MASTERARBEIT | MASTER'S THESIS

Titel | Title

Tone matters: Exploring the Link Between CEO Tone, Financial Results and ESG Outcomes in Different Sectors

verfasst von | submitted by

Teodora Taseva BS

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien | Vienna, 2025

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 066 915
Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:	Masterstudium Betriebswirtschaft
Betreut von | Supervisor:	Aveed Raha BSc MSc PhD

Abstract

This study investigates the relationship between Chief Executive Officer's (CEO) tone and corporate performance, focusing on both financial results and Environmental, Social, and Governance (ESG) outcomes across six industry sectors. Using textual analysis software (LIWC-22), the research examines three linguistic dimensions, Emotional Tone, Clout and Authenticity, in CEO letters from annual and sustainability reports published for the fiscal year 2023. The analysis incorporates Return on Assets (ROA) as a financial metric and ESG risk scores from Sustainalytics to evaluate sustainability performance. Findings reveal that companies with stronger financial performance generally exhibit higher Clout and Emotional Tone, suggesting a strategic use of optimistic and confident language. However, low Authenticity scores in such firms imply more curated communication. In contrast, firms with weaker performance often display higher Authenticity, indicating greater transparency or reduced message control. The relationship between tone and ESG performance follows a similar pattern, though exceptions suggest tone may be used to mitigate reputational risk. Sectoral and cultural differences further influence tone strategies, with notable variations across industries and regions. This thesis contributes to the growing literature on corporate communication by highlighting tone as a strategic element in executive messaging and its association with both financial and ESG performance.

Kurzfassung

Diese Studie untersucht die Beziehung zwischen dem Tonfall von CEOs und der Unternehmensleitung und konzentriert sich dabei sowohl auf finanzielle Ergebnisse als auch auf Umwelt-, Sozial- und Governance-Ergebnisse (ESG) in sechs Branchen. Mithilfe einer Textanalyse Software (LIWC-22) werden drei sprachliche Dimensionen, Emotional Tone, Clout und Authenticity, in CEO-Briefen aus Jahres- und Nachhaltigkeitsberichten, die für das Geschäftsjahr 2023 veröffentlicht werden, untersucht. Die Analyse bezieht die Kapitalrendite (ROA) als Finanzkennzahl und ESG-Risikoscores von Sustainalytics zur Bewertung der Nachhaltigkeitsleistung ein. Die Ergebnisse zeigen, dass Unternehmen mit besserer finanzieller Performanz in der Regel eine höhere Schlagkraft und einen emotionalen Ton aufweisen, was auf eine strategische Verwendung einer zuversichtlichen und optimistischen Sprache schließen lässt. Niedrige Authentizitätswerte in solchen Unternehmen deuten jedoch auf eine eher kuratierte Kommunikation hin. Im Gegensatz dazu weisen Unternehmen mit schwächerer Leistung oft eine höhere Authentizität auf, was auf eine größere Transparenz oder eine geringere Kontrolle der Botschaften hindeutet. Die Beziehung zwischen Tonalität und ESG-Leistung folgt einem ähnlichen Muster, obwohl Ausnahmen darauf hindeuten, dass Tonalität zur Minderung des Reputationsrisikos eingesetzt werden kann. Auch sektorale und kulturelle Unterschiede beeinflussen die Strategien der Tonalität, und zwar mit bemerkenswerten Unterschieden zwischen Regionen und Branchen. Diese Arbeit trägt zur wachsenden Literatur über die Unternehmenskommunikation bei, indem sie den Tonfall als strategisches Element in der Kommunikation von Führungskräften und seinen Zusammenhang mit der finanziellen und ESG-Leistung hervorhebt.

Contents

List of Figures

List of Tables

List of Appendixes

List of Abbreviations

ANOVA Analysis of Variance

CEO Chief Executive Office

CSR Corporate social responsibility

CSRD Corporate Sustainability Reporting Directive

ESG Environmental, Social and Governance

LIWC Linguistic Inquiry and Word Count

MEI Material ESG Issue

MRS Managed Risk Score

ROA Return on Assets

SMS Short Messaging Service

U.S. United States

UK United Kingdom

1. Introduction

In the past two decades, ESG criteria has emerged as a key factor in evaluating corporate behavior and long-term performance. ESG considerations now play a vital role not only in investment decision-making but also in shaping how companies formulate strategy, report performance and engage with stakeholders (Ioannou & Serafeim, 2015). While ESG has become central to corporate strategy and investor evaluations, the global regulatory landscape remains fragmented. Recent policy shifts, such as the EU's 2025 Omnibus simplification package, have raised questions about the long-term consistency and scope of mandatory ESG reporting (Omnibus Package, 2025).

