shows a non-significant effect on employee expectancy (B = -0.071, p = 0.369), highlighting a potential misalignment between strategic CSR momentum and employee expectations. Despite this, the significant correlation between expectancy and satisfaction persists across analyses (p < 0.001), with an adjusted R-square of 0.016. The estimated indirect effect ranges from -0.0003 to 0.0001, suggesting a minimal influence of CSR strategy momentum on satisfaction, mediated by expectancy.

In essence, the analysis accentuates that while certain dimensions within the Social score ambit, particularly Social Pillar Score Momentum and Product Responsibility Score Momentum, exhibit direct effects that might suggest potential decreases or nuanced influences on employee satisfaction, others, like Workforce Score Momentum, offer a slight positive indirect impact. Within the Governance framework, despite the generally non-significant direct impacts on employee expectancy, the analysis subtly indicates the potential for minimal yet discernible indirect effects on employee satisfaction. Hypothesis H2d, which states that Employee Expectancy partly mediates the relationship between ESG Momentum and Employee Satisfaction, is hence partly confirmed.

Figure 3.5: Mediation Analysis: ESG Momentum and Employee Satisfaction

Social Pillar Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	45.147	0.000	0.902	3.221	0.000	0.013
Social Pillar Score Momentum	-0.274	0.072	0.152			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.002			0.023	

Indirect Effect

Social Pillar Score Momentum → Employee Expectancy → Empl. Satisfaction	[-.0008, .0000]

Workforce Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	44.701	0.000	0.881	3.227	0.000	0.013
Workforce Score Momentum	0.080	0.451	0.106			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.000			0.026	

Indirect Effect

Workforce Score Momentum → Employee Expectancy → Empl. Satisfaction	[.0001, .0004]

Human Rights Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	44.907	0.000	0.900	3.222	0.000	0.013
Human Rights Score Momentum	-0.047	0.488	0.068			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.000			0.022	

Indirect Effect

Human Rights Score Momentum → Employee Expectancy → Empl. Satisfaction	[-.0003, .0001]

Community Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	44.850	0.000	0.879	3.229	0.000	0.013
Community Score Momentum	-0.148	0.183	0.111			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.001			0.017	

Indirect Effect

Community Score Momentum → Employee Expectancy → Empl. Satisfaction	[-.0005, .0001]

Product Responsibility Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	45.077	0.000	0.883	3.232	0.000	0.013
Product Responsibility Score Momentur	-0.232	0.009	0.088			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.003			0.016	
Indirect Effect						
Product Responsibility Score Momentum → Employee Expectancy → Empl. Satisfaction						[-.0006, -.0001]

Governance Pillar Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	44.742	0.000	0.883	3.230	0.000	0.013
Governance Pillar Score Momentum	0.018	0.824	0.082			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.000			0.016	
Indirect Effect						
Governance Pillar Score Momentum → Employee Expectancy → Empl. Satisfaction						[.0000, .0002]

Management Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	44.715	0.000	0.882	3.230	0.000	0.013
Management Score Momentum	0.030	0.599	0.057			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.000			0.016	
Indirect Effect						
Management Score Momentum → Employee Expectancy → Empl. Satisfaction						[.0000, .0002]

Shareholder Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	44.746	0.000	0.877	3.230	0.000	0.013
Shareholder Score Momentum	-0.062	0.434	0.080			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.000			0.019	
Indirect Effect						
Shareholder Score Momentum → Employee Expectancy → Empl. Satisfaction						[-.0003, .0001]

CSR Strategy Score Momentum: Indirect Effects on Employee Satisfaction

	Employee Expectancy			Employee Satisfaction		
	B	p	SE	B	p	SE
Intercept	44.865	0.000	0.884	3.230	0.000	0.013
CSR Strategy Score Momentum	-0.071	0.369	0.079			
Employee Expectancy				0.001	0.000	0.000
R2adj.		0.000			0.016	
Indirect Effect						
CSR Strategy Score Momentum → Employee Expectancy → Empl. Satisfaction						[-.0003, .0001]

3.5. Discussion

This study examined the effects of ESG Tilt and Momentum on employee satisfaction and possible mediating factors, addressing a gap in current literature by disentangling the stakeholder impact of static and dynamic ESG performance implications. Concerning ESG Tilt, our findings reveal a robust positive influence on employee satisfaction across the observed categories within the Social and Governance domains. The analysis also indicates that perceived organizational justice serves as a significant mediating factor, suggesting that higher levels of organizational justice, characterized by clear processes, equitable distribution, attention to interpersonal elements, and greater informational transparency, contribute to perceived fairness and job satisfaction. The correlation between ESG Tilt and employee satisfaction may mirror employees' acknowledgement of just resource allocation, fair decision-making, and respectful interpersonal interactions in firms exhibiting ESG advancements. Viewed through the lens of Organizational Justice Theory, such enhancements in ESG practices are likely to bolster employees' sense of fairness within the organization, potentially elevating job satisfaction—especially when these enhancements align with the values employees hold in high regard and when they perceive their role as contributory to the firm's ESG objectives. Hence, our initial hypothesis is substantiated: ESG Tilt correlates positively with average Glassdoor rating levels and inversely with rating variance. The regression results between organizational justice dimensions and employee satisfaction, with nearly 19% of the

variance in employee satisfaction explained by the four organizational justice dimensions, further underscores the critical role of justice in the workplace.

According to the Expectancy Theory, motivation is driven by the perceived likelihood of effort leading to performance (expectancy), performance leading to outcomes (instrumentality), and the value placed on these outcomes (valence). When applied to ESG Momentum, this suggests that employees continually reassess the value and impact of their contributions to the company's evolving ESG performance. While we observe indications that positive ESG Momentum may align with higher employee satisfaction in some Social and Governance areas, our data only partially supports the hypothesis that ESG Momentum in general and the Expectancy Theory as a mediating factor are determinants of employee satisfaction levels. The lack of a pronounced correlation between ESG Momentum and expectancy theory bigrams suggests that the relationship between changes in ESG performance and employee perceptions may not be linear or direct. This may reflect the versatile ways in which employees interpret their role in their company's ESG efforts. This outcome invites further investigation into how companies can effectively leverage ESG initiatives to enhance employee satisfaction, considering the potential complexities of individual employee motivations.

The results advance existing knowledge by detailing mediating variables that disentangle the relationship between the absolute sustainability levels within organizations and employee satisfaction levels. They furthermore distinguish between possible impacts of both the absolute levels and dynamics change on sustainability levels based on empirical data, hence adding to the discussion on perceptions of changing sustainability levels within organizations.

The results robustly support the hypothesis that perceived organizational justice serves as a mediating variable between ESG Tilt and Employee Satisfaction. Conversely, the

assumption that Employee Expectancy acts as a catalyst between ESG Momentum and Employee Satisfaction could not be fully substantiated by the available data.

3.5.1. Dual Effect on Employee Satisfaction

On this basis, we can partially conclude two different levels of drivers for employee satisfaction: one related to ESG Tilt, rooted in perceptions of the organizational status quo, and the other rooted in ESG Momentum, focusing on personal expectations and anticipated rewards. The impact of the Tilt layer, as emphasized by organizational justice theory concerning the focus on the perceived justice and fairness within a firm, appears to be stronger due to the more pronounced correlation and significance levels observed as well as the proven link as a mediating factor through the natural language processing analysis. Conversely, the influence of the Momentum layer, grounded in expectancy theory, which centers on anticipated outcomes, seems weaker in this context, as evidenced by less distinct correlations and significance levels as well as the not fully demonstrated link as a mediating factor. However, it is important to recognize that while the organizational layer may exert a more immediate and noticeable impact on employee satisfaction, the effect of the individual layer could be subtler and may become more apparent over a longer time frame. This subtleness could be attributed to the complexity of individual expectations, beliefs, and values, which can vary greatly among employees. Therefore, while organizations might more readily address the tangible aspects of ESG Tilt and organizational justice, they should also focus on understanding and nurturing their employees' individual expectations and aspirations in relation to ESG Momentum.

Figure 3.6: ESG Tilt and Momentum Impact on Satisfaction

Primary ESG Tie	ESG Tilt	ESG Momentum
Anchored Theory	Organizational Justice Theory	Expectancy Theory
Stance	Reactive. Employees respond to perceived existing ESG levels, standards and norms.	Proactive. Employees actively shape further ESG levels and have expectations on future developments.
Orientation	Static. Assessment of status quo.	Temporal/Dynamic. Assessment of development over time.
Satisfaction Driver	Assessment of overall justice and fairness structures within organization and resulting impact on satisfaction levels	Individual expectation on future development of the firm and anticipated reward levels
Implication	Company-wide strategies that prioritize ESG practices will see a direct impact on employees' perceptions of fairness and equity, leading to heightened job satisfaction	Employees' personal belief in their contribution to the company's ESG efforts and the potential rewards from these contributions significantly shape their job satisfaction and motivation levels

The posited dualism of ESG Tilt and ESG Momentum can be further developed into a model for employee satisfaction. A similar approach was taken by Shoaib & Baruch (2019), who developed a model examining the dual impact of both organizational justice and expectancy as mediators on employee behavior in an organizational context. While their model specifically delineates the relationship between affection for incentives and the likelihood of deviant behavior, the interplay of theories underscores the complex dynamics where perceptions of justice and anticipated rewards converge, significantly shaping employee attitudes and behaviors. While deviant behavior reflects a negative outcome of misaligned incentives and perceived injustices, the specific case of employee satisfaction examines how well-aligned incentives and fair practices can foster a positive work environment and enhance job satisfaction. As posited by Organizational Justice Theory, employees' perceptions of fairness within the organization can influence their expectancy regarding the outcomes of their efforts (Colquitt, Conlon, et al., 2001). Simultaneously, the level of rewards that employees

expect and value, according to Expectancy Theory, could affect their perceptions of organizational fairness. Therefore, we posit that the interplay between both influences overall employee satisfaction and motivation, with ESG Tilt and perceived organizational justice having a stronger and more direct impact. The dynamic component of ESG Momentum and employee expectancy may not produce the immediate outcomes expected and are likely subject to more complex dynamics.

Figure 3.7: Schematic View of Dual Theory Impact
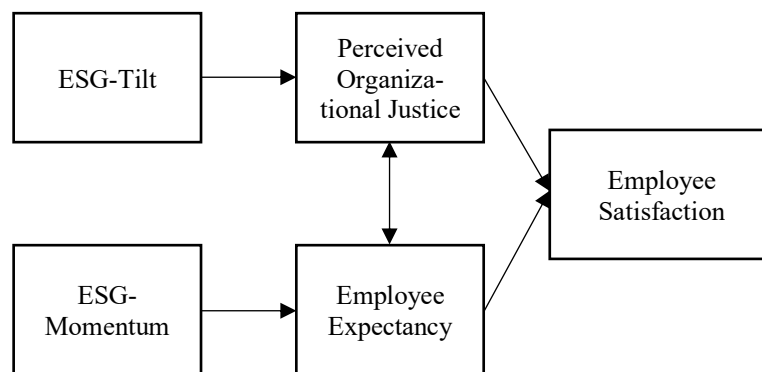
3.5.2. Practical Implications

The increasing transparency of internal company factors, driven by emerging media and platforms such as Glassdoor, can raise management awareness of best work practices. Our findings regarding ESG Tilt and Momentum highlight the need to balance robust sustainability performance with addressing employee concerns, as this balance can significantly influence employee satisfaction (Brammer et al., 2007; Glavas, 2016). This heightened transparency can also affect a firm's future recruitment prospects and its ability to attract top talent (Jiraporn et al., 2019), thus contributing to the Resource-Based View of the Firm (Barney, 1991; Peteraf, 1993). Understanding the subtle impacts of ESG Tilt and Momentum allows managers to develop strategies that address the broader and more specific factors influencing employee

satisfaction. For companies aiming to enhance or sustain high employee satisfaction levels, it is crucial to establish and effectively communicate clear ESG objectives, ensuring their integration into the company culture. This approach not only gives employees a more unified vision but also reinforces the organization's dedication to sustainable practices. Furthermore, effective communication of these shifts is vital for companies experiencing changes or improvements in their ESG scores. By showcasing progress and acknowledging employee contributions, firms can strengthen positive perceptions and expectations, fostering ongoing commitment and motivation. Therefore, managers should be mindful of their ESG decisions' impact on employee satisfaction, making informed choices that promote a positive work environment while focusing on sustainability goals.

3.5.3. Limitations

When discussing online review data such as Glassdoor.com, it is crucial to consider potential limitations and distortions. Our findings on ESG Tilt and Momentum should be interpreted with caution due to possible confounding factors, susceptibility to data manipulation through false accounts, the potential impact of corporate initiatives to improve ratings, such as overly positive reviews left by human resources, and the higher likelihood for positively and negatively biased employees to leave reviews (Böckerman & Ilmakunnas, 2012; Chatterji & Toffel, 2019). Furthermore, as Glassdoor ratings may not capture the full extent of employee satisfaction within a company, future research should consider additional data sources or methods to corroborate and extend our findings (Kim, 2017; Van Hoye & Lievens, 2009). To attain a more comprehensive understanding of employee satisfaction and its impact on ESG factors, future research should consider integrating qualitative analyses or cross-referencing with additional employee engagement metrics.

3.6. Conclusions

To the best of our knowledge, this was the first study to investigate the impact of both ESG Tilt and Momentum on employee satisfaction, considering Organizational Justice Theory and Expectancy Theory as mediating factors. Utilizing a comprehensive dataset from Glassdoor.com, we could directly assess employees' satisfaction with their employers and corporate roles in both a static and dynamic context. Our findings reveal that ESG with its Social and Governance categories can have an impact on employee satisfaction ratings, with ESG Tilt generally having a positive effect on overall satisfaction levels assigned by employees. This suggests that companies with strong ESG performance are more likely to have consistent employee satisfaction levels across the board. In contrast, ESG Momentum, which captures the changes in ESG scores over different periods, exhibited a more complex relationship with employee satisfaction, as no significant relationship could be measured. We further developed the findings on the dualism of ESG Tilt and ESG Momentum into an employee satisfaction model. The results call for a deeper understanding of the underlying factors driving these relationships and the potential mechanisms that link ESG performance to employee outcomes. This study also offers practical implications for companies looking to improve their ESG strategies, demonstrating that high ESG performance levels can positively influence employee satisfaction via perceived organizational justice. However, the mere changes in ESG performance may not produce the immediate outcomes expected. This distinction between the static and dynamic elements of ESG performance impacts highlights the need for ongoing evaluation and adjustment of ESG strategies to maintain and enhance their effectiveness in improving employee satisfaction.

3.7. Appendix

Table 3.1: Variable Description

Variable Description

Dependent Variables

Employee Rating	Glassdoor.com 5-point-scale rating if the employee is overall satisfied with the company

Independent Variables

Social Pillar Score Tilt	Current level of the Social Pillar Score, reflecting the weighted rating of a company based on disclosed social information.
Workforce Score Tilt	Current level of the Workforce Score, indicating company effectiveness in job satisfaction and employee development.
Human Rights Score Tilt	Current level of the Human Rights Score, assessing a company's adherence to fundamental human rights conventions.
Community Score Tilt	Current level of the Community Score, evaluating a company's commitment to good citizenship and ethical practices.
Product Responsibility Score Tilt	Current level of the Product Responsibility Score, reflecting the company's ability to ensure customer safety and product integrity.
Governance Pillar Score Tilt	Current level of the Governance Pillar Score, derived from the weighted rating of reported governance data.
Management Score Tilt	Current level of the Management Score, measuring adherence to corporate governance best practices.
Shareholders Score Tilt	Current level of the Shareholders Score, indicating effectiveness in equal shareholder treatment and anti-takeover measures.
CSR Strategy Score Tilt	Current level of the CSR Strategy Score, reflecting the integration of economic, social, and environmental decisions.
Social Pillar Score Momentum	12-month-change of the Social Pillar Score, reflecting the weighted rating of a company based on disclosed social information.
Workforce Score Momentum	12-month-change of the Workforce Score, indicating company effectiveness in job satisfaction and employee development.
Human Rights Score Momentum	12-month-change of the Human Rights Score, assessing a company's adherence to fundamental human rights conventions.
Community Score Momentum	12-month-change of the Community Score, evaluating a company's commitment to good citizenship and ethical practices.
Product Responsibility Score Momentum	12-month-change of the Product Responsibility Score, reflecting the company's ability to ensure customer safety and product integrity.
Governance Pillar Score Momentum	12-month-change of the Governance Pillar Score, derived from the weighted rating of reported governance data.
Management Score Momentum	12-month-change of the Management Score, measuring adherence to corporate governance best practices.
Shareholders Score Momentum	12-month-change of the Shareholders Score, indicating effectiveness in equal shareholder treatment and anti-takeover measures.
CSR Strategy Score Momentum	12-month-change of the CSR Strategy Score, reflecting the integration of economic, social, and environmental decisions.

Mediating Variables

Perceived Organizational Justice	Natural Language Processing to evaluate the balance of positive versus negative language concerning perceived fairness within the organization, as mentioned in employee reviews.
Employee Expectancy	Natural Language Processing to assess the presence of positive versus negative language relating to employee expectations and beliefs about the organization, as reflected in employee reviews.

Control Variables

Employee No.	Number of employees within the organization
Employee 1yr Growth	Percentage increase or decrease in the number of employees over the past year.
Turnover 12 Months Trailing	Total revenue generated by the organization in the past 12 months.
Operating Profit Margin	Ratio of operating profit to total revenue, indicating the efficiency of the company's core business without considering the effect of interest and taxes.
Leverage as % of Capital	Proportion of the company's capital structure that is financed by debt, indicating financial risk.
Capex as % of Sales	
	Ratio of capital expenditures to total sales, reflecting the company's investments relative to its revenue.

Table 3.2: LSEG ASSET4 Data Categories

	Social Pillar					Governance Pillar			
Score Indicators	**Human rights**	**Product responsibility**	**Work-force**	**Commu-nity**	**Total Social**	**Manage-ment**	**Share-holders**	**CSR Strategy**	**Total Gover-nance**
Indicators in Scoring (No.)	29	8	14	12	63	34	12	8	54
Industry Group Weights	**Human rights**	**Product responsibility**	**Work-force**	**Commu-nity**	**Total Social**	**Manage-ment**	**Share-holders**	**CSR Strategy**	**Total Gover-nance**
Aerospace and defense	34%	16%	25%	25%	100%	67%	20%	13%	100%
Automobiles and auto parts	35%	21%	24%	20%	100%	67%	20%	13%	100%
Banking services	19%	18%	39%	24%	100%	67%	20%	13%	100%
Beverages	33%	27%	23%	18%	100%	67%	20%	13%	100%
Biotechnology and medical research	7%	34%	22%	37%	100%	67%	20%	13%	100%
Chemicals	39%	18%	23%	20%	100%	67%	20%	13%	100%
Coal	22%	7%	35%	36%	100%	67%	20%	13%	100%
Collective investments	9%	21%	25%	45%	100%	67%	20%	13%	100%
Communications and networking	13%	36%	17%	34%	100%	67%	20%	13%	100%
Computers, phones and household electronics	37%	22%	21%	19%	100%	67%	20%	13%	100%
Construction and engineering	34%	13%	29%	24%	100%	67%	20%	13%	100%
Construction materials	33%	12%	32%	23%	100%	67%	20%	13%	100%
Containers and packaging	39%	18%	23%	20%	100%	67%	20%	13%	100%
Diversified industrial goods wholesalers	43%	5%	29%	24%	100%	67%	20%	13%	100%
Diversified retail	13%	28%	26%	33%	100%	67%	20%	13%	100%
Electric utilities and IPPs	21%	15%	38%	26%	100%	67%	20%	13%	100%
Electronic equipment and parts	31%	12%	26%	31%	100%	67%	20%	13%	100%
Food and drug retailing	21%	32%	26%	21%	100%	67%	20%	13%	100%
Food and tobacco	27%	30%	24%	19%	100%	67%	20%	13%	100%
Freight and logistics services	21%	21%	33%	26%	100%	67%	20%	13%	100%
Healthcare equipment and supplies	25%	30%	19%	25%	100%	67%	20%	13%	100%
Healthcare providers and services	17%	33%	22%	28%	100%	67%	20%	13%	100%
Homebuilding and construction supplies	34%	21%	23%	21%	100%	67%	20%	13%	100%
Hotels and entertainment services	18%	40%	20%	22%	100%	67%	20%	13%	100%
Household goods	31%	24%	23%	22%	100%	67%	20%	13%	100%
Industrial conglomerates	37%	19%	24%	20%	100%	67%	20%	13%	100%
Insurance	17%	23%	31%	29%	100%	67%	20%	13%	100%
Investment banking and investment services	8%	21%	32%	39%	100%	67%	20%	13%	100%
Investment holding companies	20%	10%	22%	49%	100%	67%	20%	13%	100%
Leisure products	19%	43%	13%	24%	100%	67%	20%	13%	100%
Machinery, tools, heavy vehicles, trains and ships	31%	24%	20%	25%	100%	67%	20%	13%	100%
Media and publishing	20%	30%	24%	25%	100%	67%	20%	13%	100%
Metals and mining	41%	9%	29%	20%	100%	67%	20%	13%	100%
Multiline utilities	28%	19%	30%	23%	100%	67%	20%	13%	100%
Natural gas utilities	22%	22%	35%	22%	100%	67%	20%	13%	100%
Office equipment	37%	26%	19%	18%	100%	67%	20%	13%	100%
Oil and gas	37%	15%	29%	19%	100%	67%	20%	13%	100%
Oil and gas related equipment and services	38%	11%	28%	23%	100%	67%	20%	13%	100%
Paper and forest products	32%	5%	37%	26%	100%	67%	20%	13%	100%
Passenger transportation services	23%	20%	35%	23%	100%	67%	20%	13%	100%
Personal and household products and services	27%	33%	22%	17%	100%	67%	20%	13%	100%
Pharmaceuticals	31%	21%	26%	22%	100%	67%	20%	13%	100%
Professional and commercial services	31%	19%	23%	26%	100%	67%	20%	13%	100%
Real estate operations	12%	12%	45%	30%	100%	67%	20%	13%	100%
Renewable energy	8%	25%	25%	42%	100%	67%	20%	13%	100%
Residential and commercial REITs	7%	24%	34%	36%	100%	67%	20%	13%	100%
Semiconductors and semiconductor equipment	36%	20%	23%	20%	100%	67%	20%	13%	100%
Software and IT services	15%	28%	17%	39%	100%	67%	20%	13%	100%
Specialty retailers	18%	28%	24%	30%	100%	67%	20%	13%	100%
Telecommunications services	27%	31%	26%	17%	100%	67%	20%	13%	100%
Textiles and apparel	29%	25%	28%	18%	100%	67%	20%	13%	100%
Transport infrastructure	26%	13%	38%	22%	100%	67%	20%	13%	100%
Uranium	8%	26%	26%	40%	100%	67%	20%	13%	100%
Water and related utilities	17%	13%	43%	28%	100%	67%	20%	13%	100%

Source: LSEG (formerly Refinitiv); Note: indicative and subject to score methodology revisions by LSEG

Table 3.3: Natural Language Processing Bigrams

Employees' Perceived Organizational Justice				Employees' Expectancy
Distributive Justice	**Procedural Justice**	**Interpersonal Justice**	**Informational Justice**	**Expectancy**
401k plan	benefits package	atmosphere great	advancement opportunities	advancement opportunities
average pay	career growth	coworkers great	career advancement	career growth
base pay	career opportunities	friendly atmosphere	career development	career opportunities
base salary	competitive pay	friendly coworkers	career growth	competitive pay
bonus structure	employee discount	friendly environment	development opportunities	cutting edge
compensation benefits	flexible hours	friendly helpful	excellent training	development opportunities
compensation good	good benefits	friendly people	good training	excellent training
competitive pay	good company	friendly staff	great training	expansion plans
competitive salary	good management	friendly workers	growth opportunities	global expansion
decent pay	good pay	fun environment	growth potential	great opportunities
decent salary	good work	fun people	learning experience	great training
fair pay	great benefits	fun place	learning new	growth company
good 401k	great company	fun work	learning opportunities	growth opportunities
good bonus	great place	good atmosphere	new skills	innovative environment
good compensation	great training	good people	opportunities learn	investment potential
good salary	great work	great coworkers	opportunity advancement	leadership team
great pay	health benefits	great people	opportunity growth	learning experience
pay average	health insurance	nice coworkers	opportunity learn	learning opportunities
pay competitive	job security	nice people	opportunity work	market growth
pay good	learning opportunities	people good	professional development	opportunities advancement
pay great	team work	people great	training development	strategic vision
pension plan	work culture	people nice	training good	sustainable practices
salary benefits	work environment	positive work	training great	talent development
salary good	work home	team atmosphere	training opportunities	technological advancement
salary great	work-life balance	team environment	training program	training program

Employees' Perceived Organizational Justice				Employees' Expectancy
Distributive Justice	**Procedural Justice**	**Interpersonal Justice**	**Informational Justice**	**Expectancy**
extremely low	bad management	company management	decision making	bad management
low compared	constant change	employee morale	high turnover	difficult work
low morale	health insurance	employees work	hour days	hard work
low pay	high pressure	feel like	hours cut	heavy workload
low salaries	high stress	felt like	hours day	high stress
low salary	high turnover	just number	hours hard	high turnover
low wages	job security	lack respect	hours long	lack communication
lower pay	lack communication	make feel	hours time	lack training
minimum wage	lack training	make sure	hours week	limited opportunities
pay average	long hours	management employees	hours work	long hours
pay competitive	low pay	management needs	hours working	long working
pay high	micro management	management poor	job security	low morale
pay horrible	minimum wage	management work	long hours	low pay
pay hours	no career path	micro manage	long term	low salary
pay increase	no growth opportunities	micro management	long time	management does not
pay little	office politics	passive aggressive	long work	micro management
pay low	poor communication	people don	red tape	minimal wage
pay management	poor management	people management	short staffed	poor communication
pay poor	poor work	respect employees	time employees	poor leadership
pay raises	red tape	rude customers	turnover rate	poor management
pay terrible	short staffed	team leaders	work overtime	red tape
poor pay	terrible management	treat employees	working company	slow growth
salary competitive	unrealistic expectations	treat like	working environment	stressful work
salary increases	upward mobility	treated like	working hours	turnover rate
salary low	work load	value employees	working time	unrealistic expectations

Table 3.4: Regression Analysis of Social and Govern. Tilt on Perceived Org. Justice

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.215[a]	0.046	0.044	0.215

a. Predictors: (Constant), Social Pillar Score, Workforce Score, Human Rights Score, Community Score, Product Responsibility Score, Management Score, Shareholders Score, CSR Strategy Score, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	145143.026	14	10367.359	22.479	<.001[b]
	Residual	2995983.143	6496	461.204		
	Total	3141126.169	6510			

a. Dependent Variable: Perceived Organizational Justice

b. Predictors: (Constant), Social Pillar Score, Workforce Score, Human Rights Score, Community Score, Product Responsibility Score, Management Score, Shareholders Score, CSR Strategy Score, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	64.492	1.626		39.654	0.000
	Social Pillar Score Tilt	-0.337	0.062	-0.290	-5.430	0.000
	Workforce Score Tilt	0.127	0.026	0.131	4.836	0.000
	Human Rights Score Tilt	0.046	0.016	0.073	2.872	0.004
	Community Score Tilt	0.069	0.026	0.055	2.630	0.009
	Product Responsibility Score Tilt	0.088	0.018	0.109	4.801	0.000
	Management Score Tilt	-0.005	0.011	-0.005	-0.437	0.662
	Shareholders Score Tilt	0.026	0.010	0.032	2.447	0.014
	CSR Strategy Score Tilt	0.071	0.012	0.108	5.884	0.000
	Employee No.	0.000	0.000	-0.103	-5.769	0.000
	Employee 1yr Growth	-0.072	0.017	-0.052	-4.210	0.000
	Turnover 12 Months Trailing	0.000	0.000	0.002	0.124	0.901
	Operating Profit Margin	0.062	0.025	0.031	2.526	0.012
	Leverage as % of Capital	-0.017	0.011	-0.019	-1.551	0.121
	Capex as % of Sales	0.119	0.016	0.093	7.418	0.000

a. Dependent Variable: Perceived Organizational Justice

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Governance Pillar Score Tilt	-96.359[b]	-1.369	0.171	-0.017	0.000

a. Dependent Variable: Perceived Organizational Justice

b. Predictors in the Model: (Constant), Social Pillar Score, Workforce Score, Human Rights Score, Community Score, Product Responsibility Score, Management Score, Shareholders Score, CSR Strategy Score, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Table 3.5: Regression Analysis of Social and Govern. Momentum on Employee Expectancy

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.131[a]	0.017	0.011	0.409

a. Predictors: (Constant), Social Pillar Score Momentum, Workforce Score Momentum, Human Rights Score Momentum, Community Score Momentum, Product Responsibility Score Momentum, Management Score Momentum, Shareholders Score Momentum, CSR Strategy Score Momentum, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61057.620	14	4361.259	2.613	<.001[b]
	Residual	3500174.284	2097	1669.134		
	Total	3561231.905	2111			

a. Dependent Variable: Employee Expectancy

b. Predictors: (Constant), Social Pillar Score Momentum, Workforce Score Momentum, Human Rights Score Momentum, Community Score Momentum, Product Responsibility Score Momentum, Management Score Momentum, Shareholders Score Momentum, CSR Strategy Score Momentum, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	40.567	2.543		15.954	0.000
	Social Pillar Score Momentum	-0.172	0.639	-0.024	-0.269	0.788
	Workforce Score Momentum	0.136	0.208	0.027	0.657	0.512
	Human Rights Score Momentum	0.011	0.155	0.003	0.070	0.944
	Community Score Momentum	-0.046	0.202	-0.009	-0.227	0.820
	Product Responsibility Score Momentum	-0.214	0.189	-0.052	-1.133	0.257
	Management Score Momentum	-0.008	0.059	-0.003	-0.138	0.890
	Shareholders Score Momentum	-0.014	0.083	-0.004	-0.171	0.864
	CSR Strategy Score Momentum	-0.053	0.082	-0.014	-0.653	0.514
	Employee No.	0.000	0.000	-0.129	-3.376	0.001
	Employee 1yr Growth	0.013	0.068	0.004	0.197	0.844
	Turnover 12 Months Trailing	0.000	0.000	0.070	1.822	0.069
	Operating Profit Margin	0.268	0.087	0.068	3.070	0.002
	Leverage as % of Capital	0.007	0.037	0.004	0.178	0.859
	Capex as % of Sales	0.063	0.095	0.015	0.670	0.503

a. Dependent Variable: Employee Expectancy

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Governance Pillar Score Momentum	130.020[b]	2.010	0.045	0.044	0.000

a. Dependent Variable: Employee Expectancy

b. Predictors in the Model: (Constant), Social Pillar Score Momentum, Workforce Score Momentum, Human Rights Score Momentum, Community Score Momentum, Product Responsibility Score Momentum, Management Score Momentum, Shareholders Score Momentum, CSR Strategy Score Momentum, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Table 3.6: Regression Analysis of Perceived Org. Justice on Employee Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.329[a]	0.108	0.107	0.558

a. Predictors: (Constant), Perceived Organizational Justice, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	245.809	7	35.116	112.973	<.001[b]
	Residual	2021.337	6503	0.311		
	Total	2267.146	6510			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Perceived Organizational Justice, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.632	0.028		92.720	0.000
	Perceived Organizational Justice	0.008	0.000	0.316	26.644	0.000
	Employee No.	0.000	0.000	-0.050	-2.933	0.003
	Employee 1yr Growth	0.000	0.000	0.009	0.756	0.450
	Turnover 12 Months Trailing	0.000	0.000	0.067	3.944	0.000
	Operating Profit Margin	0.001	0.001	0.026	2.174	0.030
	Leverage as % of Capital	0.000	0.000	0.006	0.517	0.605
	Capex as % of Sales	0.001	0.000	0.042	3.571	0.000

a. Dependent Variable: Employee Satisfaction

Table 3.7: Regression Analysis of Employee Expectancy on Employee Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.186[a]	0.035	0.032	0.422

a. Predictors: (Constant), Employee Expectancy, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.833	7	2.262	12.728	<.001[b]
	Residual	442.494	2490	0.178		
	Total	458.327	2497			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Employee Expectancy, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.148	0.025		126.355	0.000
	Employee Expectancy	0.001	0.000	0.141	7.116	0.000
	Employee No.	0.000	0.000	-0.169	-4.682	0.000
	Employee 1yr Growth	0.000	0.001	0.011	0.566	0.572
	Turnover 12 Months Trailing	0.000	0.000	0.120	3.314	0.001
	Operating Profit Margin	0.001	0.001	0.025	1.227	0.220
	Leverage as % of Capital	0.001	0.000	0.038	1.916	0.055
	Capex as % of Sales	0.001	0.001	0.024	1.222	0.222

a. Dependent Variable: Employee Satisfaction

Table 3.8: Regression Analysis of Social and Governance Tilt on Employee Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.219[a]	0.048	0.046	0.619

a. Predictors: (Constant), Social Pillar Score, Workforce Score, Human Rights Score, Community Score, Product Responsibility Score, Governance Pillar Score, Shareholders Score, CSR Strategy Score, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	133.031	14	9.502	24.819	<.001[b]
	Residual	2643.232	6904	0.383		
	Total	2776.263	6918			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Social Pillar Score, Workforce Score, Human Rights Score, Community Score, Product Responsibility Score, Governance Pillar Score, Shareholders Score, CSR Strategy Score, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.932	0.045		65.781	0.000
	Social Pillar Score	-0.011	0.002	-0.329	-6.383	0.000
	Workforce Score	0.005	0.001	0.180	6.845	0.000
	Human Rights Score	0.004	0.000	0.193	7.926	0.000
	Community Score	0.005	0.001	0.137	6.819	0.000
	Product Responsibility Score	0.002	0.001	0.080	3.662	0.000
	Governance Pillar Score	-0.001	0.000	-0.028	-1.943	0.052
	Shareholders Score	0.000	0.000	-0.001	-0.040	0.968
	CSR Strategy Score	0.001	0.000	0.071	3.930	0.000
	Employee No.	0.000	0.000	-0.077	-4.422	0.000
	Employee 1yr Growth	0.000	0.000	0.000	-0.009	0.993
	Turnover 12 Months Trailing	0.000	0.000	0.023	1.307	0.191
	Operating Profit Margin	0.002	0.001	0.039	3.198	0.001
	Leverage as % of Capital	0.000	0.000	-0.006	-0.453	0.650
	Capex as % of Sales	0.003	0.000	0.086	7.109	0.000

a. Dependent Variable: Employee Satisfaction

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Management Score	-56.626[b]	-0.985	0.325	-0.012	0.000

a. Dependent Variable: Employee Satisfaction

b. Predictors in the Model: (Constant), Social Pillar Score, Workforce Score, Human Rights Score, Community Score, Product Responsibility Score, Governance Pillar Score, Shareholders Score, CSR Strategy Score, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Table 3.9: Regression Analysis of Social and Governance Tilt on Employee Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.144[a]	0.021	0.018	0.535

a. Predictors: (Constant), Social Pillar Score Momentum, Workforce Score Momentum, Human Rights Score Momentum, Community Score Momentum, Product Responsibility Score Momentum, Governance Pillar Score Momentum, Shareholders Score Momentum, CSR Strategy Score Momentum, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.392	14	2.171	7.593	<.001[b]
	Residual	1443.552	5049	0.286		
	Total	1473.944	5063			

a. Dependent Variable: Employee Satisfaction

b. Predictors: (Constant), Social Pillar Score Momentum, Workforce Score Momentum, Human Rights Score Momentum, Community Score Momentum, Product Responsibility Score Momentum, Governance Pillar Score Momentum, Shareholders Score Momentum, CSR Strategy Score Momentum, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.269	0.020		159.952	0.000
	Social Pillar Score Momentum	-0.003	0.005	-0.034	-0.575	0.565
	Workforce Score Momentum	0.003	0.002	0.048	1.739	0.082
	Human Rights Score Momentum	0.003	0.001	0.069	2.181	0.029
	Community Score Momentum	0.002	0.002	0.027	0.998	0.318
	Product Responsibility Score Momentum	0.000	0.001	-0.006	-0.197	0.844
	Governance Pillar Score Momentum	0.000	0.001	0.004	0.284	0.777
	Shareholders Score Momentum	0.002	0.001	0.040	2.845	0.004
	CSR Strategy Score Momentum	-0.001	0.001	-0.017	-1.200	0.230
	Employee No.	0.000	0.000	-0.094	-4.607	0.000
	Employee 1yr Growth	-0.001	0.001	-0.035	-2.440	0.015
	Turnover 12 Months Trailing	0.000	0.000	0.083	4.062	0.000
	Operating Profit Margin	0.001	0.001	0.027	1.871	0.061
	Leverage as % of Capital	0.000	0.000	-0.001	-0.103	0.918
	Capex as % of Sales	0.003	0.000	0.088	6.211	0.000

a. Dependent Variable: Employee Satisfaction

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics Tolerance
1	Governance Pillar Score Momentum	2.868[b]	0.069	0.945	0.001	0.000

a. Dependent Variable: Employee Satisfaction

b. Predictors in the Model: (Constant), Social Pillar Score Momentum, Workforce Score Momentum, Human Rights Score Momentum, Community Score Momentum, Product Responsibility Score Momentum, Governance Pillar Score Momentum, Shareholders Score Momentum, CSR Strategy Score Momentum, Employee No., Employee 1yr Growth, Turnover 12 Months Trailing, Operating Profit Margin, Leverage as % of Capital, Capex as % of Sales

Table 3.10: Mediating Role of Perceived organizational justice in the Relationship Between

Social Pillar Score Tilt and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Employee Employee Satisfactionaction
X: Social Pillar Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0181	0.0003	484.9080	2.2221	1	6765	0.1361

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	68.3431	0.8788	77.7724	0.0000	66.6205	70.0658
Social Pillar Score Tilt	0.0210	0.0141	1.4907	0.1361	-0.0066	0.0487

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3431	0.1177	0.3112	451.0913	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.4613	0.0306	80.3377	0.0000	2.4013	2.5214
Social Pillar Score Tilt	0.0035	0.0004	9.7603	0.0000	0.0028	0.0042
Perceived Organizational Justice	0.0087	0.0003	28.2248	0.0000	0.0081	0.0093

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0035	0.0004	9.7603	0.0000	0.0028	0.0042

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0002	0.0001	-0.0001	0.0005

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.11: Mediating Role of Perceived organizational justice in the Relationship Between

Workforce Score Tilt and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Employee Employee Satisfactionaction
X: Workforce Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0577	0.0033	483.4525	22.5951	1	6765	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	66.0291	0.7955	82.9987	0.0000	64.4696	67.5886
Workforce Score Tilt	0.0561	0.0118	4.7534	0.0000	0.0330	0.0793

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3458	0.1196	0.3105	459.4686	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.4778	0.0286	86.5064	0.0000	2.4216	2.5339
Workforce Score Tilt	0.0031	0.0003	10.5002	0.0000	0.0026	0.0037
Perceived Organizational Justice	0.0086	0.0003	27.7842	0.0000	0.0080	0.0092

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0031	0.0003	10.5002	0.0000	0.0026	0.0037

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0005	0.0001	0.0003	0.0007

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Employee Satisfactionaction

X: Human Resources Score Tilt

M: Perceived Organizational Justice

Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0019	0.0000	485.0655	0.0246	1	6765	0.8754

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	69.6312	0.3714	187.5074	0.0000	68.9032	70.3591
Human Resources Score Tilt	-0.0012	0.0077	-0.1568	0.8754	-0.0164	0.0140

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3420	0.1169	0.3114	447.8429	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.6025	0.0234	111.0985	0.0000	2.5565	2.6484
Human Resources Score Tilt	0.0019	0.0002	9.4578	0.0000	0.0015	0.0022
Perceived Organizational Justice	0.0088	0.0003	28.4123	0.0000	0.0081	0.0094

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0019	0.0002	9.4578	0.0000	0.0015	0.0022

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0000	0.0001	-0.0001	0.0001

Level of confidence for all confidence intervals in output: 95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.13: Mediating Role of Perceived organizational justice in the Relationship Between Community Score Tilt and Employee Satisfaction