In this evolving landscape, the role of corporate leadership, particularly that of CEOs, has attracted significant scholarly and practical attention. CEOs are accountable not only for delivering financial results, but also for representing the company's purpose, values and sustainability commitments (Waldman & Siegel, 2008). Their public statements, particularly those in annual reports, play a crucial role in shaping corporate narratives and influencing stakeholder perceptions (Craig & Brennan, 2012). As international businesses navigate complex regulatory environments, cultural differences and sustainability imperatives, the tone and content of CEO communications can significantly impact how companies are perceived by investors, regulators and the public (Loughran & McDonald, 2011).

1.1 Research Problem

Corporate annual reports are a vital element of corporate public communication, providing a formal, regulated way for companies to communicate key information to their stakeholders. Required by the Securities and Exchange Commission for all publicly listed companies, these reports provide reliable and transparent disclosure of a company's financial performance. They include essential financial data about the company, accompanied by narrative sections prepared by the management team. Analysts, shareholders and investors can utilize these reports to gain insight into the company's profitability, risks, and strategic direction (Yuthas et al., 2002).

In recent years, however, the scope of corporate reporting has expanded to include sustainability dimensions, most notably through ESG reporting (Hoang, 2018; Aziz, & Alshdaifat, 2024). This evolution reflects a growing recognition that financial performance alone is not sufficient to evaluate a company's long-term value and societal impact (Beck et al., 2017). ESG reporting addresses critical non-financial factors, including environmental impact (e.g., resource usage and carbon emissions), social responsibility (for instance diversity, labor practices and human rights) and governance structures (e.g., board accountability and executive compensation) (Cucari et al., 2018; Torre et al., 2020). When integrated with the management's operational analysis, the financial statements enable stakeholders to assess the total value and sustainability of the business, providing a comprehensive view of both historical performance and future potential (Yuthas et al., 2002).

Among the various sections of the annual report, the CEO letter assumes a particularly significant role in influencing stakeholders' perceptions and shaping their understanding of the company's strategic direction. In these letters, executives provide a strategic overview of the company’s past performance, current challenges and offer predictions for future expansion (Bournois & Point, 2006). However, the predictive value of these statements from a financial perspective can often be limited (Bournois & Point, 2006), primarily due to the inherent difficulty in objectively evaluating the company’s true financial condition based solely on these narrative accounts (Smith & Taffler, 2000).

While the CEO letter traditionally serves the purpose of communicating financial performance and strategic direction, its role has evolved to encompass broader non-financial disclosures, particularly related to sustainability. In sustainability management reports, CEO letters often provide a combination of non-financial and financial disclosures. These letters typically include evaluations of the firm's performance, progress toward achieving corporate objectives, reviews of internal processes, responses to customer satisfaction and roadmaps for sustainable management (Na et al., 2020). Although CEO letters are a valuable source of information for stakeholders, it is essential to recognize that they are not in the scope of formal auditing procedures. This absence of formal auditing may affect the reliability of the non-financial information provided, making these letters more subjective compared to audited financial statements (Aerts et al., 2008). In addition, this distinction raises concerns about the integrity of the information presented, particularly as stakeholders increasingly demand accountability in both financial and ESG metrics.

Previous research has highlighted the significant influence that the tone of CEO communications can have on corporate outcomes. For instance, Kahveci (2016) found a strong positive correlation between the tone employed in CEO letters and key indicators, such as corporate governance ratings and financial performance. His findings suggest that a more confident and optimistic tone in these communications tends to reinforce stakeholder trust and positively influence perceptions of a company's overall performance, emphasizing the importance of tone in shaping financial success and corporate reputation (Kahveci, 2016).

Similarly, recent findings by Mlawu et al. (2023) demonstrate that financial performance has a statistically significant positive impact on the tone of CEO statements. This implies that an improvement in financial outcomes tends to be accompanied by a more positive narrative tone, whereas financial downturns often correspond with a more cautious or negative tone.