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***************** PROCESS Procedure for SPSS Version 4.2 *****************
```
Y: Employee Employee Satisfactionaction
X: Community Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0326	0.0011	484.5509	7.2089	1	6765	0.0073

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	66.3219	1.2466	53.2039	0.0000	63.8783	68.7656
Community Score Tilt	0.0409	0.0152	2.6849	0.0073	0.0110	0.0708

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3428	0.1175	0.3112	450.4727	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.3717	0.0376	63.0340	0.0000	2.2980	2.4455
Community Score Tilt	0.0038	0.0004	9.7034	0.0000	0.0030	0.0045
Perceived Organizational Justice	0.0087	0.0003	28.0723	0.0000	0.0080	0.0093

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0038	0.0004	9.7034	0.0000	0.003	0.0045

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0004	0.0002	0.0000	0.0007

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.14: Mediating Role of Perceived organizational justice in the Relationship Between

Product Responsibility Score Tilt and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Employee Employee Satisfactionaction
X: Product Responsibility Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0273	0.0007	484.7059	5.0438	1	6765	0.0247

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	68.3834	0.6005	113.8683	0.0000	67.2062	69.5607
Product Responsibility Score Tilt	0.0219	0.0098	2.2458	0.0247	0.0028	0.0411

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3275	0.1072	0.3149	406.2012	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.6138	0.0261	99.9906	0.0000	2.5626	2.6651
Product Responsibility Score Tilt	0.0010	0.0002	3.8642	0.0001	0.0005	0.0015
Perceived Organizational Justice	0.0087	0.0003	28.1235	0.0000	0.0081	0.0093

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.001	0.0002	3.8642	0.0001	0.0005	0.0015

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0002	0.0001	0.0000	0.0004

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.15: Mediating Role of Perceived organizational justice in the Relationship Between

Governance Pillar Score Tilt and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Employee Employee Satisfactionaction
X: Governmental Pillar Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0707	0.0050	482.6404	34.0166	1	6765	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	64.9016	0.8472	76.6085	0.0000	63.2409	66.5624
Governmental Pillar Score Tilt	0.0787	0.0135	5.8324	0.0000	0.0523	0.1052

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3251	0.1057	0.3154	399.7237	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.6297	0.0296	88.8501	0.0000	2.5716	2.6877
Governmental Pillar Score Tilt	0.0006	0.0003	1.8279	0.0676	0.0000	0.0013
Perceived Organizational Justice	0.0087	0.0003	28.0154	0.0000	0.0081	0.0093

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0006	0.0003	1.8279	0.0676	0	0.0013

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0007	0.0001	0.0004	0.0009

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.16: Mediating Role of Perceived organizational justice in the Relationship Between Management Score Tilt and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Employee Employee Satisfactionaction
X: Management Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0370	0.0014	484.4047	9.2529	1	6765	0.0024

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	67.5783	0.7137	94.6935	0.0000	66.1793	68.9773
Management Score Tilt	0.0325	0.0107	3.0419	0.0024	0.0116	0.0534

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3245	0.1053	0.3155	398.0954	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.6750	0.0278	96.3072	0.0000	2.6206	2.7295
Management Score Tilt	-0.0002	0.0003	-0.6536	0.5134	-0.0007	0.0004
Perceived Organizational Justice	0.0088	0.0003	28.2142	0.0000	0.0081	0.0094

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-0.0002	0.0003	-0.6536	0.5134	-0.0007	0.0004

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0003	0.0001	0.0001	0.0005

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.17: Mediating Role of Perceived organizational justice in the Relationship Between

Shareholder Score Tilt and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ********************

Y: Employee Employee Satisfactionaction
X: Shareholder Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0560	0.0031	483.5481	21.2538	1	6765	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	66.9596	0.6302	106.2465	0.0000	65.7242	68.1951
Shareholder Score Tilt	0.0453	0.0098	4.6102	0.0000	0.0260	0.0646

OUTCOME VARIABLE: Employee Employee Satisfactionaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3244	0.1053	0.3156	397.8567	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.6644	0.0263	101.3059	0.0000	2.6129	2.7160
Shareholder Score Tilt	0.0000	0.0003	0.0065	0.9948	-0.0005	0.0005
Perceived Organizational Justice	0.0087	0.0003	28.1638	0.0000	0.0081	0.0094

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0	0.0003	0.0065	0.9948	-0.0005	0.0005

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0004	0.0001	0.0002	0.0006

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.18: Mediating Role of Perceived organizational justice in the Relationship Between

CSR Strategy Score Tilt and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Satisfaction
X: CSR Strategy Score Tilt
M: Perceived Organizational Justice
Sample Size: 6767

OUTCOME VARIABLE: Perceived Organizational Justice

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1080	0.0117	479.4043	79.9118	1	6765	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	66.0011	0.4818	136.9977	0.0000	65.0567	66.9455
CSR Strategy Score Tilt	0.0716	0.0080	8.9393	0.0000	0.0559	0.0874

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3468	0.1203	0.3103	462.4835	2	6764	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	2.5790	0.0238	108.3136	0.0000	2.5323	2.6257
CSR Strategy Score Tilt	0.0022	0.0002	10.7540	0.0000	0.0018	0.0026
Perceived Organizational Justice	0.0084	0.0003	27.1200	0.0000	0.0078	0.0090

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0022	0.0002	10.754	0.0000	0.0018	0.0026

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Perceived Organizational Justice	0.0006	0.0001	0.0005	0.0008

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.19: Mediating Role of Perceived organizational justice in the Relationship Between

Social Pillar Score Momentum and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Satisfaction
X: Social Pillar Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0383	0.0015	1689.1844	3.2357	1	2199	0.0722

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	45.1474	0.9015	50.0811	0.0000	43.3795	46.9152
Social Pillar Score Momentum	-0.2741	0.1524	-1.7988	0.0722	-0.5729	0.0247

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1499	0.0225	0.1661	25.2524	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2207	0.0131	246.2846	0.0000	3.1951	3.2464
Social Pillar Score Momentum	0.0058	0.0015	3.8142	0.0001	0.0028	0.0087
Employee Expectancy	0.0013	0.0002	6.1382	0.0000	0.0009	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0058	0.0015	3.8142	0.0001	0.0028	0.0087

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	-0.0004	0.0002	-0.0008	0.0000

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.20: Mediating Role of Perceived organizational justice in the Relationship Between

Workforce Score Momentum and Employee Satisfaction

***************** PROCESS Procedure for SPSS Version 4.2 *****************

Y: Employee Satisfaction
X: Workforce Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0161	0.0003	1691.2336	0.5674	1	2199	0.4514

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	44.7013	0.8806	50.7600	0.0000	42.9743	46.4282
Workforce Score Momentum	0.0801	0.1063	0.7533	0.4514	-0.1284	0.2886

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1611	0.0260	0.1655	29.2855	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2269	0.0128	251.3834	0.0000	3.2017	3.2521
Workforce Score Momentum	0.0050	0.0011	4.7418	0.0000	0.0029	0.0071
Employee Expectancy	0.0013	0.0002	5.9302	0.0000	0.0008	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.005	0.0011	4.7418	0	0.0029	0.0071

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	0.0001	0.0001	-0.0002	0.0004

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.21: Mediating Role of Perceived organizational justice in the Relationship Between

Human Resources Score Momentum and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Satisfaction
X: Human Resources Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0148	0.0002	1691.2990	0.4823	1	2199	0.4875

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	44.9065	0.9000	49.8967	0.0000	43.1415	46.6714
Human Resources Score Momentu	-0.0470	0.0677	-0.6945	0.4875	-0.1799	0.0858

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1477	0.0218	0.1662	24.5229	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2223	0.0130	247.3765	0.0000	3.1968	3.2479
Human Resources Score Momentu	0.0024	0.0007	3.6211	0.0003	0.0011	0.0037
Employee Expectancy	0.0013	0.0002	6.0474	0.0000	0.0009	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0024	0.0007	3.6211	0.0003	0.0011	0.0037

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	-0.0001	0.0001	-0.0003	0.0001

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.22: Mediating Role of Perceived organizational justice in the Relationship Between

Community Score Momentum and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Satisfaction
X: Community Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0284	0.0008	1690.3066	1.7736	1	2199	0.1831

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	44.8496	0.8786	51.0440	0.0000	43.1265	46.5727
Community Score Momentum	-0.1484	0.1114	-1.3318	0.1831	-0.3668	0.0701

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1319	0.0174	0.1669	19.4511	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2286	0.0129	250.1565	0.0000	3.2033	3.2539
Community Score Momentum	0.0020	0.0011	1.7694	0.0770	-0.0002	0.0041
Employee Expectancy	0.0013	0.0002	6.0287	0.0000	0.0009	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.002	0.0011	1.7694	0.077	-0.0002	0.0041

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	-0.0002	0.0002	-0.0005	0.0001

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.23: Mediating Role of Perceived organizational justice in the Relationship Between

Product Responsibility Score Momentum and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Satisfaction
X: Product Responsibility Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0561	0.0031	1686.3519	6.9347	1	2199	0.0085

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	45.0774	0.8833	51.0316	0.0000	43.3452	46.8096
Product Responsibility Score Mom	-0.2324	0.0883	-2.6334	0.0085	-0.4055	-0.0593

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1275	0.0163	0.1671	18.1577	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2315	0.0130	248.6534	0.0000	3.2060	3.2570
Product Responsibility Score Mom	-0.0007	0.0009	-0.7650	0.4443	-0.0024	0.0011
Employee Expectancy	0.0013	0.0002	5.9252	0.0000	0.0008	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-0.0007	0.0009	-0.765	0.4443	-0.0024	0.0011

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	-0.0003	0.0001	-0.0006	-0.0001

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.24: Mediating Role of Perceived organizational justice in the Relationship Between Governance Pillar Score Momentum and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Satisfaction
X: Governance Pillar Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0047	0.0000	1691.6320	0.0493	1	2199	0.8242

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	44.7421	0.8827	50.6904	0.0000	43.0112	46.4730
Governance Pillar Score Momentu	0.0182	0.0821	0.2221	0.8242	-0.1428	0.1793

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1268	0.0161	0.1671	17.9617	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2297	0.0129	249.9792	0.0000	3.2044	3.2551
Governance Pillar Score Momentu	0.0004	0.0008	0.4468	0.6551	-0.0012	0.0020
Employee Expectancy	0.0013	0.0002	5.9748	0.0000	0.0009	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0004	0.0008	0.4468	0.6551	-0.0012	0.002

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	0.0000	0.0001	-0.0002	0.0002

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.25: Mediating Role of Perceived organizational justice in the Relationship Between Management Score Momentum and Employee Satisfaction

***************** PROCESS Procedure for SPSS Version 4.2 *****************

Y: Employee Satisfaction
X: Management Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0112	0.0001	1691.4566	0.2773	1	2199	0.5985

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	44.7146	0.8818	50.7072	0.0000	42.9853	46.4439
Management Score Momentum	0.0299	0.0568	0.5266	0.5985	-0.0815	0.1414

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1265	0.0160	0.1672	17.8607	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2302	0.0129	250.1824	0.0000	3.2049	3.2555
Management Score Momentum	0.0000	0.0006	-0.0281	0.9776	-0.0011	0.0011
Employee Expectancy	0.0013	0.0002	5.9766	0.0000	0.0009	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0	0.0006	-0.0281	0.9776	-0.0011	0.0011

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	0.0000	0.0001	-0.0001	0.0002

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.26: Mediating Role of Perceived organizational justice in the Relationship Between

Shareholder Score Momentum and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Employee Satisfaction
X: Shareholder Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0167	0.0003	1691.1982	0.6134	1	2199	0.4336

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	44.7463	0.8769	51.0281	0.0000	43.0266	46.4659
Shareholder Score Momentum	-0.0624	0.0797	-0.7832	0.4336	-0.2187	0.0939

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1361	0.0185	0.1667	20.7384	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2303	0.0129	251.0474	0.0000	3.2051	3.2556
Shareholder Score Momentum	0.0019	0.0008	2.3800	0.0174	0.0003	0.0034
Employee Expectancy	0.0013	0.0002	6.0233	0.0000	0.0009	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0019	0.0008	2.38	0.0174	0.0003	0.0034

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	-0.0001	0.0001	-0.0003	0.0001

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 3.27: Mediating Role of Perceived organizational justice in the Relationship Between

CSR Strategy Score Momentum and Employee Satisfaction

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Employee Satisfaction
X: CSR Strategy Score Momentum
M: Employee Expectancy
Sample Size: 2201

OUTCOME VARIABLE: Employee Expectancy

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0191	0.0004	1691.0502	0.8059	1	2199	0.3694

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	44.8652	0.8836	50.7740	0.0000	43.1324	46.5980
CSR Strategy Score Momentum	-0.0710	0.0791	-0.8977	0.3694	-0.2262	0.0841

OUTCOME VARIABLE: Employee Satisfaction

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1265	0.0160	0.1672	17.8672	2	2198	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	3.2303	0.0129	249.4746	0.0000	3.2049	3.2557
CSR Strategy Score Momentum	-0.0001	0.0008	-0.1165	0.9073	-0.0016	0.0015
Employee Expectancy	0.0013	0.0002	5.9734	0.0000	0.0009	0.0017

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-0.0001	0.0008	-0.1165	0.9073	-0.0016	0.0015

Indirect effect(s) of X on Y

	Effect	BootSE	BootLLCI	BootULCI
Employee Expectancy	-0.0001	0.0001	-0.0003	0.0001

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

4. Acquiring Sustainability? The Long-Term Influence of ESG Performance Differences on Post-M&A Corporate Capabilities

Abstract: At the heart of Environmental, Social, and Governance (ESG) research, a pivotal question revolves around how corporate sustainability can be harnessed as a capability. This is particularly pertinent in the context of acquisitions, where integrating resources of the target is crucial for firm performance. While existing studies spotlight the benefits of acquiring high-ESG-rated targets, they have side-lined an analysis of the effects of integrating firms with lower scores on ESG progression and financial performance. Additionally, the role of moderating and mediating factors in these dynamics is yet to be thoroughly examined. Our central question examines the dual influence of the sustainability performance of both superior and inferior target firms on the ESG progress and financial outcomes of acquirers whilst identifying moderating and mediating factors at play. In this paper, we combine dynamic capability and resource-based view (RBV) to theorize how the integration of inferior and superior ESG targets impacts sustainability and financial performance. Based on a set of 117 global acquisition events from 2009 to 2019, we propose that inferior ESG performance slows down an acquirer's ESG advancement due to a reallocation of dynamic capabilities and resources, while superior ESG performance speeds it up. We further posit that the acquirer's stakeholder engagement inversely moderates such dynamics. Furthermore, we study how ESG rating differences between acquirers and targets impact buy-and-hold abnormal stock returns (BHAR) and assume this to be mediated by the acquirer's ESG score changes following the transaction. Our paper contributes to the extant literature on ESG and corporate acquisitions by developing a synthesis of dynamic capabilities and resource integration, which works in a bi-directional manner that either slows down or accelerates the acquirer's ESG advancements. Furthermore, we highlight the essence of an acquirer's stakeholder engagement in moderating the post-acquisition performance results and the mediating impact of post-acquisition ESG performance deltas on stock returns.

Keywords: ESG; Mergers & Acquisitions; Dynamic Capabilities; Resource-Based View

4.1. Introduction

A central question within Environmental, Social, and Governance (ESG) research centers around how corporate sustainability can be harnessed as a capability in the sense of a firm's ability to effectively utilize its resources to achieve specific objectives (Barney, 1991; Teece et al., 1997). While scholars and practitioners continue to debate whether ESG should be viewed as value-enhancing due to stakeholder value gains (Aktas et al., 2011; Gomes & Marsat, 2018; Qiao & Wu, 2019) or as value-reducing due to increased shareholder costs (DesJardine et al., 2021; Servaes & Tamayo, 2013), there is consensus that improved corporate sustainability performance is associated with the development and accumulation of skills and knowledge (Eccles et al., 2014; Montiel & Delgado-Ceballos, 2014; Rueda-Manzanares et al., 2008). Such resources have been shown to play a significant role in mergers and acquisitions (M&A) due to their potential transferability between the parties involved in the transaction and the corresponding implications for learning and value creation (Capron & Pistre, 2002; Graebner, 2004; Zollo & Singh, 2004).

In recent years, ESG considerations have gained increasing attention in the context of mergers and acquisitions (Franklin, 2019). While acquisitions' financial and managerial effects have been extensively studied (Steigenberger, 2017), the ESG-related implications of such events remain less understood. Faced with pervasive reporting requirements set by taxonomies and governmental regulators (Barth et al., 1997; Neu et al., 1998) and acknowledging the growing importance placed by stakeholders and investors (Eccles et al., 2014; Tamimi & Sebastianelli, 2017), companies have increasingly incorporated ESG performance ratings as non-financial corporate information alongside the traditionally predominant financial data. Consequently, ESG data is expected to be increasingly integrated into valuations and risk assessments associated with acquisition processes (Brownstein et al., 2020). Concurrently,

there are emerging indicators of the rise in strategic mergers and acquisitions driven by ESG considerations (Baird et al., 2022).

Scholars have begun to investigate the impact of mergers and acquisitions on ESG performance and the corresponding effects on the performance of the transaction parties. Regarding ESG rating advancements as a result of acquisitions, there is evidence that acquirers can improve their ESG scores by acquiring higher-rated target companies (Franklin, 2019; Feng, 2021). Additionally, such advancements are associated with improved operating and financial performance for the acquirers (Deng et al., 2013; Salvi et al., 2018). Recent sustainability-related research has suggested that dynamic capabilities (DCs) are crucial in integrating ESG performance (Liang et al., 2022). Dynamic capabilities focus on developing internal and external competencies to achieve competitive advantages within changing business environments (Teece et al., 1997). In sustainability, this includes the managerial ability to make resource allocation decisions that integrate CSR practices into business strategies (Teece, 2016). Scholars also suggest that, particularly, absorptive capabilities, which enhance a firm's ability to recognize, assimilate, and apply external knowledge, and adaptive capabilities, which improve proficiency in adjusting and evolving resources and processes in response to environmental changes, can positively impact sustainable management performance (Liang et al., 2022). Regarding the financial impact of sustainability performance gains, improvements in ESG scores can benefit both an acquirer's financial accounting data (Deng et al., 2013; Salvi et al., 2018) and stock performance (Aktas et al., 2011; Krishnamurti et al., 2019; Tampakoudis & Anagnostopoulou, 2020). Further studies have validated a positive value impact of ESG scores on public market performance, independent of M&A situations (Khan, 2019).

Despite these findings at the intersection of ESG and M&A, prior research has predominantly concentrated on exploring the potential sustainability and financial gains

acquirers might realize by acquiring firms with high sustainability performance. This has been attributed, in part, to the integration of superior resources and the adoption of best practices (Liang et al., 2022) as part of the dynamic capabilities framework (Teece et al., 1997). However, such studies fall short of elucidating the effects of acquiring targets with inferior ESG ratings on the acquirers' subsequent ESG progress and financial outcomes. Investigating scenarios where the acquirer holds stronger ESG scores introduces more complex dynamics, thereby adding an essential layer of depth to our understanding of ESG implications in M&A contexts. Indeed, only recently studies have started to account for the fact that acquirers can be the counterparts with higher ESG scores at the time of the transaction (Franklin, 2019). Notably different from prior research (Deng et al., 2013; Krüger, 2015), this scenario encompasses the possibility of acquirers being the driving force in transferring sustainability best practices onto their targets. This emerging line of inquiry opens new avenues for exploring how acquirers with superior ESG profiles interact with their targets, ultimately reshaping broader perspectives on sustainability in mergers and acquisitions. Furthermore, scholars have only begun to provide possible explanations for the drivers impacting ESG and financial performance in the post-acquisition phase, including potential moderating and mediating factors. Such knowledge would, however, be crucial to disentangling further the mechanisms that affect sustainability performance post-acquisition.

Taken together, while previous studies have mostly considered a one-sided perspective, this study hence aims to provide a bi-sided view on the long-term acquisition impact of ESG performance for both acquirers with a superior and with an inferior ESG rating compared with their targets. Next to this, it considers the stakeholder engagement of the acquirer as an indicator of inclusive corporate governance in accordance with criteria set by LSEG as a central moderating variable and post-acquisition score differences of acquirers as a mediating variable to explain post-transaction outcomes.

The central research question for this study is ***how the superior and inferior sustainability performance of target firms affects the acquiring firms' sustainability advancement and financial performance, and which moderating and mediating factors influence these outcomes.*** We propose that in scenarios where the acquirer has a superior ESG profile, dynamic capabilities, as outlined by Teece et al. (1997), play a crucial role in helping acquirers identify and address the sustainability deficits of targets with lower ESG scores. In this process, informed by the Resource-Based View (Barney, 1991), the acquirer utilizes its own ESG-related resources and capabilities to address gaps in the target's practices post-acquisition, which may temporarily slow down the acquirer's own ESG advancements. Conversely, when the acquirer has an inferior ESG profile, it benefits from the integration of the target's best practices, resources, and capabilities. We further suggest, drawing on stakeholder theory (Freeman, 1984), that an acquirer's stakeholder engagement acts as a moderating variable between the difference in ESG ratings of the target and the acquirer at the time of the acquisition announcement and the subsequent development of the acquirer's ESG rating post-announcement. Focusing on financial outcomes, we furthermore posit a relationship between the differences in ESG scores between the target and acquirer at the time of the transaction and the long-term abnormal stock returns of the acquirer. The post-acquisition changes in ESG scores for the acquirer act as mediating variables influencing the long-term abnormal stock returns of the acquirer. In line with recent studies (Kero & Bogale, 2023; Kim et al.2015; Maleki Minbashrazgah & Shabani, 2019), we suggest a framework that examines the synergistic interaction between dynamic capabilities and resource integration, and how this influences the long-term sustainability trajectory and financial performance of the acquiring firms.