However, this view is not universally accepted. Craig and Brennan (2012) offer a contrasting perspective, challenging the assumption that linguistic elements in CEO letters have a direct and significant effect on corporate reputation. Their analysis, based on a broader sample of Fortune 500 companies, revealed no statistically significant link between CEO language choices and corporate reputation. Instead, they argue that factors, such as company size and visibility, play a more decisive role in shaping stakeholder perceptions, thereby questioning the extent to which CEO tone alone determines corporate reputation (Craig & Brennan, 2012).

1.2 Research objectives and questions

While numerous studies have explored the relationship between CEO tone and either economic outcomes or corporate reputation, the intersection between tone, financial results, and ESG outcomes has been explored to a lesser extent. ESG represents a framework used to evaluate a company's performance in three key areas beyond financial metrics. These criteria include a company's environmental impact, such as pollution control measures, social responsibilities, which refers to the internal social policies and governance practices, including the use of practices in accordance with ethical behaviors (Martiny et al., 2024). Moreover, the extent to which these dynamics vary across different industries remains underexplored. As ESG considerations continue to gain prominence in corporate decision-making, examining how CEO tone conveys both financial and non-financial factors is critical for understanding stakeholder perceptions and company performance across industries. The growing importance of ESG reporting continues to be reinforced at the European Union level, most recently through the Omnibus simplification package adopted by the European Commission in February 2025. While the Corporate Sustainability Reporting Directive (CSRD) initially aimed to standardize sustainability reporting across sectors and included approximately 6,000 large public-interest entities with over 500 employees, the Omnibus proposal introduces significant changes. Under the new proposal, the scope of the CSRD would be narrowed substantially, approximately 80% of previously covered companies would be excluded. Going forward, only companies with more than 1,000 employees and either annual revenues exceeding €50 million or total assets exceeding €25 million would remain subject to the directive (Omnibus Package, 2025). Within this evolving regulatory landscape, understanding how CEO tone reflects both non-financial and financial factors can provide deeper insights into stakeholder perceptions and company performance across sectors. In this context, further research is needed to explicate these intersections, particularly in the evolving landscape of corporate accountability and stakeholder engagement.

This study seeks to address the overarching research question: How does the tone of CEO letters relate to financial performance and ESG outcomes across different industrial sectors? To answer this, the study aims to systematically compare the tone of CEO letters across a range of industrial sectors, focusing on identifying sectoral differences in linguistic choices and communicative strategies. Moreover, it aims to focus on uncovering patterns unique to specific industries in the relationship between CEO tone, economic performance and ESG outcomes. This will identify whether the observed relationships exhibit industry-specific variations. By achieving these objectives, this study aims to contribute to the existing literature by examining the underexplored relationship of CEO tone, financial results and sustainability outcomes, particularly in the view of growing significance of ESG considerations in corporate governance.

1.3 Structure of the Thesis

To address the research objectives and explore the relationships between CEO tone, financial performance and ESG outcomes, the thesis is organized into five chapters. The second chapter presents a comprehensive literature review, critically evaluating existing studies on CEO tone, financial performance and ESG outcomes and identifies the research gap that this study addresses. Next, the methodology chapter outlines the research design, data collection and analytical methods used to explore the relationships between these variables. The fourth chapter presents the empirical findings of the study, highlighting key patterns and relationships across industries. The final chapter, conclusion, interprets these findings in relation to the existing literature, draws implications for both research and practice, and suggests directions for future studies.

2. Theory and Literature Review

2.1 Theory Review

2.1.1 Stakeholder Theory

This thesis is organized to systematically address the research question and enhance the understanding of the interaction between CEO tone, financial performance and ESG outcomes. These elements are critical since they reflect the company's ability to balance short-term financial performance with long-term sustainability goals, key concerns of both traditional shareholders and the broader group of stakeholders as outlined in Stakeholder Theory. According to this theory, introduced by Freeman (1984), companies are responsible to both shareholders and a broader group of stakeholders, including customers, employees, as well as suppliers. Furthermore, this theory asserts that organizations need to generate value for all stakeholders, rather than focusing solely on financial return for shareholders, in order to achieve long-term success and sustainability (Freeman, 1984). This broader accountability aligns closely with the increasing emphasis on ESG metrics in corporate performance evaluations, as it supports the view that a company's performance should be measured in terms of its extensive impact in addition to its financial performance.