We test our framework based on a set of 117 global acquisition events that took place between 2009 and 2019. From a population of 22,278 acquisition events provided by the LSEG

(formerly Refinitiv) M&A database, we have filtered those entries with full financial and ESG data availability for both acquirers and targets during the relevant time span. As this study includes a stock price event study component, we have further considered only listed acquirers. To obtain meaningful results and ensure that the acquisitions are impactful enough, we have furthermore set a known minimum acquisition value of more than USD 100m and determined that that acquisition volume must at least account for 5% of the revenues of the acquiring company. For the study, we use the event study approach to examine the possible impact of ESG rating differences among targets and acquirers on the post-acquisition ESG performance of acquiring companies, possible financial performance improvements and ultimately on abnormal long-term stock returns following the acquisition event (Mackinlay, 1997). In this study, we employ an Ordinary Least Squares (OLS) regression model to examine the relationship between the ESG performance differential of target and acquirer at the time of acquisition and the change in the acquirer's ESG performance based on LSEG/ASSET4 data within the two years following the acquisition. In addition, we undertake moderation analysis to assess the influence of the acquirers' stakeholder engagement according to LSEG on these relationships. For this metric, LSEG evaluates the extent to which the company transparently communicates its stakeholder engagement, specifically its inclusion of stakeholders in the decision-making processes and the protocols it has established for effective two-way communication. Subsequently, we conduct a further regression analysis to explore the association between the post-acquisition change in the acquirer's ESG rating and potential Buy-and-Hold Abnormal Return (BHAR) stock price performance over the same period. Lastly, a mediation analysis is performed to explore how changes in the acquirer's post-acquisition ESG performance might explain the observed outcomes.

The analysis reveals a positive relationship between the ESG difference of the target and acquirer at the time of acquisition and the development of the acquirer's ESG performance

in the two years following the acquisition across all observed ESG categories by LSEG. This includes the overall ESG Score, the Environmental Pillar Score, the Social Pillar Score, and the Governance Score. The results further demonstrate that the acquirer's stakeholder engagement level, as defined by LSEG, is moderating in the results observed for the social pillar score. Acquirers with robust stakeholder engagement mechanisms consequently exhibit a less pronounced positive impact from acquiring targets with stronger ESG scores while experiencing a more substantial negative impact when acquiring targets with weaker ESG scores. In terms of buy-and-hold abnormal returns (BHAR) achieved by acquirers in the two years following an acquisition event, while a statistically significant relationship between post-acquisition ESG score changes of the acquirer and BHAR could not be validated, the study did confirm a mediating role of such score changes in the explanation of stock prices.

In summary, these results suggest that in scenarios where the acquirer possesses a superior ESG rating compared to its target at the time of acquisition, the change in rating during the two years post-acquisition is less pronounced than in instances where the acquirer has an inferior ESG score. As a moderating factor, higher stakeholder engagement by acquirers has been shown to mitigate the positive impact of target-acquirer score differences on the acquirer's post-acquisition ESG deltas for acquisitions involving targets with stronger ESG performances in the Social Score and overall ESG Pillar Score. This suggests that the acquirer's effective stakeholder engagement practices may contribute to the robustness of its ESG performance levels through established procedures when integrating targets with higher performance levels. Conversely, for targets with weaker ESG performance, acquirers may need to more robustly deploy internal capabilities to counteract the target's shortcomings, which could impair the acquirer's ESG performance, potentially leading to a decline in scores or slower score progression. The study suggests that the previously assumed linear relationship between dynamic capabilities and ESG integration (Liang et al., 2022) might actually be

polynomial, varying with target performance. Moderate stakeholder engagement by the acquirer can yield balanced benefits, but high levels may prevent the assimilation of positive influences from the target. Furthermore, the research partly shows how gains in ESG ratings indirectly influence long-term stock performance through post-acquisition score advancements of the acquirer. Although a direct correlation between post-acquisition ESG changes and buy-and-hold abnormal returns (BHAR) was not statistically significant, mediation analysis confirms a relevant impact of such ESG changes as a mediator between target-acquirer ESG score differences and BHAR.

A core contribution of our study is the conceptual development that explains these results in the context of an interplay of dynamic capabilities and resources. We posit that dynamic capabilities drive the assimilation and enhancement of superior ESG resources from targets with stronger ESG performance (Awan et al., 2021) because these capabilities enable acquirers to effectively identify, adapt, and integrate these advanced practices into their own operations (Kaul & Wu, 2016; Liang et al., 2022). Conversely, in cases where the target's ESG performance is inferior, the acquirer deploys these capabilities to augment the target's resources (Kaul & Wu, 2016), a process we posit to lead to a depletion of the acquirer's ESG resources. The Resource-Based View of the Firm (RBV) perspective emphasizes the strategic allocation of ESG resources, highlighting that superior sustainability-related resources are likely allocated with the acquirer in cases of superior target ESG performance (Awan et al., 2021) while we posit an allocation with the target when the target's ESG practices are weaker. The impact of dynamic capabilities, potentially exhibiting a nonlinear or polynomial shape through a moderating impact of stakeholder engagement, acts as a catalyst for resource reconfiguration. This enables the acquirer to effectively address ESG gaps in the target. Moreover, valuable, rare, and inimitable resources, when combined with dynamic capabilities, can be mobilized and transformed to meet ESG integration needs on either side.

Overall, this paper advances understanding of the dynamics of corporate sustainability in the realm of M&A. By developing a theoretical framework at the confluence of dynamic capabilities and the RBV, it expands the previously posited frameworks (Kero & Bogale, 2023; Kim et al., 2015; Maleki Minbashrazgah and Shabani, 2019) with regards to sustainability in acquisition contexts. It underscores that the effective identification, integration, and management of ESG resources post-acquisition can markedly differentiate firms in achieving their sustainability objectives and financial success, illustrating a bi-directional influence. Moreover, this study enhances our comprehension of the acquirer's stakeholder engagement level as a moderating factor, while the impact of stakeholder engagement may require a stronger differentiation depending on the target sustainability performance levels. Future research could build upon this framework to create a more detailed understanding of the mechanisms that underpin ESG advancement in the wake of mergers and acquisitions. They could particularly delve more deeply into the intricacies of the acquirer's stakeholder engagement as a moderating factor, exploring possible alternative configurations such as a polynomial structure, which must also distinguish between targets with stronger and weaker performance. On the practical end, the results are highly relevant in informing strategic decision-making processes for firms engaging in mergers and acquisitions. They provide essential insights into how ESG performance can be managed and optimized in relation to acquisitions by illuminating the opportunities and challenges in integrating ESG resources. Additionally, the partly confirmed link between ESG performance considerations and long-term stock price changes underscores the financial implications of effective ESG integration.

4.2. Theoretical Background

In recent years, ESG research has garnered significant attention, with scholars investigating its impacts on stock performance, fixed income performance, stakeholder

relations, and other key areas of management research. This section will specifically examine the literature on ESG in the context of mergers and acquisitions and introduce related theoretical concepts for this study, such as Dynamic Capabilities (DCs) and the Resource-Based View of the Firm (RBV).

4.2.1. Impact of M&A on ESG performance

Research on the impact of M&A on ESG performance has primarily focused on situations where targets have superior ESG ratings compared to acquirers. Recent studies have started considering rating differences between buyers and targets, but conclusions regarding drivers for post-acquisition ESG performance changes remain limited. Aktas et al. (2011) found that the acquirer's environmental and social performance improves after acquiring a target with strong SRI performance, with the stock market rewarding such responsible investments. They suggest a learning hypothesis, where the acquirer learns from the target's best practices, leading to an enhanced ESG performance and positive sustainability rating revision post-acquisition. Deng et al. (2013) confirmed the positive impact of acquiring a strong ESG performer on the acquirer's post-transaction operating performance. Acquirers with high ESG ratings achieve significant gains in post-merger long-term operating performance, higher stock returns, and a lower likelihood of failure. Liang et al. (2017) validated that companies with low ESG ratings can significantly improve their sustainability performance after a transaction involving a highly rated firm, driven by factors such as a more favorable business image, cost reduction, and mitigation of legal risks. High-ESG acquirers see less of an impact as a result of such transactions. Tampakoudis & Anagnostopoulou (2020) focused on rating differences between acquirers and targets as a central variable, finding that a pre-merger ESG edge of a target compared to its acquirer can benefit both the acquirer's ESG performance and market value post-transaction. They conclude that acquirers purchasing

targets with stronger ESG ratings are more receptive to incorporating ESG practices into their core business. Feng (2021) confirmed that acquirers can improve ESG scores through transactions with higher-rated target companies. However, the study could not validate a linear relationship between a target's ESG rating and an acquirer's stock price change before or after the acquisition. Salvi et al. (2018) used return on assets (ROA) analysis to validate the positive financial performance implications of acquiring a target with strong environmental performance. They attribute this to improved operating and financial results based on the stakeholder value theory (Bettinazzi & Zollo, 2017), while an enhanced corporate image benefits the firm on both strategic and cultural levels.

4.2.2. Impact of ESG on Stock Outperformance

Studies examining the impact of acquisition events on stock prices reveal mixed short-term market reactions for acquirers, ranging from positive (Oler et al., 2008; Rau & Vermaelen, 1998) to neutral (Shah & Arora, 2014) and negative (Adnan & Hossain, 2016). However, long-term abnormal returns following acquisitions are generally negative (Agrawal et al., 1992; Agrawal & Jaffe, 2000; Asquith et al., 1983; Jensen & Ruback, 1983; Langetieg, 1978; Moeller et al., 2004). Farinós et al. (2020) found that US equities differ from those in other countries, with non-US jurisdictions exhibiting more rational stock market reactions. Research on the impact of the stock price on corporate ESG performance has become more differentiated, distinguishing between ESG levels (Tilt) and changes in ESG performance (Momentum). Viehs et al. (2014) showed that environmental news positively or negatively impacts stock prices, depending on the nature of the news (Capelle-Blancard & Laguna, 2010). Aouadi and Marsat (2018) found that negative news can sometimes increase visibility for strong corporate sustainability performance, resulting in a positive stock price impact. Social factors, such as employee well-being (Smithey Fulmer et al., 2003) and satisfaction (Edmans et al., 2023;

Faleye & Trahan, 2011), along with governance attributes, including the quality of firm governance (Core et al., 2006), significantly influence stock prices. Companies with high sustainability ratings performed better during the 2008-9 financial crisis (Lins et al., 2017), exhibited lower stock volatility and had higher survival chances over a 15-year period (Ortiz-de-Mandojana & Bansal, 2016). Allianz Global Investors (2020) found that ESG Momentum outperforms ESG Tilt in driving stock outperformance. Nagy, Kassam, and Lee (2015) reported similar findings, with ESG Momentum outperforming ESG Tilt strategies. The market is more likely to react to positive news about companies showing strong improvements than to top ESG performers. Khan et al. (2016) found that the best market alpha is achieved by focusing on material issues (+6.01% annualized alpha), while a high performance on both material and immaterial issues yields only +1.96% alpha. These findings support the idea that focusing on material sustainability issues enhances stock outperformance and competitive advantage. Regarding acquisitions, Krishnamurti et al. (2019) showed that acquiring a target with a higher CSR orientation leads to significant positive abnormal returns in a three-day event window. Aktas et al. (2011) and Tampakoudis and Anagnostopoulou (2020) found similar stock price effects for acquirers of targets with strong SRI performance. However, Feng (2021) could not establish a linear relationship between target CSR strength and post-acquisition stock price returns. Cho et al. (2021) found that the delta in ESG performance between an acquirer and a target positively impacts premia paid to target shareholders, with this effect being amplified if well-governed companies conduct the acquisition. This suggests that a stronger sustainability focus is associated with a better alignment of stakeholders, which is recognized and rewarded by the stock market. Overall, these findings emphasize the importance of ESG performance in driving stock outperformance and highlight the potential benefits of acquisitions targeting firms with strong sustainability performance.

4.2.3. Dynamic Capabilities and Resource-Based View

Dynamic Capabilities

The Dynamic Capability (DC) theory posits that firms should manage and adapt internal and external resources to develop competitive advantages in a rapidly changing business environment (Teece et al., 1997). Despite their unique nature, dynamic capabilities often share significant similarities across firms, indicating a certain degree of homogeneity, interchangeability, and substitutability (Eisenhardt & Martin, 2000). Central to DCs are absorptive, adaptive, and innovative capacities. Absorptive capacities, as highlighted by Zahra and George (2002), refer to a firm's ability to recognize, assimilate, and apply external knowledge commercially (Cohen & Levinthal, 1990) and enable companies to adapt information and skills to sustainability challenges (Todorova & Durisin, 2007). Adaptive capacities are vital for corporate sustainability and refer to a firm's ability to adjust its operations and strategies, for instance, in response to environmental, social, and regulatory changes (Oktemgil & Greenley, 1997; Tuominen et al., 2004). Innovative capacities involve developing new products and accessing markets through innovative strategies (Wang & Ahmed, 2004, 2007) and can, in the context of sustainability, for instance, drive sustainable innovation and differentiation, aligning products and services with evolving environmental and social standards. However, measuring dynamic capabilities empirically is challenging (Easterby-Smith et al., 2009), partly due to their intangible nature and the complexity involved in quantifying their impact on firm performance.

Recent studies have increasingly explored the not-yet-fully understood relationship between Dynamic Capabilities and corporate sustainability performance. Managerial capability in resource and investment allocation decisions is crucial for Dynamic Capabilities (Coen & Maritan, 2011), which also aids in translating resources into value-enhancing strategies (Buzzao & Rizzi, 2021). This establishes a potential link to the Firm's Resource-

Based View (RBV). Furthermore, highlighting the importance of resources, Li et al. (2021) argue that sustainability performance hinges on how firms utilize resources in conjunction with Dynamic Capabilities. While the literature has primarily focused on the financial impact of DCs, there is, hence, also growing attention towards sustainability-related factors. Liang et al. (2022) found that absorptive and adaptive capabilities greatly influence sustainable management performance during acquisitions. Absorptive capacity has a direct effect, and ESG strategy is crucial in linking DCs with sustainable management performance. Extending to a bi-directional impact, Yang & Yang (2022) demonstrate that Dynamic Capabilities can, in the realm of ESG, both positively or negatively affect corporate performance, with uncertainty moderating this relationship. Notably, customer-oriented capabilities positively impact innovation, while innovation-oriented ones do not. The study highlights the need for balanced sensing-seizing-reconfiguring capabilities in ESG management to enhance performance amid uncertainty. Such bi-directional mechanics have been confirmed by Kaul & Wu (2016), who, in the general context of acquisitions, further highlight that acquirers select targets with lower capabilities in familiar contexts to leverage their existing capabilities, and targets with higher capabilities in new contexts to acquire new skills. This approach is shaped by the interplay between the firms' dynamic capabilities and valuable resources, illustrating how strategic fit and acquisition capabilities influence target selection in mergers and acquisitions.

Resource-Based View of the Firm

First established by Wernerfelt (1984), the Resource-Based View (RBV) of the Firm posits that competitive advantage is derived from the firm's ability to utilize its unique set of resources (Barney, 1991). Within management science, the view shifts the focus from industry-level analysis to the internal factors, own decisions and competencies of a firm as drivers of sustained competitive advantage (Barney, 1996; Hart & Dowell, 2011; Hoskisson et al., 1999).

In the context of corporate acquisitions, especially those involving targets with divergent ESG scores, the RBV can provide a strategic lens for post-acquisition integration and performance enhancement (Vincze et al., 2021). As part of this, the natural resource-based view (NRBV) extends the RBV by focusing on environmental aspects, emphasizing how firms can use their unique environmental resources and capabilities to gain a competitive edge. When redeployed effectively, these resources can mitigate the initial performance impairments due to integration complexities and elevate the combined entity's ESG performance in the long term (Hart, 1995). Aragon-Correa and Sharma (2003) synthesize insights from contingency, dynamic capabilities, and the natural resource-based view to illustrate how the competitive environment shapes proactive business strategies for environmental interaction and how elements like uncertainty and complexity influence the effectiveness of these strategies. Hart and Dowell (2011) revisit this evolution of the NRBV and its intersection with theories such as dynamic capabilities. They contend that the NRBV has not only gained from dynamic capabilities research but can help to explain recent advancements in dynamic capabilities, particularly how they enable firms to adapt and innovate in areas like clean technology and approaches to addressing poverty. Moreover, the strategic allocation and augmentation of these resources to address the target's ESG deficiencies can lead to enhanced sustainable practices and innovative ESG initiatives that align with the broader business strategy, thereby creating new competitive advantages. For the acquisition of sustainability-related resources and capabilities, Awan et al. (2021) investigate how buyer-driven knowledge transfer activities impact green innovation, specifically green product and process innovation. They found that buyer-driven knowledge activities significantly enhance green product innovation, and that investments in environmental management fully mediate the relationship between knowledge transfer and green process innovation, emphasizing the importance of internal competencies and buyer involvement in green innovation strategies.

More recently, with reference to sustainability, scholars have expanded the RBV and NRBV to explore the integration of sustainability practices into core business strategies and to examine how sustainable resources and capabilities, such as renewable energy technologies, sustainable supply chain management, and corporate social responsibility initiatives, can provide firms with a competitive advantage. Through the lens of the RBV, Bhandari et al. (2022) investigate the interplay between a firm's competitive advantage and its ESG footprint. The findings suggest a concave relationship between sustained competitive advantage and ESG footprint and highlight the need for managers to incorporate ESG friendliness into their resource base for long-term survival in an ESG-oriented economy. Besides this, Arda et al. (2023) underscored the strategic importance of sustainability within the RBV framework, exploring how firms can leverage their environmental and social performance to enhance operational and financial outcomes. They demonstrated how applying the RBV enables firms to develop capabilities and resources that address environmental and social priorities through the supply chain while achieving superior financial performance, thereby illustrating the interdependent benefits of integrating sustainability with core business strategies.

The Synthesis of Dynamic Capabilities and the Resource-Based View of the Firm

A number of studies have started to bridge both theories by examining how acquiring firms leverage their dynamic capabilities to assess, integrate, and augment the ESG resources of the target firm. Such studies underscore the synergies between the resource-based view and dynamic capabilities in enhancing a firm's competitive advantage through strategic ESG management in the M&A context. While the Resource-Based View centers on a relatively static market condition, dynamic capabilities offer a supplementary perspective that elucidates how firms can adapt and renew their sources of competitiveness and adapt their abilities in rapidly changing environments (Teece et al., 1997). A possible interaction between dynamic

capabilities and the firm's resource-based view is paramount to understanding the impact of post-acquisition ESG performance. Various studies have since carved out a possible joint benefit of both views from each other. As posited by Hart & Dowell (2011), both a resource-based and dynamic capabilities-based perspective benefit from and help to understand the genesis of each other. Due to their focus on a dynamic market environment, dynamic capabilities are instrumental in allowing a firm to maintain a competitive advantage in a shifting landscape, especially with reference to M&A activity. Winter (2003) postulates that firms allocate resources to develop dynamic capabilities in response to challenges they encounter, which are also defined by the particular challenges posed by the environment of the firm's operations. Regarding sustainability, this would imply that companies most vulnerable to the impacts of climate change are highly motivated to formulate strategies to address these impacts (Hart & Dowell, 2011). For the contrarian view, Lin & Wu (2014) highlight that dynamic capabilities can also mediate a firm's unique and irreplaceable resources in the context of the RBV, with the joint interaction having a central role in enhancing corporate performance. To synthesize both theories, Kim et al. (2015) propose integrating dynamic capabilities with the RBV by conceptualizing how internal and external resources are dynamically managed to enhance service innovation. They emphasize that dynamic capabilities complement the RBV's focus on static internal resources by adding the ability to respond to changing environments. Furthermore, Maleki Minbashrazgah and Shabani (2019) propose a synthesis of dynamic capabilities and RBV by investigating how the dynamic management of human, technological, and relationship resources can foster environmental performance. The authors highlight that dynamic capabilities enhance the ability of healthcare facilities to adapt resource use to changing environmental demands, thereby improving both market and financial performance through better ecological practices. To enhance the understanding of firm performance in dynamic markets, Kero and Bogale (2023) conducted a systematic literature review across

various sectors, focusing on dynamic capabilities and the RBV frameworks. They emphasize the necessity for firms to integrate, build, and reconfigure internal and external competencies to adapt to rapid market changes, suggesting that dynamic capabilities extend the RBV by addressing its rigidity and enhancing the firm's ability to maintain a competitive advantage in dynamic environments. Overall, these studies demonstrate that the RBV and dynamic capabilities are closely intertwined with the level of environmental dynamics, structures, availability of resources and organizational capabilities acting as key drivers (Aragon-Correa & Sharma, 2003).

4.3. Hypotheses

This section formulates hypotheses derived from the theoretical background discussed, focusing on ESG ratings, stakeholder engagement, and post-transaction ESG performance and financial metrics in the light of Dynamic Capabilities and the RBV.

4.3.1. Post-Transaction ESG Impact of Rating Differences

Previous research has shown that the purchase of targets with a higher ESG score can increase the post-acquisition ESG performance of an acquirer (Aktas et al., 2011; Feng, 2021; Tampakoudis & Anagnostopoulou, 2020). Factors contributing to these sustainability performance improvements include the transfer of a positive business image (Servaes & Tamayo, 2013), cost reductions (Flammer, 2013), and risk mitigation (Godfrey et al., 2009). Dynamic Capabilities and the managerial ability for resource allocation decisions to incorporate sustainability practices into strategies (Teece, 2016) are key explanations for the ESG learning effects companies experience during post-acquisition phases. As detected by Liang et al. (2022), Dynamic Capabilities, particularly absorptive and adaptive capacities, can significantly impact a company's sustainability performance, both directly (absorptive) and indirectly (absorptive and adaptive), with sustainability strategy as a mediating factor. As

highlighted by Yang & Yang (2022), DCs furthermore only benefit a firm in the case of an adaptation strategy that deals with cases of uncertainty. Back-solving the results by Liang et al. (2022), we consequently posit that a target company with a strong ESG performance is likely to have strong Dynamic Capabilities and effective practices in place to correspond to changing regulatory environments and stakeholder expectations. An acquirer can adopt these systems and processes to improve its own ESG performance. On the other hand, a target with a weak ESG score may have difficulty responding to changes in the ESG landscape because it lacks the Dynamic Capabilities to adapt quickly and effectively to these changes (Hart & Dowell, 2011). In addition, acquiring a target with a weak ESG performance may require the acquirer to invest time and resources in improving the target's ESG performance, which can be challenging if the target does not have the necessary dynamic capabilities to respond quickly to changes in the ESG landscape. Likewise, the sustainability performance of a firm is strongly dependent on access to and deployment of valuable, rare and inimitable resources and capabilities in the context of the RBV. For example, Hart (1995) suggests that a firm's ability to achieve superior sustainability performance is contingent upon leveraging such strategic resources effectively. Contrary to the positive effects posited for the acquisition of higher-rated ESG targets, acquiring a lower-rated entity may, hence, necessitate additional resources and managerial focus to uplift the target's ESG performance. This process might temporarily divert capabilities and resources from the acquirer's ongoing ESG initiatives, thereby slowing its overall ESG progress. Additionally, the absorptive capacity of the acquirer (Cohen & Levinthal, 1990) may be tested in assimilating and improving the target's practices, potentially leading to a dilution of the acquirer's existing ESG strengths.

We posit that the corresponding score differences between the acquirer and the target at the time of the acquisition are likely to impact the degree of Dynamic Capabilities that can be leveraged by the acquirer. Due to the intertwined nature of both concepts, a higher or lower

degree of DCs subsequently impacts the acquirer's ability to effectively leverage its valuable, rare, and inimitable sustainability resources and capabilities, as conceptualized by the RBV. We summarize the first hypothesis as follows:

Hypothesis 1: There is a positive relationship between the delta in ESG ratings of the target and acquirer at the time of the acquisition announcement and the subsequent development of the acquirer's ESG rating post-announcement.

Engagement with and orientation towards stakeholders is a critical component in the successful execution and completion of post-merger integration processes. From a strategic standpoint, the emphasis is on leveraging stakeholder engagement as a conduit for knowledge exchange, innovation promotion, and conflict minimization, which collectively contribute to the robustness of project ownership and the cultivation of spin-off partnerships (Freeman, 1984; Clarkson, 1995). With reference to acquisitions, Bosse et al. (2020) have demonstrated that stakeholder orientation may account for a significant portion of the observed variance in the performance of acquiring firms. Bettinazzi and Zollo (2022) have unveiled a dual impact of stakeholder orientation on managerial learning, suggesting there might be an optimal level of such orientation to unleash benefits in acquisitions. Consideration of stakeholders' feedback can improve managerial interpretation of previous experiences by highlighting overlooked aspects of past acquisitions. However, this focus may also shift managerial attention from analytical processes, strengthen reliance on current methods, and constrain learning from acquisition experiences (Ocasio, 1997). Specifically focusing on sustainability, Ma (2023) demonstrated that targets with superior ESG performance can leverage their ESG strengths to enhance stakeholder involvement and facilitate the creation of post-merger and acquisition synergies.

Consequently, there are indications that stakeholder orientation and engagement can influence sustainability and financial performance. Most studies have concluded that an increased stakeholder orientation positively impacts key observed metrics. This learning from targets with superior performance could therefore be amplified for acquirers with a proactive stakeholder engagement approach, enabling them to benefit more significantly from the ESG performance advantages of targets due to their stronger ability to recognize and implement best practices. In their study, Bosse et al. (2020) described how a strong stakeholder orientation by the acquiring firm leads to value creation, with stakeholder economies of scope emerging when the management of stakeholder relationships across multiple business units in a combined firm generates greater total economic value than if those units operated independently. This aligns with the potential for a positive impact of stronger stakeholder engagement. However, more advanced stakeholder engagement also involves more established procedures and best practices of acquirers, which could provide some resilience against the rapid adoption of superior ESG practices from targets or the potential depletion of capabilities and resources to targets with inferior performance. In the context of experiential learning, Bettinazzi and Zollo (2022) identified an inverted U-shaped effect of stakeholder orientation on acquisition performance, suggesting that excessive stakeholder focus can diminish learning from acquisitions. These impacts lead us to conclude that some form of stakeholder engagement affects post-acquisition performance outcomes, likely resulting in a context-dependent balance of stakeholder scope effects and resilience against external influences, as highlighted by the distraction from analytical processes and bolstering belief in established methods. This leads us to the formulation of the second hypothesis:

Hypothesis 2: The acquirer's stakeholder engagement acts as a moderating variable between the delta in the target and the acquirer's ESG ratings at the time of the

acquisition announcement and the subsequent development of the acquirer's ESG rating post-announcement.

4.3.2. Long-term Stock Return Impact of Score Differences

A growing body of literature supports the premise that ESG practices may lead to superior risk-adjusted returns (Friede et al., 2015; Khan et al., 2016). However, less is understood about the mechanisms through which ESG could exert influence on the stock market performance of acquiring firms in the post-merger period. Recent studies have begun to explore the relationship between ESG and stock performance, with particular attention to the concept of ESG momentum and its predictive power regarding stock returns (Nagy et al., 2015). The growing focus of investors on sustainable investing and ESG compliance highlights that M&A transactions with significant ESG score differences are expected to undergo close examination for their potential long-term effects on the acquirer's ESG performance and, consequently, its market value (Friede et al., 2015).

Drawing from the resource-based view, it is conceivable that the post-announcement reallocation and reconfiguration of valuable, rare, and inimitable ESG resources and capabilities could significantly influence the acquirer's long-term market valuation. With respect to dynamic capabilities (Teece et al., 1997), the interaction with the RBV determines the capacity to assimilate ESG practices. Previous research, including Lin & Wu (2014), has validated that combining dynamic capabilities with the RBV framework can positively affect firm performance. The post-announcement period is critical when the acquirer is either demonstrating its absorptive and adaptive capacities to include stronger ESG best practices or diverting such capacities to level out weaknesses within the target.

Numerous studies have illuminated the mechanisms through which the Resource-Based View drives value creation. Central to RBV is the premise that firms possess unique resources

and capabilities that, when effectively leveraged, can lead to a sustainable competitive advantage and superior performance (Barney, 1991). Specifically, the RBV posits that value creation within companies stems from the exploitation of strategic assets that are valuable, rare, inimitable, and non-substitutable (VRIN), which creates a sustainable competitive advantage for a firm. The empirical work by Ray et al. (2004) exemplifies this, showing how information technology resources can significantly enhance performance outcomes when aligned with a firm's strategic orientation. While the RBV has historically rather been seen in the context of general value creation and a direct link between the RBV and stock prices has not been examined yet, studies like Kanuri & McLeod (2016) confirm that a company's sustainable competitive advantage can indeed lead to stock outperformances.

We posit that the realization of long-term value is driven by two main factors: (i) the potential for development that arises from incorporating best practices due to differences in sustainability performance between the acquirer and target at the time of acquisition; and (ii) the actual post-acquisition performance impact, which depends on the acquirer's effective enhancement of its sustainable competitive advantage through strategic resource and capability utilization. Hypothesis 3 hence contends that the relationship between target and acquirer ESG score differences at the time of the transaction impacts long-term acquirer stock performance in a bi-directional manner, which implies that both positive and negative deltas in ESG scores can have a significant impact on the acquiring firm's long-term stock returns.

Hypothesis 3: There is a positive relationship between the ESG score differences between the target and acquirer at the time of the transaction and the long-term abnormal stock returns of the acquirer.

As highlighted, research indicates that ESG Momentum, referring to changes in ESG scores, is a more relevant driver for stock price outperformance than ESG Tilt, which pertains to the level of ESG scores (Chen & Yang, 2020; Nagy et al., 2015). With respect to the post-acquisition ESG performance changes, Aktas (2011), Krishnamurti et al. (2019), and Tampakoudis & Anagnostopoulou (2020) have demonstrated that acquiring a target with higher ESG ratings can lead to positive abnormal stock returns for the acquirer. Based on the second of the previously mentioned key drivers for long-term value creation benefits, Hypothesis 4 focuses on the actual changes of acquirer ESG scores in the two years following the acquisition as a driving force of stock outperformance. A positive post-transaction delta in acquirer ESG scores may signal to investors that the acquirer is effectively utilizing its dynamic capabilities to integrate the target's ESG strengths, potentially enhancing resources and capabilities that create sustainable competitive advantages based on the RBV. We posit the mediating role of ESG score deltas in influencing long-term stock returns to be driven by the firm's ability to rapidly redeploy and recalibrate resources in alignment with ESG benchmarks post-acquisition. This agility facilitates the alignment of newly combined companies with sustainable competitive advantages as well as with evolving expectations of stakeholders, which can significantly impact investor perceptions and, ultimately, stock performance. Conversely, a negative ESG score delta could be interpreted as a failure to capitalize on the acquisition, possibly eroding investor confidence and diminishing stock returns. We hence derive the fourth hypothesis as follows:

Hypothesis 4: The change in the acquirer's ESG scores post-acquisition mediates the relationship between the initial ESG rating difference of target and acquirer at the time of the acquisition announcement and the long-term abnormal stock returns of the acquirer.

4.4. Data Collection and Methodology

This section outlines the quantitative research approach adopted for this study, focusing on archival financial and ESG rating data sourced from LSEG/ASSET4 as well as Wharton Research Data Services (WRDS). The use of archival data allows for a comprehensive analysis by focusing on completed global acquisitions over a decade, providing robust insights into the effects of ESG performance on acquisition outcomes. This approach was chosen for its ability to objectively capture a wide range of variables affecting mergers and acquisitions during a relatively consistent economic period. It ensures comparability of data between targets and acquirers, as well as acquirers in the post-transaction phase, facilitating a detailed examination of the hypothesized relationships.

4.4.1. Sample Selection

The sample for this study encompasses 22,228 completed global acquisitions from 2009 to 2019, as reported by LSEG (formerly Refinitiv). These transactions are characterized by the listed acquirer gaining control of a target, with the transaction value being at least 1% of the acquirer's last twelve months (LTM) revenues. This time frame was chosen due to its relative economic stability, excluding periods directly impacted by the Great Financial Crisis of 2008-2009 and the COVID-19 pandemic that commenced in 2020. We sourced financial and ESG rating data from LSEG. To mitigate the confounding effects of multiple acquisitions by the same firm, we concentrated on events where no other acquisition exceeding the 1% threshold occurred within 12 months before or after the event date. This criterion yielded a dataset of 117 acquisition events for analysis, as summarized in Figure 1, which delineates the proportions of the events by year. Of the 117 acquisitions recorded between 2009 and 2019, 76.9% (90) involved cash transactions, 27.4% (32) were cross-border with the USA, the United Kingdom, Canada, and France emerging as the predominant countries for acquisition target

headquarters, and 40.2% (47) were cross-industry. Due to the dataset's limitation to S&P 500 companies, most acquirers are US-based, with the United Kingdom and Switzerland following. This is indicative of Standard & Poor's 2010 policy change to include firms that have relocated their headquarters from the US to international locations in the index. Next to this, 63.2% (74) of the transaction had an acquiring company that fulfilled the LSEG criteria regarding a strong acquirer stakeholder engagement, meaning they had established bilateral communication channels and involved stakeholders in decision-making processes through existing procedures.

Figure 4.1: Descriptive Statistics of Transactions

Year	Cash		Cross-Border		Cross-Industry		Acquiror Stakeholder Engagement		Total
	No.	%	No.	%	No.	%	No.	%	No.
2008	2	100.0%	1	50.0%	1	50.0%	2	100.0%	2
2009	1	100.0%	1	100.0%	1	100.0%	0	0.0%	1
2010	1	100.0%	0	0.0%	0	0.0%	1	100.0%	1
2011	2	66.7%	0	0.0%	0	0.0%	1	33.3%	3
2012	2	66.7%	0	0.0%	2	66.7%	1	33.3%	3
2013	2	100.0%	1	50.0%	1	50.0%	1	50.0%	2
2014	7	77.8%	4	44.4%	4	44.4%	8	88.9%	9
2015	8	53.3%	2	13.3%	8	53.3%	9	60.0%	15
2016	19	86.4%	6	27.3%	12	54.5%	11	50.0%	22
2017	12	85.7%	4	28.6%	2	14.3%	9	64.3%	14
2018	17	77.3%	6	27.3%	6	27.3%	13	59.1%	22
2019	17	73.9%	7	30.4%	10	43.5%	18	78.3%	23
Total	**90**	**76.9%**	**32**	**27.4%**	**47**	**40.2%**	**74**	**63.2%**	**117**

4.4.2. ESG Scores

LSEG ASSET4 assesses the ESG ratings of companies as a percentile rank within their respective industries. This value indicates how well a company performs in the relevant categories compared with its peers. The percentage represents the z-scored and normalized percentage based on the ESG information available to ASSET4 in the fiscal year t−1. Since LSEG ESG Scores are measured as percentiles, the data reflects the change in positioning of the target firms relative to their industry counterparts for the observation period. In this context,

the research concentrates on the comprehensive LSEG ESG Score, representing an aggregate score of a company across underlying pillars based on self-reported data within the environmental, social and governance remit. Additionally, the study evaluates the individual category scores: Environmental Pillar Score, Social Pillar Score, and Governance Pillar Score. These scores represent a company's weighted average relative ratings derived from reported information and the corresponding LSEG category scores. Specifically, the Environmental Pillar Score is calculated based on reported environmental information and three underlying environmental category scores; the Social Pillar Score is based on reported social information and four underlying social category scores; and the Governance Pillar Score is derived from reported governance information and three underlying governance category scores. Regarding changes in ESG ratings after the transaction, given that ESG ratings are usually updated on an annual basis, a 24-month period subsequent to the acquisition announcement is considered to observe any notable shifts in metrics. To accommodate the annual updates, we also calendarize the data by calculating the average ESG rating value for each of the four quarters following a specific key date. For stakeholder engagement, LSEG offers a proprietary category designed to gauge the extent and quality of a company's interactions with its stakeholders. This category assesses whether a company discloses its methods of stakeholder interaction, detailing its approach to involving stakeholders in decision-making processes and establishing bilateral communication channels. The categorization is binary, indicating a "Y" (Yes) or "N" (No) that denotes a company's adherence to predefined stakeholder engagement practice benchmarks.

4.4.3. Abnormal Shareholder Returns

In this study, we furthermore examine abnormal stock returns following acquisition events. To this end, we employ the Wharton Research Database (WRDS) Long Run Event Study tool for measuring Buy-and-Hold Abnormal Returns (BHAR). This event study

approach facilitates a relatively objective assessment, leveraging public data to calculate abnormal returns. This method enables analysis across a cross-section of firms, minimizing industry sensitivity in the data. However, employing a long event window introduces challenges in risk adjustments, primarily due to increased variability and unpredictability in market conditions over extended periods. Moreover, long-run abnormal returns are highly sensitive to the chosen model, particularly due to systematic errors that can accumulate over long durations. Our methodology encompasses purchasing a security post-acquisition and short-selling similar securities from non-event firms during the same period. BHAR, which calculates geometric returns by incorporating compounding effects, serves as a more robust indicator for measuring long-term returns due to its higher convexity compared to Cumulative Abnormal Returns (CAR), which aggregates daily return changes. This implies that BHAR values are marginally lower at smaller magnitudes while transforming into a sharply increasing positive spread once they exceed a certain return threshold (Barber & Lyon, 1997). The formula applied to measure abnormal returns is as follows:

$$BHAR_{it} = \Pi_{t=1}^{T}(1 + R_{it}) - \Pi_{t=1}^{T}(1 + E(R_{it}))$$

Where:

$BHAR_{it}$: *Buy-and-Hold Abnormal Return for investment i at time t.*
R_{it}: *Actual Return on Investment i at time t.*
$E(R_{it})$: *Expected Return on Investment i at time t, based on an appropriate benchmark.*
$\Pi_{t=1}^{T}$: *Cumulative product of returns over T periods.*
T: Total number of time periods considered.

4.4.4. Control Variables

Our study incorporates several well-established control variables to identify potential confounding and mediating factors that may influence the examined relationships. In line with King et al. (2004), we include Cash as a deal control variable to account for the payment method's influence on post-acquisition performance. Following the work of Erel et al. (2012),

the inclusion of Cross-Border transactions recognizes the complexities introduced by acquisitions that span national borders and their effects on ESG integration. Similarly, we control for Cross-Industry transactions to address the strategic implications of diversification in M&A activities, as discussed by Ahern and Harford (2014). For acquirer-specific variables, we control for Revenues to account for company size, which Galbreath (2010) identified as influential to ESG outcomes. We also include the Operating Margin (Trailing 12 Months) following Richardson (2006), who highlighted its significance as an indicator of operational efficiency affecting ESG performance. The Leverage Ratio (Debt % of Assets) is included pursuant to Attig et al. (2016) to control for the impact of financial structure on ESG practices. Additionally, Asset Turnover (Sales/Assets) is incorporated, reflecting asset utilization efficiency with implications for ESG initiatives, as suggested by Lev et al. (2010). Correspondingly, target control variables include Revenues, Operating Margin (Trailing 12 Months), Leverage Ratio (Debt % of Assets), and Asset Turnover (Sales/Assets), each mirroring the acquirer variables to ensure a comprehensive analysis. Table 4.1 in the appendix provides an overview of the respective variables included in this study.

4.4.5. Analyses

To examine the various hypotheses, we employ a suite of analytical tests. Initially, to assess the relationship between differences in target and acquirer ESG ratings, changes in acquirer ESG ratings over the two years following the transaction and buy-and-hold abnormal returns within the same timeframe, we analyze the correlations among these variables using SPSS. Moreover, to explore the potential moderating influence of stakeholder engagement on the dynamic between the differences in ESG scores of the target and acquirer and the subsequent adjustments in acquirer ESG scores post-transaction, we undertake a mediation analysis using the SPSS Process Macro designed by Hayes. Additionally, to ascertain whether