CEO letters in annual reports serve as a primary mechanism for engaging stakeholders and aligning their interests with the company's strategy. Brennan and Merkl-Davies (2013) analyze the concept of impression management, explaining how companies use language and tone in CEO letters to shape audiences' perceptions of financial performance, as well as social and environmental outcomes. Although the study does not explicitly reference Stakeholder Theory, it highlights the significance of communication in influencing stakeholder perceptions, aligning with the core premise of Stakeholder Theory that companies must consider the interests of a diverse range of stakeholders. The tone and language employed by CEOs in these communications are therefore essential for building trust and ensuring that stakeholders, including investors, employees, and communities, understand and support the company's strategic objectives. Thus, the manner in which CEOs present financial results, sustainability goals and strategic visions in these letters becomes essential to maintaining trust and aligning stakeholder expectations with the company's long-term objectives (Brennan & Merkl-Davies, 2013).

In recent years, the rise of ESG metrics has provided a framework for companies to measure and report their performance beyond financial returns. These metrics are increasingly used by stakeholders to evaluate companies' broader social impact. Eccles, Ioannou and Serafeim (2014) highlight how companies that integrate ESG practices into their overall strategy tend to perform better in the long run, as they are able to respond to the extending expectations of stakeholders regarding sustainability and transparency (Eccles et al., 2014). This aligns with the principles of Stakeholder Theory, which advocates for companies to create value for a broad range of stakeholders, rather than prioritizing the interests of shareholders alone.

From a financial perspective, optimistic and confident CEO tones have been associated with positive stakeholder reactions, such as increased market value (Kahveci, 2016). Furthermore, Merkl-Davies and Brennan (2007) emphasize that excessive optimism in corporate narratives can lead to distrust, as stakeholders may question whether the company is over-promising or concealing negative information. In line with Stakeholder Theory, which highlights the significance of preserving trust across diverse stakeholder groups, this suggests that CEO tone must be balanced to address the concerns of all stakeholders, not just shareholders (Merkl-Davies & Brennan, 2007).

2.1.2 Upper Echelons Theory

Stakeholder Theory emphasizes the need for organizations to balance the interests of diverse stakeholder groups, including shareholders, employees and the broader community. While this perspective highlights the organizational responsibility to generate value for all stakeholders, it does not explicitly address the role of individual leaders in shaping these outcomes. This gap is addressed by Upper Echelons Theory, which focuses on how the personal characteristics, values and cognitive traits of CEOs influence strategic decisions and stakeholder engagement. The Upper Echelons Theory, introduced by Hambrick and Mason (1984), asserts that organizational outcomes are significantly influenced by the personal characteristics of top executives. According to this theory, the background, values and cognitive traits of CEOs have a significant impact on shaping corporate strategies and decision-making processes (Hambrick & Mason, 1984). As CEO tone reflects strategic priorities and organizational goals, the Upper Echelons Theory provides a useful lens for understanding how individual attributes influence the tone and content of CEO communications.

Research has extended Upper Echelons Theory by examining how specific CEO characteristics, such as age, financial expertise and gender can have an influence on the strategic outcomes. Yim (2013) argued that younger CEOs are often more risk-tolerant and aggressive in their strategic decisions, such as pursuing high-risk investments and acquisitions (Yim, 2013). In contrast, CEOs of more senior age tend to adopt more conservative corporate policies, such as reduced leverage and capital expenditures (Serfling, 2014). In addition, McClelland et al. (2012) found that younger CEOs in the United States (U.S.) are associated with lower future performance in the U.S.. In contrast to this, older-aged CEOs, with their extensive experience, are better positioned to improve company outcomes. These strategic behaviors may influence how CEOs communicate with stakeholders, as risk-tolerant CEOs might present more optimistic growth prospects, while risk-averse CEOs are likely to emphasize stability and risk management. Furthermore, Bassyouny et al. (2020) found that companies with CEOs of more senior age use a more pessimistic tone in annual reports, indicating that older-aged executives tend to be more conscientious, which could lead to a more neutral and accurate representation of the company's performance (Bassyouny et al., 2020). This suggests that the tone of CEO communications can serve as a proxy for their broader strategic priorities and decision-making styles.

In addition to age, CEO financial expertise is another critical factor that shapes both strategic decisions and communication tone. Custódio and Metzger (2014) found that CEOs with a background in finance tend to communicate more effectively with investors, as they possess a clearer understanding of the type of information investors consider important. This suggests that CEOs with financial expertise might adopt a more transparent and detailed tone in corporate communications, ensuring that financial performance is accurately represented (Custódio & Metzger, 2014). Furthermore, Dyreng et al. (2010) argue that CEOs with accounting backgrounds tend to pursue conservative financial strategies, focusing on long-term stability rather than short-term gains (Dyreng et al., 2010). Furthermore, the study by Bassyouny et al. (2020) outlines that CEOs with financial expertise tend to adopt a less optimistic tone in their annual reports. This finding is consistent with Gounopoulos and Pham (2018), who also observed that financial expert CEOs tend to adapt more cautious strategies, which influence the tone of their corporate communications (Bassyouny et al., 2020).

Similarly, gender plays a role in shaping CEO tone and behavior in annual reports. In their study, Ho et al. (2015) explore how CEO gender relates to accounting conservatism, discovering a positive link that they connect to the typically conservative and ethically focused approach of female CEOs. They note that prior research often portrays women as more inclined to uphold ethical standards in professional settings, including a greater tendency to act against unethical behavior, compared to male CEOs (Ho et al., 2015). Faccio, Marchica and Mura (2016) further support this, showing that companies led by female CEOs tend to have lower earnings volatility and reduced leverage ratios. Their results consistently indicate that firms with female CEOs engage in more conservative practices when reporting earnings (Faccio et al., 2016). The study by Bassyouny et al. (2020) also confirms that enterprises with a female CEO adopt a more conservative tone and less optimistic in their financial disclosures.

The Upper Echelons Theory offers a theoretical framework for comprehending how individual traits affect the content and tone of CEO letters. This is achieved by means of linking the personal traits of CEOs to strategic decision-making and communication styles. The tone of these communications is used to manage stakeholder perceptions and convey strategic priorities. As a result, it reflects not only the company's goals but also the leadership's personal values and cognitive characteristics. This connection highlights the importance of the Upper Echelons Theory when examining the interplay between CEO characteristics, strategic decision-making and corporate communication practices in the context of financial performance and ESG outcomes. While this study draws on Upper Echelons Theory to contextualize how CEO characteristics, such as age, gender, or financial expertise, may influence communication tone, it is important to note that these variables are not directly examined in the empirical analysis. The theoretical discussion serves to frame the broader cognitive and behavioral dimensions that may underline CEO tone, but the scope of this study focuses exclusively on the linguistic characteristics of CEO letters as they relate to financial performance, ESG outcomes, and sectoral variation.

2.1.3 Signaling Theory

While Upper Echelons Theory explores the impact of a CEO's personal traits on decision-making and communication, it does not fully elaborate on how these leaders actively manage external perceptions in situations of information asymmetry. This is where Signaling Theory becomes relevant. Signaling Theory provides a framework for understanding how CEOs use deliberate communication strategies, including tone, to signal organizational health, financial stability and future potential to stakeholders.

This theory, originally developed by Michael Spence (1973), addresses the communication of information between parties in situations of asymmetric information, where one party (the sender) possesses more information than the other (the receiver). In his seminal work on labor markets, Spence demonstrated how job seekers signal their qualifications to potential employers through observable actions, such as acquiring educational credentials. Since its introduction, signaling theory has been extended beyond labor markets into various disciplines, including corporate governance and management (Spence, 1973). In a corporate setting, Signaling Theory helps explain how firms, particularly their CEOs and top management, use various communicative strategies to convey critical information about the firm's financial health, strategic direction, and overall quality to external stakeholders, such as investors, analysts, and the general public. The aim is to reduce information asymmetry by sending signals that stakeholders can use to assess the firm's value and future potential (Ross, 1977).

In CEO communications, such as CEO letters in annual reports, both the content and tone serve as critical signals to the market. CEOs strategically adjust the language in these letters to influence investor perceptions, projecting confidence, transparency, or caution in alignment with the company's current standing and anticipated outlook. For instance, a CEO may adopt a confident or optimistic tone, even in cases where the company's financial performance may not be particularly robust (Rahman, 2019). In contrast, the study by Tetlock et al. (2008) indicates that firms exhibiting negative accruals, commonly associated with weaker future performance, tend to adopt a more cautious tone within their Management Discussion and analysis sections. This observation suggests that such a tone may reflect the managers' recognition of anticipated challenges or difficulties facing the organization (Tetlock et al., 2008).