changes in the acquirer's ESG score post-acquisition serve as a mediating factor that might explain the observed BHAR, we further employ a mediation analysis leveraging the SPSS Process Macro. This multifaceted approach allows for a nuanced understanding of the interplay between ESG performance and financial returns following mergers and acquisitions and the role stakeholder engagement plays within this context.

4.5. Results

The dataset considered for this study encompasses 19 different financial and ESG metrics for a set of 117 transactions. Figure 4.2 provides a detailed description of the means, standard deviations and bivariate descriptions among variables.

The overall ESG score difference has a mean of -19.617, suggesting that acquirers tend to have higher ESG scores than their targets by this margin. The substantial standard deviation of 20.366 around this mean difference indicates a wide range in the ESG score disparities between acquirer and target firms at the time of acquisition. Drilling down into the specific ESG pillars, the Environmental Pillar score exhibits a mean difference of -25.734, coupled with a high standard deviation of 27.293, signaling that there is considerable variation in the environmental performance between target and acquirer firms. This variability is further emphasized by the strong and statistically significant correlation (0.815) with the overall ESG score difference, reinforcing that environmental considerations are a major component of the observed ESG score discrepancies. The Social Pillar score difference further illustrates this trend, with a mean of -16.555 and a standard deviation of 23.632, pointing to a significant but slightly less variable disparity in social performance metrics between target and acquirer companies. The very strong correlation with the overall ESG score difference (0.842) is significant at the 0.01 level, which suggests that social factors are also a critical driver in the total ESG score difference. Conversely, although still significant, the Governance Pillar score

difference shows a lower mean of -18.045 and the highest variability, indicated by the standard deviation of 27.428. The positive but relatively weaker correlation with the overall ESG score difference (0.652) indicates that governance discrepancies, while still relevant, may not be as pronounced in their contribution to the overall ESG differences as environmental and social factors. The acquirer's ESG deltas, reflecting changes in ESG scores post-acquisition, are relatively small in mean (ranging from 1.101 to 5.152 for the different pillars), with standard deviations suggesting moderate variability (from 7.701 to 13.542). Notably, the acquirer's stakeholder engagement metric shows a negative mean (0.632) with a small standard deviation (0.484), and it is inversely correlated with all ESG score differences, with correlation coefficients ranging from -0.190 to -0.333, all significant at least at the 0.05 level. The two-year BHAR has a small negative mean (-0.112) and a standard deviation of 1.409, showing little correlation with the ESG metrics, indicating that long-term abnormal returns are not strongly linked to the ESG differences in this sample.

The financial metrics of the acquirer, such as revenues (mean of 20,919.768 with a very large standard deviation of 34,367.222), operating margin, leverage ratio, and asset turnover, show few significant correlations with ESG scores, which suggests that the financial performance and structure of the acquirer are not strongly connected to ESG factors in the context of these transactions. For the target companies, revenues have a mean of 6,171.800 and a large standard deviation of 10,221.714, which correlates positively with the overall ESG score difference (0.237, significant at the 0.01 level). This indicates that larger targets tend to have a wider ESG score gap with their acquirers. The variables' Cross-Border' and 'Cross-Industry' reflect the nature of the acquisition transactions and have means of 0.274 and 0.402, respectively, with moderate standard deviations (0.448 and 0.492), and show some correlations with other variables.

Figure 4.2: Means, Standard Deviations, and Correlations among all Variables

Means, standard deviations and correlations among all variables

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Target - Acquiror ESG Difference - ESG Score	(19.617)	20.366	1.000																		
Target - Acquiror ESG Difference - Environmental Pillar Score	(25.734)	27.293	.815**	1.000																	
Target - Acquiror ESG Difference - Social Pillar Score	(16.555)	23.632	.842**	.661**	1.000																
Target - Acquiror ESG Difference - Governance Pillar Score	(18.045)	27.428	.652**	.299**	.258**	1.000															
Acquiror ESG Deltas - ESG Score	3.898	7.701	.387**	.246**	.273**	.367**	1.000														
Acquiror ESG Deltas - Environmental Pillar Score	4.141	9.968	.339**	.341**	.294**	0.146	.684**	1.000													
Acquiror ESG Deltas - Social Pillar Score	5.152	9.564	0.171	0.080	.205*	0.094	.728**	.400**	1.000												
Acquiror ESG Deltas - Governance Pillar Score	1.101	13.542	.316**	0.152	0.129	.468**	.628**	0.180	0.068	1.000											
Acquiror Stakeholder Engagement	0.632	0.484	-.274**	-.229*	-.333**	(0.055)	-.303**	-.267**	-.190*	-.192*	1.000										
BHAR 2 Years	(0.112)	1.409	(0.015)	0.052	0.030	(0.150)	0.075	0.054	0.107	0.037	(0.117)	1.000									
Acquiror Revenues	20,919.768	34,367.222	0.125	0.076	(0.005)	.216*	(0.097)	(0.058)	(0.140)	0.001	0.137	(0.048)	1.000								
Acquiror Operating Margin (Trailing 12 Months)	15.335	14.040	(0.123)	(0.062)	(0.136)	(0.031)	0.029	0.014	(0.011)	0.065	0.085	(0.053)	(0.084)	1.000							
Acquiror Leverage Ratio (Debt % of Assets)	30.745	14.125	(0.073)	(0.047)	(0.047)	(0.097)	0.009	0.020	(0.003)	0.005	0.048	(0.119)	(0.154)	0.104	1.000						
Aquiror Asset Turnover (Sales/Assets)	0.561	0.459	0.063	(0.027)	0.027	0.134	(0.070)	(0.100)	(0.059)	0.011	(0.006)	0.039	.285**	-.357**	(0.071)	1.000					
Target Revenues	6,171.800	10,221.714	.237**	.194*	0.103	.217*	(0.019)	0.034	(0.097)	0.031	.196*	0.031	.679**	(0.024)	(0.052)	.227*	1.000				
Target Operating Margin (Trailing 12 Months)	13.062	22.413	(0.014)	0.011	0.054	(0.006)	(0.004)	(0.116)	(0.048)	0.126	0.177	(0.056)	(0.011)	.530**	(0.023)	-.211*	0.078	1.000			
Cash	0.769	0.423	0.009	(0.069)	0.066	(0.023)	(0.004)	(0.098)	(0.017)	0.048	0.172	(0.005)	0.127	(0.080)	0.027	0.037	0.019	0.135	1.000		
Cross-Border	0.274	0.448	0.010	(0.089)	0.024	0.099	(0.015)	(0.048)	(0.101)	0.101	0.150	(0.019)	(0.071)	0.034	(0.147)	(0.057)	(0.023)	0.016	0.109	1.000	
Cross-Industry	0.402	0.492	0.148	0.029	0.125	0.147	0.175	0.100	0.174	0.036	-0.099	-0.093	0.117317	-0.173	0.012	.240**	0.059	-.195*	0.159	-0.073	1.000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

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4.5.1. ESG Score Differences and Acquirer Performance

The regression analysis conducted sought to ascertain the determinants of the changes in acquirers' ESG scores in the two years following an acquisition across four models. Each model targets a distinct component of ESG: overall ESG Score, Environmental Pillar Score, Social Pillar Score, and Governance Pillar Score. The R-squared values range from 0.108 to 0.248, indicating that the models can explain between 10.8% and 24.8% of the variability in ESG score deltas.

The first model, which assesses the impact on the acquirer's overall ESG score deltas in the two years following the transaction, shows a significant constant of 6.767, indicating a baseline increase in the acquirer's ESG score. This means a substantial increase in ESG Scores after acquisition, assuming all other variables are held constant. The independent variable, representing the ESG score difference between the target and acquirer at the time of the transaction, shows a positive coefficient (0.151) with a p-value indicating strong statistical significance (<0.001). This suggests that a larger disparity in ESG scores prior to the acquisition is associated with more considerable changes in the acquirer's ESG score post-acquisition. The control variables, such as the acquirer's revenues and operating margin, did not exhibit a significant relationship with the ESG score delta. The 'Cross-Industry' control variable shows a positive and nearly significant coefficient (2.436 with a p-value of 0.098), indicating that acquisitions across different industries may lead to a noticeable improvement in ESG scores. The model's R-squared value of 0.202 indicates that around 20% of the variability in the ESG score delta can be explained by the variables included in the model.

The second model, which focuses on the impact of the Environmental Pillar Score, shows a significant constant at 8.712, implying a substantial inherent increase in the environmental score after acquisition. The coefficient of 0.121, with a highly significant p-value (<0.001), reinforces the assertion that a larger pre-acquisition environmental score gap

leads to more significant post-acquisition changes. The control variables largely remain non-significant, similar to Model 1. However, the 'Acquirer Asset Turnover' shows a negative coefficient (-2.313) with some degree of significance (p-value of 0.294), suggesting that companies with higher asset turnover may experience smaller improvements in environmental scores. The model explains 17% of the variance in environmental score changes post-acquisition, as indicated by the R-squared value.

The third model, which concerns the Social Score changes, shows a significant constant (8.417) and a positive coefficient for the target-acquirer social score difference (0.077), albeit with marginal significance (p-value = 0.046). This indicates that differences in social scores may not be as strong a predictor of post-acquisition social score changes as the other ESG components. Notably, the 'Cross-Border' variable has a negative and somewhat significant coefficient (-2.398), suggesting that international acquisitions might be associated with lesser improvements in social scores. This model has the lowest explanatory power, with an R-squared value of 0.108.

Finally, the fourth model looks at governance score changes and displays a markedly different pattern from the other models. The constant is not significant (2.241 with a p-value of 0.610), indicating no substantial increase in governance scores post-acquisition. The difference in governance scores between the target and acquirer presents the highest coefficient (0.242) among all the models, with a p-value of <0.001. This signifies a strong predictive relationship; as the pre-acquisition governance score gap widens, the acquirer's governance score is likely to improve significantly after the acquisition. 'Cross-Border' transactions here show a positive coefficient (1.319), although not significant, hinting that international acquisitions might relate positively to governance score improvements. With an R-squared value of 0.248, this model has the highest explanatory power, indicating that the variables in the model can account for approximately 25% of the variance in governance score changes.

In summary, the regression results suggest that the Target - Acquirer ESG Difference Average and Acquirer Revenues are significant predictors of the change in the acquirer's ESG scores post-acquisition. Hypothesis 1, which posits a linear relationship between the delta in ESG ratings of the target and acquirer at the time of the acquisition announcement and the subsequent development of the acquirer's ESG rating post-announcement, is hence confirmed. Next to this, the assumption that this relationship works both in a positive and negative direction is confirmed. An ESG rating edge of the acquirer versus its target slows down post-acquisition ESG advancements for the acquirer and vice versa, is confirmed.

Figure 4.3: Regression Analysis

Regression Analysis of the Relationship for ESG Score Deltas (2-Year Post-Acquisition Period)

	Model 1 (ESG) [a]		Model 2 (Env.) [b]		Model 3 (Soc.) [c]		Model 4 (Gov.) [d]	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
(Constant)	6.767	0.010	8.712	0.010	8.417	0.013	2.241	0.610
Independent Variables:								
Target - Acquiror ESG Difference - ESG Score	0.151	0.000						
Target - Acquiror ESG Difference - Environmental Score			0.121	0.000				
Target - Acquiror ESG Difference - Social Score					0.077	0.046		
Target - Acquiror ESG Difference - Governance Score							0.242	0.000
Control Variables:								
Acquiror Revenues	0.000	0.300	0.000	0.403	0.000	0.304	0.000	0.481
Acquiror Operating Margin (Trailing 12 Months)	0.048	0.434	0.069	0.388	0.023	0.769	0.027	0.792
Acquiror Leverage Ratio (Debt % of Assets)	-0.001	0.976	-0.001	0.985	-0.030	0.650	0.041	0.628
Aquiror Asset Turnover (Sales/Assets)	-1.163	0.483	-2.313	0.294	-1.382	0.526	0.258	0.927
Target Revenues	0.000	0.904	0.000	0.548	0.000	0.880	0.000	0.854
Target Operating Margin (Trailing 12 Months)	-0.011	0.777	-0.077	0.119	-0.014	0.776	0.049	0.438
Cash	0.009	0.996	-1.027	0.648	-0.388	0.862	1.852	0.525
Cross-Border	-0.416	0.788	-0.415	0.839	-2.398	0.239	1.319	0.620
Cross-Industry	2.436	0.098	2.272	0.237	3.453	0.073	-0.346	0.890
Number of Transactions	117		117		117		117	
F-Value	2.690		2.171		1.285		3.497	
R-Square	0.202		0.170		0.108		0.248	
Adjusted R-Square	0.127		0.092		0.024		0.177	

a. Dependent Variable: Acquiror ESG Score Delta (2-Year Post-Acquisition Period)
b. Dependent Variable: Acquiror Environmental Score Delta (2-Year Post-Acquisition Period)
c. Dependent Variable: Acquiror Social Score Delta (2-Year Post-Acquisition Period)
d. Dependent Variable: Acquiror Governance Score Delta (2-Year Post-Acquisition Period)

4.5.2. Moderating Role of Acquirer Stakeholder Engagement

This section presents the results from four analyses designed to assess the moderating impact of the acquirer's stakeholder engagement on the relationship between target-acquirer differences in ESG scores and the post-acquisition ESG score changes of the acquirer. Across all models, the coefficients for the differences in ESG scores and their specific pillars between targets and acquirers are consistently positive and significant across the models, suggesting that greater differences in these scores are associated with an increase in the outcome variable. In contrast, higher levels of acquirer stakeholder engagement are associated with a decrease in the outcome variable across all models. A suggestive moderation effect of Acquirer Stakeholder Engagement has been identified for the analysis focusing on overall ESG Scores, while a definitive and statistically significant moderation effect has been identified through the Social Pillar Score analysis.

For the overall ESG Score, the model shows an R-squared value of 0.2132, suggesting that approximately 21.32% of the variance in the outcome variable is explained by the predictors and their interaction with the overall model being significant (F = 10.2071, p < 0.001). The coefficient for the Target – Acquirer Difference in ESG scores is positive and significant with a p-value of 0.0013, suggesting that as the difference in ESG scores between the target and the acquirer increases, there is a corresponding positive effect on the outcome variable. The effect of Acquirer Stakeholder Engagement is negative at a coefficient of -5.4543 and significant at a p-value of 0.0033, indicating that higher levels of acquirer stakeholder engagement are associated with a decrease in the outcome variable. The interaction term (Int_1) between the Target – Acquirer ESG Score Difference and Acquirer Stakeholder Engagement is not significant at the conventional 0.05 level (Coeff = -0.1391, p = 0.0842), although it approaches significance, suggesting a potential moderation effect that is not fully confirmed. The test for the highest order unconditional interaction (X*W) yields a change in

R-squared of 0.0211 with an F value of 3.0354, further indicating that the moderation effect is suggestive but not definitive at the conventional significance levels.

Focusing on the Environmental Pillar Score, the coefficient for the Target - Acquirer Environmental Score Difference is positively significant at a p-value of 0.0035, implying that increases in the environmental score difference between target and acquirer lead to an increase in the dependent variable. The Acquirer Stakeholder Engagement variable has a negative significant effect (Coeff = -6.3788, p = 0.0083), suggesting that greater engagement levels are associated with a decrease in the dependent variable. However, the interaction term (Int_1) between the Target - Acquirer Environmental Score Difference and Acquirer Stakeholder Engagement is not statistically significant at the 0.05 level, suggesting that the evidence for a moderating effect of stakeholder engagement on the relationship between environmental score differences and the dependent variable is inconclusive.

For the Social Pillar Score, the coefficient for the Target – Acquirer Social Score Difference is positively significant (Coeff = 0.2113, p = 0.0065), suggesting an increase in the dependent variable with an increase in the social score difference between the target and acquirer companies. Also, here, the effect of Acquirer Stakeholder Engagement is negatively significant at a coefficient of -4.7381 and a p-value of 0.0248, indicating that higher levels of stakeholder engagement are associated with a reduction in the dependent variable. Notably, the interaction term (Int_1) between the Target - Acquirer Social Score Difference and Acquirer Stakeholder Engagement is statistically significant (Coeff = -0.1961, p = 0.0282), indicating a significant moderation effect. This is further supported by the analysis of the highest order unconditional interactions (X*W), which demonstrates a noticeable change in R-squared (R2-chng = 0.0394) with an F value of 4.9421, establishing a statistically significant moderation effect. The conditional effects analysis for Acquirer Stakeholder Engagement at levels 0 and 1 illustrates that while the relationship between the Target - Acquirer Social Score Difference

and the dependent variable is significantly positive when stakeholder engagement is at level 0, this effect diminishes to insignificance when engagement is at level 1 (Effect = 0.0152, p = 0.7328).

Finally, for the Governance Pillar Score, the coefficient for the Target - Acquirer Governance Score Difference is positive and statistically significant ($p < 0.001$), indicating that a greater difference in governance scores between target and acquirer correlates with an increase in the outcome variable. Also in this case, Acquirer Stakeholder Engagement shows a negative and significant effect (p = 0.0305), implying that heightened levels of stakeholder engagement are associated with a decrease in the dependent variable. The interaction term (Int_1) representing the interaction between Target - Acquirer Governance Score Difference and Acquirer Stakeholder Engagement, however, is not statistically significant (Coeff = -0.0796, p = 0.3785).

Hypothesis 2, which assumes a moderating role of an acquirer's stakeholder engagement in the relationship between target–acquirer ESG differences and post-acquisition ESG score changes of the acquirer, is hence partly confirmed.

Figure 4.4: Moderation Analysis

Acquiror Stakeholder Engagement: Interaction with Target - Acquiror ESG Score Difference

Term	Coeff	SE	t	p	LLCI	ULCI
constant	9.831	1.370	7.179	0.000	7.118	12.544
Target - Acq. Dif. - ESG	0.234	0.071	3.301	0.001	0.093	0.374
Acq. Stakeholder Engagement	-5.454	1.817	-3.001	0.003	-9.055	-1.854
Int_1	-0.139	0.080	-1.742	0.084	-0.297	0.019

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.021	3.035	1	113	0.084

Conditional Effects of the Focal Predictor

Acq. Stakeholder Engagement	Effect	SE	t	p	LLCI	ULCI
0	0.234	0.071	3.301	0.001	0.093	0.374
1	0.094	0.037	2.550	0.012	0.021	0.168

Model Summary

Metric	Value
R	0.462
R-sq	0.213
F	10.207
p	0.000

Level of confidence for all confidence intervals in output: 95.0000%

Acquiror Stakeholder Engagement: Interaction with Target - Acquiror Env. Pillar Score Difference

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	10.916	1.786	6.113	0.000	7.379	14.454
Target - Acq. Dif. - Env	0.187	0.063	2.983	0.004	0.063	0.312
Acq. Stakeholder Engagement	-6.379	2.374	-2.687	0.008	-11.081	-1.676
Int_1	-0.108	0.073	-1.477	0.143	-0.253	0.037

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.016	2.182	1	113	0.143

Model Summary

Metric	Value
R	0.412
R-sq	0.170
F	7.710
p	0.000

Level of confidence for all confidence intervals in output: 95.0000%

Acquiror Stakeholder Engagement: Interaction with Target - Acquiror Social Pillar Score Difference

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	8.853	1.483	5.970	0.000	5.915	11.791
Target - Acq. Dif. - Soc	0.211	0.076	2.771	0.007	0.060	0.362
Acq. Stakeholder Engagement	-4.738	2.084	-2.274	0.025	-8.866	-0.610
Int_1	-0.196	0.088	-2.223	0.028	-0.371	-0.021

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.039	4.942	1	113	0.028

Conditional Effects of the Focal Predictor

Acq. Stakeholder Engagement	Effect	SE	t	p	LLCI	ULCI
0	0.211	0.076	2.771	0.007	0.060	0.362
1	0.015	0.044	0.342	0.733	-0.073	0.103

Model Summary

Metric	Value
R	0.314
R-sq	0.098
F	4.104
p	0.008

Level of confidence for all confidence intervals in output: 95.0000%

Acquiror Stakeholder Engagement: Interaction with Target - Acquiror Gov. Pillar Score Difference

Model Coefficients

Term	Coeff	SE	t	p	LLCI	ULCI
constant	9.066	2.190	4.141	0.000	4.728	13.404
Target - Acq. Dif. - Gov	0.284	0.077	3.710	0.000	0.133	0.436
Acq. Stakeholder Engagement	-6.010	2.742	-2.192	0.031	-11.442	-0.577
Int_1	-0.080	0.090	-0.884	0.379	-0.258	0.099

Test of Highest Order Unconditional Interactions

Term	R2-chng	F	df1	df2	p
X*W	0.005	0.782	1	113	0.379

Model Summary

Metric	Value
R	0.502
R-sq	0.252
F	12.690
p	0.000

Level of confidence for all confidence intervals in output: 95.0000%

4.5.3. ESG Scores and Stock Returns

The analysis presented in Figure 4.5 explores the relationship between ESG score differences of targets and acquirers and the Buy-and-Hold Abnormal Returns (BHAR) over a two-year post-acquisition period. Four separate models examine the individual contributions of each ESG component: overall ESG, Environmental, Social, and Governance scores. For the overall ESG Score difference between target and acquirer, the impact on BHAR is not statistically significant (coefficient = -0.002, p-value = 0.793), indicating that this metric may not strongly predict post-acquisition stock performance. Additionally, the model's low explanatory power with an R-Square of 0.051 and an F-value of 0.655 highlights its limited effectiveness. Similar findings apply to the Environmental Pillar Score, where differences between target and acquirer show no significant effect on BHAR (coefficient = 0.002, p-value = 0.703), and the model's explanatory power remains low with an R-Square of 0.052 and an F-value of 0.579. The analysis of the Social Score difference also reveals no significant correlation with BHAR (coefficient = 0.001, p-value = 0.878), with the model providing minimal explanatory insights (R-Square = 0.051, Adjusted R-Square = -0.039, F-Value = 0.566). In contrast, the Governance Score difference shows a slightly negative coefficient nearing significance (coefficient = -0.008, p-value = 0.134), hinting at a potential adverse relationship between higher governance scores in the acquirer compared to the target and lower BHAR. Although this model exhibits a slightly higher R-square (0.070), the Adjusted R-square is still negative (-0.017), and the F-value (0.804) indicates a weak fit. Overall, none of the models demonstrate significant predictive power for BHAR, with consistently negative Adjusted R-Squares indicating they do not adequately account for variations in BHAR. The repeated near-significance of the Acquiror Leverage Ratio across models suggests it may be an influential factor worth further exploration. These findings do not confirm Hypothesis 3, which proposed a relationship between ESG score differences at the time of the transaction and

the long-term abnormal stock returns of the acquirer, suggesting that other, unexamined factors may better explain the returns.

Regression Analysis of the Relationship for Buy-and-Hold Abnormal Returns (2-Year Post-Acquisition Period)

	Model 1 (ESG) [a]		Model 2 (Env.) [a]		Model 3 (Soc.) [a]		Model 4 (Gov.) [a]	
	Coefficient	*P-value*	*Coefficient*	*P-value*	*Coefficient*	*P-value*	*Coefficient*	*P-value*
(Constant)	0.367	0.475	0.428	0.398	0.411	0.417	0.225	0.657
Independent Variables:								
Target - Acquirer ESG Difference - ESG Score	-0.002	0.793						
Target - Acquirer ESG Difference - Environmental Score			0.002	0.703				
Target - Acquirer ESG Difference - Social Score					0.001	0.878		
Target - Acquirer ESG Difference - Governance Score							-0.008	0.134
Control Variables:								
Acquiror Revenues	0.000	0.173	0.000	0.187	0.000	0.188	0.000	0.222
Acquiror Operating Margin (Trailing 12 Months)	0.000	0.991	0.001	0.937	0.001	0.952	0.000	0.998
Acquiror Leverage Ratio (Debt % of Assets)	-0.015	0.134	-0.015	0.143	-0.015	0.140	-0.015	0.118
Aquiror Asset Turnover (Sales/Assets)	0.159	0.631	0.176	0.596	0.166	0.616	0.189	0.564
Target Revenues	0.000	0.249	0.000	0.305	0.000	0.279	0.000	0.212
Target Operating Margin (Trailing 12 Months)	-0.006	0.429	-0.006	0.413	-0.006	0.421	-0.005	0.501
Cash	0.188	0.579	0.199	0.558	0.187	0.581	0.142	0.674
Cross-Border	-0.191	0.535	-0.182	0.557	-0.193	0.531	-0.132	0.667
Cross-Industry	-0.339	0.247	-0.355	0.221	-0.355	0.223	-0.285	0.326
Number of Transactions	117		117		117		117	
F-Value	0.655		0.579		0.566		0.804	
R-Square	0.051		0.052		0.051		0.070	
Adjusted R-Square	-0.038		-0.038		-0.039		-0.017	

a. Dependent Variable: BHAR 2 Years

Mediating Role of Acquirer ESG Score Changes

In a mediation analysis, we further investigated the indirect effects of ESG scores on two-year buy-and-hold abnormal returns (BHAR). Although the direct influence of ESG score differences between targets and acquirers on buy-and-hold abnormal returns is predominantly non-significant, there are notable indirect effects among the different categories investigated.

For the overall ESG Score, the results indicate a positive and significant relationship between the target and acquirer score difference and the acquirer score change over two years (B = 0.1464, p < 0.001), which suggests that greater differences in ESG scores between target and acquirer correlate with a more substantial change in the acquirer's score. However, the change in the acquirer's score does not significantly predict the BHAR (B = 0.0174, p =

0.3493). An indirect effect is, however, present, as evidenced by a significant bootstrapped confidence interval (CI) ranging from 0.0025 to 0.0065, indicating that the target-acquirer score difference indirectly affects the BHAR through the acquirer score delta over two years. For the Environmental Pillar Score, the intercept indicates that when the independent variables are at zero, the expected value of the acquirer score change is significant (B = 7.3422, p < 0.001). A significant and positive relationship between the target and acquirer score difference and the acquirer's environmental score change is noted (B = 0.1244, p < 0.001). Similar to the ESG score, the environmental score change does not directly affect BHAR significantly (B = 0.0058, p = 0.6808). The bootstrapped CI for the indirect effect ranges from 0.0007 to 0.0033, suggesting a smaller but still significant indirect effect. For the Social Pillar Score, the intercept remains significant (B = 6.5282, p < 0.001), and a weaker but still significant positive effect of the score difference on the acquirer's social score change is observed (B = 0.0831, p = 0.0263). The relationship between the acquirer's social score change and BHAR is non-significant (B = 0.0155, p = 0.2707). The indirect effect's CI, ranging from 0.0013 to 0.0056, confirms a significant mediation. Finally, a strong significant intercept for the governance score indicates a robust baseline change in the acquirer's score (B = 5.2716, p < 0.0001). The target-acquirer score difference has a significant and positive influence on the acquirer's governance score change (B = 0.2311, p < 0.001), and a weak indirect influence on BHAR (B = 0.0143, p = 0.1881). The indirect effect on BHAR is also significant, with a CI ranging from 0.0033 to 0.0110, suggesting a more substantial mediation effect compared to other components.

In summary, while the direct effects of target – acquiror ESG score differences on BHAR are mostly non-significant, there are significant indirect effects. The target-acquirer score differences in ESG aspects contribute to changes in the acquirer's score, which in turn have a significant, albeit indirect, impact on the BHAR, underscoring the importance of considering ESG factors in merger and acquisition scenarios.

Hypothesis 4, which states that the change in the acquirer's ESG scores post-acquisition mediates the relationship between the initial ESG rating difference at the time of the acquisition announcement and the long-term abnormal stock returns of the acquirer, is hence confirmed.

Figure 4.6: Mediation Analysis

ESG Score: Indirect Effects on 2-Year Buy-and-Hold Abnormal Returns

	Acquiror Score Delta 2Yrs			BHAR 2Yrs		
	B	p	SE	B	p	SE
Intercept	6.7706	0	0.9173	-0.2498	0.2608	0.221
Target - Acquiror Score Difference	0.1464	0	0.0325			
Acquiror Score Delta 2Yrs				0.0174	0.3493	0.0185
R2adj.		0.1499			0.0079	
Indirect Effect				95% Bootstrapping CI		
AvgTADif → AvgAcqDt → BHAR2Yrs				[.0025, .0065]		

Environmental Score: Indirect Effects on 2-Year Buy-and-Hold Abnormal Returns

	Acquiror Score Delta 2Yrs			BHAR 2Yrs		
	B	p	SE	B	p	SE
Intercept	7.3422	0	1.1985	-0.0855	0.6816	0.2079
Target - Acquiror Score Difference	0.1244	0.0002	0.032			
Acquiror Score Delta 2Yrs				0.0058	0.6808	0.014
R2adj.		0.116			0.0042	
Indirect Effect				95% Bootstrapping CI		
AvgTADif → AvgAcqDt → BHAR2Yrs				[.0007, .0033]		

Social Score: Indirect Effects on 2-Year Buy-and-Hold Abnormal Returns

	Acquiror Score Delta 2Yrs			BHAR 2Yrs		
	B	p	SE	B	p	SE
Intercept	6.5282	0	1.0627	-0.1832	0.3216	0.184
Target - Acquiror Score Difference	0.0831	0.0263	0.0369			
Acquiror Score Delta 2Yrs				0.0155	0.2707	0.014
R2adj.		0.0422			0.0115	
Indirect Effect				95% Bootstrapping CI		
AvgTADif → AvgAcqDt → BHAR2Yrs				[.0013, .0056]		

Governance Score: Indirect Effects on 2-Year Buy-and-Hold Abnormal Returns

	Acquiror Score Delta 2Yrs			BHAR 2Yrs		
	B	p	SE	B	p	SE
Intercept	5.2716	0.0001	1.3317	-0.3261	0.0501	0.1647
Target - Acquiror Score Difference	0.2311	0	0.0407			
Acquiror Score Delta 2Yrs				0.0143	0.1881	0.0108
R2adj.		0.2191			0.0372	
Indirect Effect				95% Bootstrapping CI		
AvgTADif → AvgAcqDt → BHAR2Yrs				[.0033, .0110]		

4.6. Discussion and Implications on Theory

The results of this study reveal a significant impact of target-acquirer ESG score differences on the acquirer's ESG scores in the two years following the transaction. The acquirer's existing stakeholder engagement acts as a moderating factor. Although a statistically significant relationship between the post-acquisition ESG score changes of the acquirer and Buy-and-Hold Abnormal Returns over the following two years could not be established, there are indicators that these post-acquisition ESG score changes serve as mediating factors between the ESG score differences at the time of the acquisition and post-acquisition abnormal stock returns. The results, hence, add to existing knowledge by disentangling the post-acquisition impact on sustainability as well as financial metrics while providing a more refined view of possible moderating and mediating variables and mechanics.

4.6.1. Implications on Post-Transaction Integration

The findings underscore that differences in ESG ratings between acquirers and targets significantly influence the acquirer's ESG score changes within 24 months post-transaction announcement. Acquirers purchasing higher-rated ESG targets report notable improvements in their ESG performance relative to pre-acquisition benchmarks, corroborating prior research (Feng, 2021; Franklin, 2019). Conversely, acquiring lower-rated targets is associated with a

deceleration in ESG advancements post-transaction, resulting in acquirers experiencing a decline in ESG scores or advancing at slower rates compared to their pre-acquisition performance.

While previous studies have predominantly focused on the absorption and adaptation of superior ESG practices from targets (Feng, 2021; Tampakoudis & Anagnostopoulou, 2020), our results suggest a bi-directional dynamic encompassing both targets with stronger and weaker practices. We propose that when the target exhibits superior ESG performance, the acquirer prioritizes learning and assimilation, utilizing its dynamic capabilities to integrate and enhance these superior practices. Conversely, when the target's ESG performance is weaker, we suggest that the acquirer employs its dynamic capabilities not only to integrate but also to elevate the target's ESG practices proactively. In such instances, we posit that the acquirer's dynamic capabilities are partially transferred to the target, facilitating the absorption and adaptation of best practices within the target. This may decelerate the advancement of the acquirer's ESG performance. Ignoring the moderation effect confirmed through Hypothesis 2, this approach could corroborate previous findings by Liang et al. (2022), which state that dynamic capabilities, particularly absorptive and adaptive capabilities, are crucial for the post-merger integration of sustainability best practices. However, the moderation effect detected through further analyses may provide an indication for a different, possibly curvilinear learning benefit curve, as posited by Emanuele et al. (2021) in the context of an acquirer's stakeholder integration.

The observed moderation effect of acquirer stakeholder engagement on the relationship between target-acquirer differences and the post-acquisition changes in the acquirer's Social Pillar Scores and overall ESG Score deltas presents an initially counterintuitive finding. At first glance, one might expect that higher levels of stakeholder engagement by the acquirer would amplify the positive effects of acquiring companies with strong social performance. However,

our findings suggest that as acquirers' engagement in stakeholder practices is more established, the positive post-acquisition sustainability impact of a target with a stronger Social Pillar Score and overall ESG Score diminishes. This could be attributed to the acquirer's advanced social governance mechanisms, which likely offer a comprehensive existing framework for integrating, managing, and improving social performance post-acquisition. Thus, the acquirer's robust and established intrinsic stakeholder engagement practices might effectively neutralize the anticipated advantages of acquiring companies with higher Social Pillar and overall ESG Scores. The findings also suggest that acquirers with strong stakeholder engagement practices may be more committed to compensating for the lack of sustainability performance in targets that have lower ESG scores at the time of the transaction. In addition to their robustness against positive external impulses from targets with stronger performance, these acquirers' established stakeholder frameworks likely equip them with more sophisticated capabilities to deploy resources within acquired entities exhibiting weaker performance proactively. This could exacerbate the potential negative impact of initial social score discrepancies in the two years following the acquisitions. The resilience of acquirer post-acquisition performance, especially when integrating targets with stronger ESG scores and potentially mitigating the downsides of integrating weaker targets, suggests that the previously posited linear dependency of ESG integration on absorptive and adaptive capabilities (Liang et al., 2022) might be more accurately represented by a polynomial structure. This complexity, as identified by Bettinazzi and Zollo (2022), points to the importance of an acquirer's stakeholder orientation in shaping experiential learning from acquisitions. Additionally, such a polynomial structure would need to differentiate among targets based on their sustainability performance levels. While potentially offering coordinated benefits at a moderate level, a very strong level of existing acquirer stakeholder engagement may result in pronounced robustness against new positive impulses from the target. Additionally, a more substantial commitment may be required for the

integration of weaker targets to compensate for their shortcomings, which ties up capabilities that could otherwise be used for further sustainability advancements of the acquirer. Conversely, a very low level of stakeholder engagement, falling below the threshold set by LSEG, may increase the acquirer's susceptibility to external influences, thereby amplifying the positive impact of acquiring targets with stronger ESG performance.

### 4.6.2. Implications for Financial Performance of ESG

The results do not support the hypothesis that ESG performance differences between target and acquiror have a direct effect on Buy-and-Hold Abnormal Returns (BHAR) of acquirers' stocks within 24 months post-transaction. This, to some degree, displays the contrasting results between prior ESG research indicating beneficial financial outcomes for acquirers purchasing targets with strong ESG ratings (Arora & Dharwadkar, 2011; Harjoto & Jo, 2011; Salvi et al., 2018;) and M&A research suggesting that acquiring firms' stocks underperform in long-term post-event returns (Agrawal et al., 1992). The results however do suggest a mediated relationship wherein the target-acquirer ESG score difference impacts the buy-and-hold abnormal Return (BHAR) of the acquirer primarily through the post-acquisition ESG score delta of the acquirer. These differences in ESG aspects between target and acquirer contribute to changes in the acquirer's score, which, in turn, have a significant, albeit indirect, impact on the BHAR, underscoring the importance of considering ESG factors in merger and acquisition scenarios. However, the overall models for explaining BHAR demonstrate limited effectiveness, as indicated by the low R-squared values and non-significant F-tests. These observations could signify a market that is increasingly efficient in assimilating and reacting to ESG information, thereby reinforcing the link between ESG performance and stock price movements. Nevertheless, the results also imply that additional factors may be affecting BHAR following the acquisition that has not been explored in this study and potentially suggest more

complex relationships between different factors at play. These findings provide cautious validation for the increasing importance of ESG considerations in investment strategies and market behavior in the context of acquisitions, emphasizing an evolving landscape where ESG factors are crucial to assessing corporate value and potential.

4.6.3. Synergistic Framework of Dynamic Capabilities and RBV

We posit that these findings are underpinned by a synergistic framework of Dynamic Capabilities and the Resource-Based View of the Firm. In the visual representation below, we delineate this relationship with reference to post-acquisition ESG performance to elucidate the bi-directional impact of score differences that can accelerate or inhibit the ESG advancements of the acquirer and influence corresponding BHARs. The left side of the chart pertains to the ESG delta, highlighting the initial disparity between the target's and the acquirer's ESG scores. We concur with Liang et al. (2022) that Dynamic Capabilities are of particular importance in connection with M&A processes to ensure an integration of superior sustainability performance. However, we are highlighting that, with respect to the inverse moderation detection for stakeholder engagement, such relationship might not be linear. Over time, the dynamics of the acquisition process are reduced and the rather static environment view. In our model, we propose that the relevance of the Resource-Based View (RBV) of the Firm increases over time as the company reaches a steadier state following the dynamics of the acquisition (Hart & Dowell, 2011). Post-acquisition integration processes may have an impact on a firm's strategic resources and capabilities. The value impact of these joint dynamics may manifest in the acquirer's BHAR, as the market responds to the evolving ESG landscape, exemplified in our case by abnormal stock returns.

Figure 4.7: The Interplay of Dynamic Capabilities and Resources in Impacting Post-Acquisition Performance
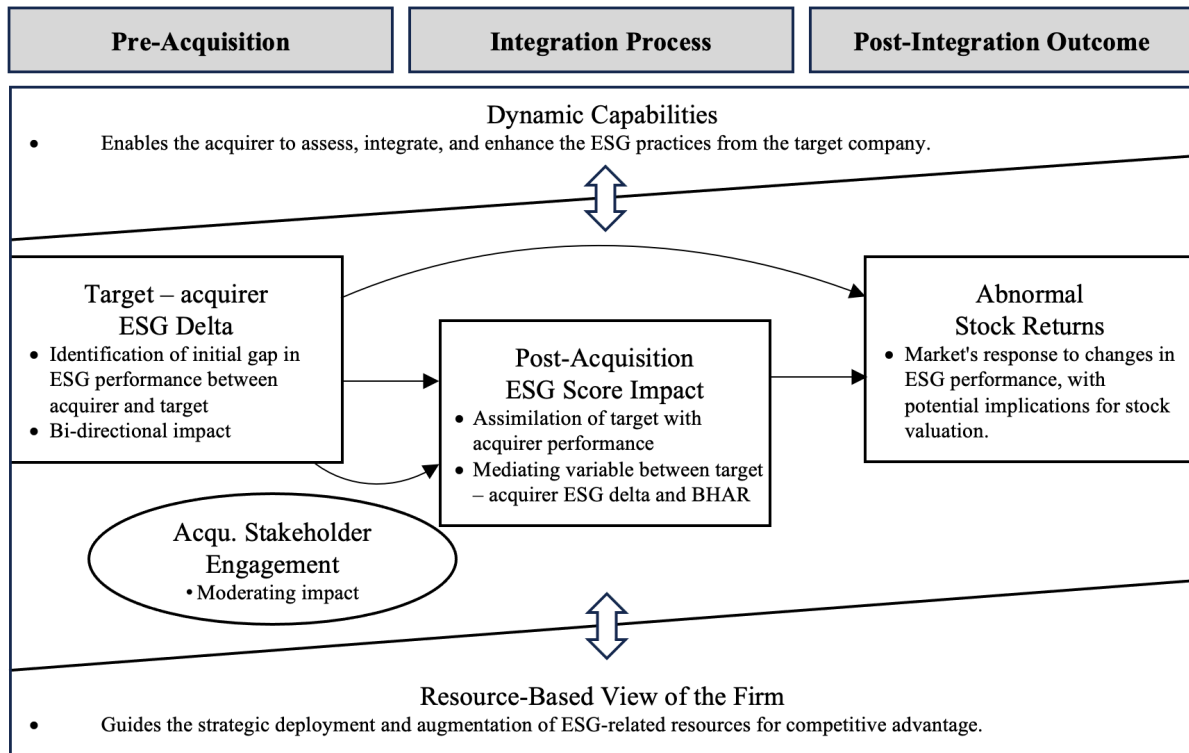
We propose a synthesis of both theoretical perspectives to understand the bi-directional impact that can either accelerate or decelerate an acquirer's ESG progression. In scenarios where the target holds an ESG advantage, the acquirer's dynamic capabilities play a critical role in recognizing, assimilating, and implementing the target's superior ESG practices (Kaul & Wu, 2016; Liang et al., 2022). However, the exact shape of such interaction benefits might be disputable and must be subject to further research. Over time, as the dynamics of the acquisition process diminish and a more stable state is achieved, the relevance of the RBV increases as resources are strategically redeployed to fully leverage them for sustained competitive advantage (Helfat et al., 2023). Simultaneously, the RBV highlights the strategic value of the target's ESG resources as essential assets for the acquirer. These valuable resources and capabilities may include the company's reputation (Barney, 1991), stakeholder relationships (Freeman, 1984), a motivated workforce (Wright et al., 1994), or exemplary environmental practices (Hart, 1995). This fusion of learning and integration is crucial for

maximizing the target's ESG potential within the acquirer's operations, thereby enhancing ESG performance in a manner that garners market recognition. When faced with a target's inferior ESG performance, dynamic capabilities catalyze resource reconfiguration, equipping the acquirer to address ESG deficiencies effectively (Kaul & Wu, 2016). In contrast, when targets demonstrate weaker ESG performance, the acquirer must deploy existing resources to bridge ESG practice gaps and elevate resources and capabilities strategically over time (Hart & Dowell, 2011; Kaul & Wu, 2016). The RBV offers an inventory of the firm's valuable resources, which can be mobilized and reshaped when amalgamated with dynamic capabilities to fulfil ESG integration objectives. This mobilization and enhancement of resources may culminate in the development of new capabilities that fortify the firm's competitive edge in ESG performance.

Figure 4.8: Overview of Dynamic Capabilities and RBV

Theory	Dynamic Capabilities	Resource-Based View of Firm
Target with Inferior ESG Score		
Purpose	Leverage dynamic capabilities to integrate the target and proactively impose improvements.	Augment the target through acquirer resources.
Strategic Actions by Acquirer	Deploy dynamic capabilities to address and uplift the target's ESG practices.	Deploy existing ESG-related resources to fill gaps in the target's practices and integrate these improvements into the overall business strategy.
Impact on Acquirer's ESG Performance	The complexities and resource demands of integration negatively impact the acquirer's own ESG advancements. Potential non-linear advancements.	Resource deployment to a target with inferior practices may lead to less efficient resource usage.
Impact of Acquirer Stakeholder Engagement	Heightened stakeholder engagement is associated with stronger commitments to address performance deficits in the target.	-
Impact on Acquirer's BHAR	Initially negative, influenced by integration costs and impaired ESG performance.	
Process Relevance Over Time	Declines over time but initially critical for assessing and initiating ESG integration. Necessary for	Increases as resources are strategically redeployed to address ESG deficiencies and leverage

	managing complexities and implementing changes.	enhanced resources for sustained competitive advantage.
Interplay between Theories	Acts as a catalyst for resource reconfiguration, enabling effective ESG gap addressing. Involves reconfiguration and development of new capabilities aligned with ESG goals.	Valuable firm resources which, combined with dynamic capabilities, are mobilized and transformed to meet ESG integration needs.

Target with Superior ESG Score		
Purpose	Focus on learning and assimilation of the target's superior ESG practices, leveraging dynamic capabilities to integrate and build upon these practices.	Seeks to acquire and strategically utilize the target's valuable ESG resources to enhance the acquirer's ESG standing.
Impact on Acquirer's ESG Performance	Benefits from integration of the target's advanced ESG strategies and practices. Potential non-linear advancements.	Strategic inclusion of the target's ESG resources supports overall ESG performance improvement.
Strategic Actions by Acquirer	Focus on learning from the target's ESG strengths; integrate and scale these practices within the acquirer's operations.	Identify and secure valuable ESG assets from the target; strategically employ these to address any ESG performance gaps.
Impact of Acquirer Stakeholder Engagement	High engagement levels are associated with lower post-acquisition ESG improvements, possibly due to resilience against external influences.	-
Impact on Acquirer's BHAR	Generally positive as the market recognizes enhanced ESG capabilities, improving innovation, stakeholder relations, risk management, and reputation.	
Process Relevance Over Time	Declines as it facilitates learning and initial assimilation of superior ESG practices but continues to support integration and address emerging challenges.	Increases as ESG resources from the target are embedded over time and drive the firm's ESG strategy and competitive edge.
Interplay between Theories	Enables recognition, assimilation, and application of superior ESG practices of the target, capturing full value of ESG capabilities and adapting these within the acquirer's operations, leading to market-recognized improvements.	Emphasizes strategic importance of target's ESG resources as key assets, enabling effective utilization beyond mere acquisition, enhancing the firm's competitive position.

4.6.4. Practical Impact

Beyond the academic sphere, the findings of this study have substantial implications for both managers and investors. The research suggests that managers should extend their focus

beyond merely financial and operational synergies and efficiency gains, including the potential ESG implications of acquisition processes. Acquirers who develop clear roadmaps for mitigating ESG risks and optimizing ESG-linked resources are likely to secure a competitive advantage and, ultimately, deliver benefits to both their stakeholder and investor base. The observed mediation impact of the acquirer's stakeholder engagement necessitates further exploration to identify effective approaches for engaging stakeholders, depending on the ESG performance levels of the acquirer and target. It may also require a re-thinking of stakeholder engagement frameworks to be more adaptive to positive external influences in case of interactions with targets showing a superior sustainability performance. Consequently, this highlights the necessity for managers to develop more agile stakeholder engagement frameworks and integration plans within the context of mergers and acquisitions. In addition to the aforementioned implications, the results have provided some evidence for the albeit indirect and complex impact of ESG considerations on post-acquisition share price developments. A more knowledgeable stance towards the nuances of post-acquisition integration, given specific target and acquirer combinations, can endow investors with the ability to anticipate potential post-acquisition outcomes and their possible impact on share prices. In this context, it would be essential to disentangle the additional factors and drivers at play in determining long-term share price impacts.

4.6.5. Limitations

The study's focus on listed large-cap equities introduces a sampling bias, raising questions about the generalizability of the observed effects to private firms or smaller global equities, sectors in which ESG impacts may manifest differently (Wang & Moini, 2012). Furthermore, the significant variance in how ESG ratings are defined and measured across different providers could impact the reliability and consistency of the study's outcomes (Berg

et al., 2019). Employing datasets from multiple rating providers would enhance the robustness of the findings by allowing for cross-validation and addressing discrepancies in ESG assessments. Additionally, since ESG ratings are typically updated annually, there is inherent uncertainty regarding the exact timing of the ratings concerning the events studied. This delay could obscure the true impact of ESG factors on post-acquisition performance, particularly in dynamic market conditions where ESG profiles can rapidly evolve. Moreover, the reliance on quantitative data may overlook qualitative aspects of ESG performance, such as management quality or cultural integration, which are critical but more complex to measure. Future research could benefit from incorporating case studies or qualitative interviews to capture these nuanced elements. Lastly, due to the complexity of the matter, the study does not fully address the confounding effects of macroeconomic variables or sector-specific trends, which could independently influence both ESG performance and share price movements. A more detailed econometric analysis that includes these variables could provide a clearer understanding of the causal relationships between ESG integration and financial performance post-acquisition.

4.7. Conclusion

The results of this study demonstrate that differences in ESG scores between targets and acquirers can significantly influence both the post-acquisition ESG performance and, indirectly and to some extent, the stock price performance of the acquirers. This relationship is bi-directional, potentially either accelerating or decelerating the ESG trajectory of the acquiring company, depending on the relative ESG performance strength of the target. Additionally, the results have revealed a moderation effect of an acquirer's existing stakeholder engagement, with well-established stakeholder engagement procedures of the acquirer leading to enhanced resilience against post-acquisition performance impacts when integrating targets with stronger ESG performance and a more pronounced negative impact when integrating targets with

weaker ESG performance. Through integrating dynamic capabilities and the Resource-Based View (RBV), this study provides a more detailed understanding of how post-acquisition integration can enhance or impede ESG performance and stock returns. While dynamic capabilities facilitate the effective alignment and integration of ESG practices, the RBV underscores the accumulation of valuable, rare, and inimitable resources and capabilities. Expanding on these insights, the study highlights the strategic importance of aligning ESG objectives during the pre-acquisition phase to mitigate risks and capitalize on opportunities during post-acquisition integration. By delving deeper into the mechanisms through which ESG factors influence corporate valuation in the context of mergers and acquisitions, future research could explore the elements within ESG practices that contribute most significantly to enhancing shareholder value and strengthening market position. This could provide actionable insights for companies looking to refine their ESG strategies in a merger or acquisition context.

4.8. Appendix

Table 4.1: Description of Variables

Variable	Description
Independent Variables	
Target - Acquiror ESG Difference - ESG Score	ESG Score difference between target and acqiror at time of the transaction
Target - Acquiror ESG Difference - Environmental Pillar Score	Environmental Pillar Score difference between target and acqiror at time of the transaction
Target - Acquiror ESG Difference - Social Pillar Score	Social Pillar Score difference between target and acqiror at time of the transaction
Target - Acquiror ESG Difference - Governance Pillar Score	Governance Pillar Score difference between target and acqiror at time of the transaction
Moderating Variables	
Acquiror Stakeholder Engagement	LSEG assessment of acquiror stakeholder engagement through bilateral communication and inclusive decision-making processes.
Mediating Variables	
Acquiror ESG Deltas - ESG Score	Acquiror ESG Score change in the two year period following the transaction
Acquiror ESG Deltas - Environmental Pillar Score	Acquiror Environmental Pillar Score change in the two year period following the transaction
Acquiror ESG Deltas - Social Pillar Score	Acquiror Social Pillar Score change in the two year period following the transaction
Acquiror ESG Deltas - Governance Pillar Score	Acquiror Governance Pillar Score change in the two year period following the transaction
Dependent Variables	
BHAR 2 Years	Acquiror Buy-and-Hold Abnormal Returns in the two year period following the transaction
Deal Control Variables	
Cash	Dummy variable for deals involving cash component
Cross-Border	Dummy variable if acquiror and buyer based in different countries
Cross-Industry	Dummy variable if acquiror and buyer based in different industries, based on SIC mid industry code
Acquiror Control Variables	
Acquiror Revenues	Revenue level of acquiring company at announcement date
Acquiror Operating Margin	Operating Margin of acquiring company at announcement date
Acquiror's Leverage Ratio (Debt % of Assets)	Leverage ratio of acquiring company at announcement date
Aquiror Asset Turnover (Sales/Assets)	Asset turnover of acquiring company at announcement date
Target Control Variables	
Target Revenues	Revenue level of target company at announcement date
Target Operating Margin	Operating Margin of target company at announcement date

Table 4.2: Regression Analysis of Acquirer ESG Score Change Post-Acquisition

Based on Target – Acquirer ESG Score Difference

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.450[a]	0.202	0.127	7.195

a. Predictors: (Constant), Target - Acquiror ESG Difference - ESG Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1392.266	10	139.227	2.690	.006[b]
	Residual	5487.000	106	51.764		
	Total	6879.266	116			

a. Dependent Variable: Acquiror ESG Score Delta (2-Year Post-Acquisition Period)

b. Predictors: (Constant), Target - Acquiror ESG Difference - ESG Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	6.767	2.569		2.634	0.010
	Target - Acquiror ESG Difference - ESG Score	0.151	0.035	0.399	4.364	0.000
	Acquiror Revenues	0.000	0.000	-0.130	-1.041	0.300
	Acquiror Operating Margin (Trailing 12 Months)	0.048	0.061	0.087	0.785	0.434
	Acquiror Leverage Ratio (Debt % of Assets)	-0.001	0.049	-0.003	-0.030	0.976
	Aquiror Asset Turnover (Sales/Assets)	-1.163	1.654	-0.069	-0.703	0.483
	Target Revenues	0.000	0.000	-0.015	-0.121	0.904
	Target Operating Margin (Trailing 12 Months)	-0.011	0.037	-0.031	-0.285	0.777
	Cash	0.009	1.694	0.000	0.005	0.996
	Cross-Border	-0.416	1.541	-0.024	-0.270	0.788
	Cross-Industry	2.436	1.459	0.156	1.669	0.098

a. Dependent Variable: Acquiror ESG Score Delta (2-Year Post-Acquisition Period)

Table 4.3: Regression Analysis of Acquirer Env. Pillar Score Change Post-Acquisition

Based on Target – Acquirer Environmental Pillar Score Difference

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412[a]	0.170	0.092	9.500

a. Predictors: (Constant), Target - Acquiror ESG Difference - Environmental Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1959.068	10	195.907	2.171	.025[b]
	Residual	9567.368	106	90.258		
	Total	11526.436	116			

a. Dependent Variable: Acquiror Environmental Score Delta (2-Year Post-Acquisition Period)

b. Predictors: (Constant), Target - Acquiror ESG Difference - Environmental Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.712	3.338		2.610	0.010
	Target - Acquiror ESG Difference - Environmental Score	0.121	0.034	0.331	3.601	0.000
	Acquiror Revenues	0.000	0.000	-0.107	-0.839	0.403
	Acquiror Operating Margin (Trailing 12 Months)	0.069	0.080	0.098	0.867	0.388
	Acquiror Leverage Ratio (Debt % of Assets)	-0.001	0.065	-0.002	-0.019	0.985
	Aquiror Asset Turnover (Sales/Assets)	-2.313	2.192	-0.106	-1.055	0.294
	Target Revenues	0.000	0.000	0.076	0.603	0.548
	Target Operating Margin (Trailing 12 Months)	-0.077	0.049	-0.173	-1.572	0.119
	Cash	-1.027	2.241	-0.044	-0.458	0.648
	Cross-Border	-0.415	2.043	-0.019	-0.203	0.839
	Cross-Industry	2.272	1.909	0.112	1.190	0.237

a. Dependent Variable: Acquiror Environmental Score Delta (2-Year Post-Acquisition Period)

Table 4.4: Regression Analysis of Acquirer Social Pillar Score Change Post-Acquisition Based on Target – Acquirer Social Pillar Score Difference

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.329[a]	0.108	0.024	9.449

a. Predictors: (Constant), Target - Acquiror ESG Difference - Social Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1146.901	10	114.690	1.285	.248[b]
	Residual	9464.106	106	89.284		
	Total	10611.007	116			

a. Acquiror Social Score Delta (2-Year Post-Acquisition Period)

b. Predictors: (Constant), Target - Acquiror ESG Difference - Social Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	8.417	3.326		2.530	0.013
	Target - Acquiror ESG Difference - Social Score	0.077	0.038	0.191	2.017	0.046
	Acquiror Revenues	0.000	0.000	-0.137	-1.033	0.304
	Acquiror Operating Margin (Trailing 12 Months)	0.023	0.080	0.034	0.295	0.769
	Acquiror Leverage Ratio (Debt % of Assets)	-0.030	0.065	-0.044	-0.455	0.650
	Aquiror Asset Turnover (Sales/Assets)	-1.382	2.172	-0.066	-0.636	0.526
	Target Revenues	0.000	0.000	-0.020	-0.151	0.880
	Target Operating Margin (Trailing 12 Months)	-0.014	0.049	-0.033	-0.285	0.776
	Cash	-0.388	2.228	-0.017	-0.174	0.862
	Cross-Border	-2.398	2.024	-0.112	-1.185	0.239
	Cross-Industry	3.453	1.908	0.178	1.810	0.073

a. Acquiror Social Score Delta (2-Year Post-Acquisition Period)

Table 4.5: Regression Analysis of Acquirer Gov. Pillar Score Change Post-Acquisition

Based on Target – Acquirer Governance Pillar Score Difference

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.498[a]	0.248	0.177	12.284

a. Predictors: (Constant), Target - Acquiror ESG Difference - Governance Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5277.273	10	527.727	3.497	<.001[b]
	Residual	15994.599	106	150.892		
	Total	21271.872	116			

a. Dependent Variable: Acquiror Governance Score Delta (2-Year Post-Acquisition Period)

b. Predictors: (Constant), Target - Acquiror ESG Difference - Governance Score, Acquiror Revenues, Acquiror Operating Margin (Trailing 12 Months), Acquiror Leverage Ratio (Debt % of Assets), Acquiror Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.241	4.379		0.512	0.610
	Target - Acquiror ESG Difference - Governance Score	0.242	0.044	0.490	5.511	0.000
	Acquiror Revenues	0.000	0.000	-0.086	-0.707	0.481
	Acquiror Operating Margin (Trailing 12 Months)	0.027	0.103	0.028	0.265	0.792
	Acquiror Leverage Ratio (Debt % of Assets)	0.041	0.084	0.043	0.486	0.628
	Aquiror Asset Turnover (Sales/Assets)	0.258	2.824	0.009	0.091	0.927
	Target Revenues	0.000	0.000	-0.022	-0.185	0.854
	Target Operating Margin (Trailing 12 Months)	0.049	0.064	0.082	0.778	0.438
	Cash	1.852	2.905	0.058	0.637	0.525
	Cross-Border	1.319	2.653	0.044	0.497	0.620
	Cross-Industry	-0.346	2.494	-0.013	-0.139	0.890

a. Dependent Variable: Acquiror Governance Score Delta (2-Year Post-Acquisition Period)

Table 4.6: Regression Analysis of Target - Acquirer

ESG Score Difference on BHAR 2 Years

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.226[a]	0.051	-0.038	1.435

a. Predictors: (Constant), Target - Acquirer ESG Difference - ESG Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.757	10	1.176	0.571	.835[b]
	Residual	218.406	106	2.060		
	Total	230.163	116			

a. Dependent Variable: BHAR 2 Years

b. Predictors: (Constant), Target - Acquirer ESG Difference - ESG Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	0.367	0.513		0.716	0.475
	Target - Acquirer ESG Difference - ESG Score	-0.002	0.007	-0.026	-0.264	0.793
	Acquirer Revenues	0.000	0.000	-0.187	-1.373	0.173
	Acquirer Operating Margin (Trailing 12 Months)	0.000	0.012	0.001	0.011	0.991
	Acquirer Leverage Ratio (Debt % of Assets)	-0.015	0.010	-0.149	-1.509	0.134
	Aquiror Asset Turnover (Sales/Assets)	0.159	0.330	0.052	0.482	0.631
	Target Revenues	0.000	0.000	0.157	1.159	0.249
	Target Operating Margin (Trailing 12 Months)	-0.006	0.007	-0.094	-0.794	0.429
	Cash	0.188	0.338	0.056	0.556	0.579
	Cross-Border	-0.191	0.307	-0.061	-0.622	0.535
	Cross-Industry	-0.339	0.291	-0.119	-1.165	0.247

a. Dependent Variable: BHAR 2 Years

Table 4.7: Regression Analysis of Target - Acquirer Environmental Score Difference on BHAR 2 Years

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.228[a]	0.052	-0.038	1.435

a. Predictors: (Constant), Target - Acquirer ESG Difference - Environmental Pillar Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.916	10	1.192	0.579	.828[b]
	Residual	218.247	106	2.059		
	Total	230.163	116			

a. Dependent Variable: BHAR 2 Years

b. Predictors: (Constant), Target - Acquirer ESG Difference - Environmental Pillar Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.428	0.504		0.849	0.398
	Target - Acquirer ESG Difference - Environmental Pillar Score	0.002	0.005	0.038	0.383	0.703
	Acquirer Revenues	0.000	0.000	-0.181	-1.328	0.187
	Acquirer Operating Margin (Trailing 12 Months)	0.001	0.012	0.009	0.079	0.937
	Acquirer Leverage Ratio (Debt % of Assets)	-0.015	0.010	-0.146	-1.474	0.143
	Aquiror Asset Turnover (Sales/Assets)	0.176	0.331	0.057	0.531	0.596
	Target Revenues	0.000	0.000	0.139	1.030	0.305
	Target Operating Margin (Trailing 12 Months)	-0.006	0.007	-0.097	-0.822	0.413
	Cash	0.199	0.339	0.060	0.588	0.558
	Cross-Border	-0.182	0.309	-0.058	-0.590	0.557
	Cross-Industry	-0.355	0.288	-0.124	-1.231	0.221

a. Dependent Variable: BHAR 2 Years

Table 4.8: Regression Analysis of Target - Acquirer

Social Score Difference on BHAR 2 Years

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.225[a]	0.051	-0.039	1.436

a. Predictors: (Constant), Target - Acquirer ESG Difference - Social Pillar Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

		ANOVA[a]				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.663	10	1.166	0.566	.838[b]
	Residual	218.500	106	2.061		
	Total	230.163	116			

a. Dependent Variable: BHAR 2 Years

b. Predictors: (Constant), Target - Acquirer ESG Difference - Social Pillar Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

	Coefficients[a]					
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.411	0.505		0.814	0.417
	Target - Acquirer ESG Difference - Social Pillar Score	0.001	0.006	0.015	0.154	0.878
	Acquirer Revenues	0.000	0.000	-0.182	-1.327	0.188
	Acquirer Operating Margin (Trailing 12 Months)	0.001	0.012	0.007	0.060	0.952
	Acquirer Leverage Ratio (Debt % of Assets)	-0.015	0.010	-0.147	-1.485	0.140
	Aquiror Asset Turnover (Sales/Assets)	0.166	0.330	0.054	0.502	0.616
	Target Revenues	0.000	0.000	0.145	1.088	0.279
	Target Operating Margin (Trailing 12 Months)	-0.006	0.007	-0.095	-0.808	0.421
	Cash	0.187	0.339	0.056	0.553	0.581
	Cross-Border	-0.193	0.308	-0.061	-0.629	0.531
	Cross-Industry	-0.355	0.290	-0.124	-1.225	0.223

a. Dependent Variable: BHAR 2 Years

Table 4.9: Regression Analysis of Target - Acquirer

Governance Score Difference on BHAR 2 Years

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.265[a]	0.070	-0.017	1.421

a. Predictors: (Constant), Target - Acquirer ESG Difference - Governance Pillar Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.224	10	1.622	0.804	.625[b]
	Residual	213.939	106	2.018		
	Total	230.163	116			

a. Dependent Variable: BHAR 2 Years

b. Predictors: (Constant), Target - Acquirer ESG Difference - Governance Pillar Score, Acquirer Revenues, Acquirer Operating Margin (Trailing 12 Months), Acquirer Leverage Ratio (Debt % of Assets), Acquirer Asset Turnover (Sales/Assets), Target Revenues, Target Operating Margin (Trailing 12 Months), Cash, Cross-Border, Cross-Industry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.225	0.506		0.445	0.657
	Target - Acquirer ESG Difference - Governance Pillar Score	-0.008	0.005	-0.150	-1.511	0.134
	Acquirer Revenues	0.000	0.000	-0.166	-1.230	0.222
	Acquirer Operating Margin (Trailing 12 Months)	0.000	0.012	0.000	-0.002	0.998
	Acquirer Leverage Ratio (Debt % of Assets)	-0.015	0.010	-0.154	-1.575	0.118
	Aquiror Asset Turnover (Sales/Assets)	0.189	0.327	0.062	0.579	0.564
	Target Revenues	0.000	0.000	0.164	1.256	0.212
	Target Operating Margin (Trailing 12 Months)	-0.005	0.007	-0.079	-0.675	0.501
	Cash	0.142	0.336	0.043	0.422	0.674
	Cross-Border	-0.132	0.307	-0.042	-0.431	0.667
	Cross-Industry	-0.285	0.288	-0.100	-0.987	0.326

a. Dependent Variable: BHAR 2 Years

Table 4.10: Moderating Impact of Acquirer Stakeholder Engagement on the Relationship

Between Target – Acquirer ESG Score Difference

and Acquirer ESG Score Delta

***************** PROCESS Procedure for SPSS Version 4.2 *****************

Y: Acquiror ESG Score Delta
X: Target - Acquiror ESG Score Difference
W: Acquiror Stakeholder Engagement
Sample Size: 117

OUTCOME VARIABLE: Acquiror ESG Score Delta

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.4617	0.2132	47.8986	10.2071	3	113	0.000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	9.8308	1.3695	7.1786	0.0000	7.1177	12.5440
Target - Acquiror ESG Score Difference	0.2335	0.0707	3.3011	0.0013	0.0934	0.3737
Acquiror Stakeholder Engagement	-5.4543	1.8173	-3.0014	0.0033	-9.0547	-1.8539
Int_1	-0.1391	0.0799	-1.7422	0.0842	-0.2973	0.0191

Product terms key:

Int_1: Target - Acquiror ESG Score Difference x Acquiror Stakeholder Engagement

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0211	3.0354	1	113	0.0842

Focal predictor: Target - Acquiror ESG Score Difference (X)
Moderator variable: Acquiror Stakeholder Engagement (W)

Conditional effects of the focal predictor at values of the moderator(s):

Acquiror Stakeholder Engagement	Effect	se	t	p	LLCI	ULCI
0	0.2335	0.0707	3.3011	0.0013	0.0934	0.3737
1	0.0944	0.0370	2.5500	0.0121	0.0211	0.1678

Table 4.11: Moderating Impact of Acquirer Stakeholder Engagement on the Relationship

Between Target – Acquirer Environmental Pillar Score Difference

and Acquirer Environmental Pillar Score Delta

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Acquiror Environmental Pillar Score Delta
X: Target - Acquiror Environmental Pillar Score Difference
W: Acquiror Stakeholder Engagement
Sample Size: 117

OUTCOME VARIABLE: Acquiror Environmental Pillar Score Delta

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.4122	0.1699	84.6717	7.7103	3	113	0.000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	10.9162	1.7856	6.1134	0.0000	7.3785	14.4538
Target - Acquiror Environmental Pillar Score Difference	0.1874	0.0628	2.9828	0.0035	0.0629	0.3119
Acquiror Stakeholder Engagement	-6.3788	2.3736	-2.6874	0.0083	-11.0813	-1.6763
Int_1	-0.1080	0.0731	-1.4770	0.1425	-0.2529	0.0369

Product terms key:

Int_1: Target - Acquiror Environmental Pillar Score Difference x Acquiror Stakeholder Engagement

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0160	2.1815	1	113	0.1425

Level of confidence for all confidence intervals in output: 95.0000

Table 4.12: Moderating Impact of Acquirer Stakeholder Engagement on the Relationship Between Target – Acquirer Social Pillar Score Difference and Acquirer Social Pillar Score Delta

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: Acquiror Social Pillar Score Delta
X: Target - Acquiror Social Pillar Score Difference
W: Acquiror Stakeholder Engagement
Sample Size: 117

OUTCOME VARIABLE: Acquiror Social Pillar Score Delta

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3135	0.0983	84.6761	4.1043	3	113	0.008

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	8.8533	1.4830	5.9698	0.0000	5.9152	11.7914
Target - Acquiror Social Pillar Score Difference	0.2113	0.0763	2.7707	0.0065	0.0602	0.3624
Acquiror Stakeholder Engagement	-4.7381	2.0835	-2.2741	0.0248	-8.8659	-0.6104
Int_1	-0.1961	0.0882	-2.2231	0.0282	-0.3709	-0.0213

Product terms key:

Int_1: Target - Acquiror Social Pillar Score Difference x Acquiror Stakeholder Engagement

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0394	4.9421	1	113	0.0282

Focal predictor: Target - Acquiror Social Pillar Score Difference (X)
Moderator variable: Acquiror Stakeholder Engagement (W)

Conditional effects of the focal predictor at values of the moderator(s):

Acquiror Stakeholder Engagement	Effect	se	t	p	LLCI	ULCI
0	0.2113	0.0763	2.7707	0.0065	0.0602	0.3624
1	0.0152	0.0443	0.3423	0.7328	-0.0727	0.1030

Level of confidence for all confidence intervals in output: 95.0000

Table 4.13: Moderating Impact of Acquirer Stakeholder Engagement on the Relationship

Between Target – Acquirer Governance Pillar Score Difference

and Acquirer Governance Pillar Score Delta

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: Acquiror Governance Pillar Score Delta
X: Target - Acquiror Governance Pillar Score Difference
W: Acquiror Stakeholder Engagement
Sample Size: 117

OUTCOME VARIABLE: Acquiror Governance Pillar Score Delta

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.502	0.252	140.8089	12.6897	3	113	0.000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	9.0662	2.1895	4.1408	0.0001	4.7284	13.4041
Target - Acquiror Governance Pillar Score Difference	0.2843	0.0766	3.7104	0.0003	0.1325	0.4361
Acquiror Stakeholder Engagement	-6.0098	2.7421	-2.1917	0.0305	-11.4424	-0.5773
Int_1	-0.0796	0.0900	-0.8842	0.3785	-0.2579	0.0988

Product terms key:

Int_1: Target - Acquiror Governance Pillar Score Difference x Acquiror Stakeholder Engagement

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	0.0052	0.7818	1	113	0.3785

Level of confidence for all confidence intervals in output: 95.0000

Table 4.14: Mediating Influence of Acquirer Env. Pillar Score Delta on the Relationship

Between Target – Acquirer Environmental Pillar Score Differences

and Two-Year Buy-and-Hold Abnormal Returns

**************** PROCESS Procedure for SPSS Version 4.2 ****************
Y: 2-Year BHAR
X: Target - Acquiror Environmental Pillar Score Difference
M: Acquiror Environmental Pillar Score Delta
Sample Size: 117

OUTCOME VARIABLE: Acquiror Environmental Pillar Score Delta

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.3406	0.1160	88.6009	15.0940	1	115	0.0002

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	7.3422	1.1985	6.1263	0.0000	4.9682	9.7161
Target - Acquiror Environmental Pillar Score Difference	0.1244	0.0320	3.8851	0.0002	0.0610	0.1878

OUTCOME VARIABLE: BHAR2Yrs

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.0646	0.0042	2.0105	0.2390	2	114	0.7878

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	-0.0855	0.2079	-0.4114	0.6816	-0.4974	0.3264
Target - Acquiror Environmental Pillar Score Difference	0.0020	0.0051	0.3813	0.7037	-0.0082	0.0121
Acquiror Environmental Pillar Score Delta	0.0058	0.0140	0.4124	0.6808	-0.0220	0.0336

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.002	0.0051	0.3813	0.7037	-0.0082	0.0121

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Acquiror Environmental Pillar Score Delta	0.0007	0.0013	-0.0018	0.0033

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 4.15: Mediating Influence of Acquirer Social Pillar Score Delta on the Relationship Between Target – Acquirer Social Pillar Score Differences and Two-Year Buy-and-Hold Abnormal Returns

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: 2-Year BHAR
X: Target - Acquiror Social Pillar Score Difference
M: Acquiror Social Pillar Score Delta
Sample Size: 117

OUTCOME VARIABLE: Acquiror Social Pillar Score Delta

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.2054	0.0422	88.3761	5.0665	1	115	0.0263

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	6.5282	1.0627	6.1433	0.0000	4.4233	8.6331
Target - Acquiror Social Pillar Score Difference	0.0831	0.0369	2.2509	0.0263	0.0100	0.1563

OUTCOME VARIABLE: BHAR2Yrs

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1074	0.0115	1.9957	0.6655	2	114	0.5160

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	-0.1832	0.1840	-0.9955	0.3216	-0.5478	0.1814
Target - Acquiror Social Pillar Score Difference	0.0005	0.0057	0.0914	0.9274	-0.0107	0.0118
Acquiror Social Pillar Score Delta	0.0155	0.0140	1.1067	0.2707	-0.0123	0.0433

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
0.0005	0.0057	0.0914	0.9274	-0.0107	0.0118

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Acquiror Social Pillar Score Delta	0.0013	0.0019	-0.0021	0.0056

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

Table 4.16: Mediating Influence of Acquirer Gov. Pillar Score Delta on the Relationship

Between Target – Acquirer Governance Pillar Score Differences

and Two-Year Buy-and-Hold Abnormal Returns

**************** PROCESS Procedure for SPSS Version 4.2 ****************

Y: 2-Year BHAR
X: Target - Acquiror Governance Pillar Score Difference
M: Acquiror Governance Pillar Score Delta
Sample Size: 117

OUTCOME VARIABLE: Acquiror Governance Pillar Score Delta

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.4681	0.2191	144.4405	32.2708	1	115	0.0000

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	5.2716	1.3317	3.9585	0.0001	2.6337	7.9095
Target - Acquiror Governance Pillar Score Difference	0.2311	0.0407	5.6807	0.0000	0.1505	0.3117

OUTCOME VARIABLE: BHAR2Yrs

Model Summary

R	R-sq	MSE	F	df1	df2	p
0.1929	0.0372	1.9438	2.2032	2	114	0.1151

Model Coefficients

Variable	coeff	se	t	p	LLCI	ULCI
constant	-0.3261	0.1647	-1.9803	0.0501	-0.6523	0.0001
Target - Acquiror Governance Pillar Score Difference	-0.0110	0.0053	-2.0592	0.0418	-0.0216	-0.0004
Acquiror Governance Pillar Score Delta	0.0143	0.0108	1.3242	0.1881	-0.0071	0.0358

DIRECT AND INDIRECT EFFECTS OF X ON Y

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-0.011	0.0053	-2.0592	0.0418	-0.0216	-0.0004

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Acquiror Governance Pillar Score Delta	0.0033	0.0037	-0.0032	0.0110

Level of confidence for all confidence intervals in output: 95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

5. Concluding Remarks

This thesis aimed to deepen our understanding of sustainability as a corporate capability, with a particular emphasis on corporate valuation, employee satisfaction, and mergers and acquisitions. It includes three underlying papers that explore how firms can leverage ESG initiatives to create competitive advantages through operational, strategic, and financial outcomes, focusing on value considerations and critical stakeholder relationships. The empirical study exploring the ESG sweet spot elucidated the inverted U-shaped relationship between environmental performance and acquisition premia, offering insights into the role of environmental performance and the dynamics between acquirers and targets in for corporate valuations. Utilizing natural language processing, a further research paper in this thesis investigated the effects of ESG Tilt and Momentum on employee satisfaction. This study deepened our understanding of the static and dynamic impacts of sustainability, examining them through the lens of perceived organizational justice and employee expectations as mediating factors. Finally, a study examined the impact of integrating targets with differing ESG ratings on the sustainability and financial performance of acquiring firms. Focused on dynamic capabilities and the resource-based view, the study evaluated how targets with varying levels of ESG performance, moderated by stakeholder engagement, affect an acquirer's ESG progress and financial performance post-transaction. Together, the results demonstrate that a knowledgeable approach to sustainability initiatives can indeed further the optimization of valuations, stakeholder relationships, and operational outcomes in the initially defined context of ESG as a strategic capability. The research presented not only advances the existing literature but also underscores the continuous necessity for research, collaboration, and commitment to fostering positive change.

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