The theoretical foundation of this thesis, comprising Stakeholder Theory, Upper Echelons Theory and Signaling Theory, offers critical insights into the relationship between CEO tone, financial performance and ESG outcomes. Although Stakeholder Theory is essential for understanding how CEOs communicate with different stakeholder groups, it is not the main focus of this research. Instead, this theory provides context for how CEO communication, particularly tone, is shaped by the need to address diverse stakeholder expectations. This thesis focuses on the strategic role of CEO tone and its impact on stakeholder perceptions rather than on the balance between short-term financial performance and long-term sustainability goals. Upper Echelons Theory is introduced to conceptually frame how the tone of CEO communication may reflect underlying personal attributes, such as age, expertise and gender. While these characteristics are not directly examined in this study, the theory provides a useful lens for interpreting how leadership traits can shape organizational messaging. Signaling Theory highlights the use of tone as a strategic tool to manage stakeholder perceptions and reduce information asymmetry. As such, it aligns with the objective of this thesis to analyze how CEO tone affects stakeholder trust, influences corporate reputation and contributes to corporate accountability. Together, these theoretical perspectives offer a comprehensive framework for analyzing CEO tone as a deliberate rhetorical strategy that reflects broader organizational dynamics and aligns with both financial outcomes and ESG communication practices.

2.2 Literature Review

2.2.1 The Strategic Role of CEO Tone in Annual Report

The use of tone in corporate disclosures, such as CEO letters, establishes a foundation for understanding how language can have an impact on stakeholders' perceptions and reflect the intentions of management. By employing a carefully chosen tone, these communications strategically shape the company's narrative to align with organizational objectives and influence market perceptions. Tone encompasses elements such as sentiment, which can be cautious, neutral, or positive and which reflects the complexity of management intent (Amernic et al., 2010). According to Amernic et al. (2010), CEO letters highlight the significance as a communication tool that provides critical insights into leadership strategies and their implications for organizational culture and stakeholder relationships.

Optimism is a frequently observed tonal element that is often used to highlight positive aspects, leading to more favorable assessments of the company's profitability and sustainability and mitigating concerns about its external and internal risks. Conversely, a more cautious or neutral tone could increase skepticism or prompt a more conservative outlook (Qin & Cui, 2024; Yang et al., 2022). Furthermore, the findings by Yang et al. (2022) indicate that companies employing a more optimistic tone in their annual reports are less prone to facing regulatory inquiries**.** However, excessive optimism, particularly in challenging environments, carries the risk of concealing organizational risks. The strategic construction of tone in these letters reflects the management's intent to influence stakeholders and align corporate narratives with leadership goals (Amernic et al., 2010). Moreover, the structure of CEO letters plays a significant role in shaping stakeholder perceptions, with particular emphasis on how information is presented across the text. Research suggests that the conclusion of a CEO letter is often recalled more vividly than its beginning, leading to a higher concentration of positive language toward the end. This phenomenon aligns with the "peak-end rule", which posits that presenting financial outcomes positively with a strong conclusion can influence readers to evaluate results more favorably, interpreting them as improvements relative to an average or reference point. Such strategic placement of sentiment enhances the memorability of the message and also reinforces stakeholder confidence by concluding with a lasting impression of optimism (Kahneman et al., 1993; Boudt & Thewissen, 2019).

The analysis of tone has evolved with the advent of linguistic tools, such as Diction software, which systematically measure dimensions such as optimism, certainty and realism to decode the narrative strategies underlying corporate reports (Amernic et al., 2010). Such tools reveal how language is tailored to emphasize achievements, mitigate risks, or shape future expectations. In this study, Linguistic Inquiry and Word Count (LIWC) software will be utilized to analyze CEO letters within annual reports, enabling a detailed examination of how tone correlates with financial performance and ESG outcomes across industries. Loughran and McDonald (2011) demonstrate that sentiment in financial reports, particularly the frequency of negative and positive words, correlates with market responses, emphasizing the significance of tone as a signaling mechanism (Loughran & McDonald, 2011).

Beyond its foundational role in shaping stakeholder perceptions, tone is also a deliberate instrument for impression management. This perspective is further developed by Aerst and Yan (2017), who examine how tone and rhetorical techniques are adjusted to align with institutional and cultural expectations, noting differences in style and tone across industries and regions. Their research indicates that firms in highly regulated sectors may adopt a cautious tone to demonstrate compliance, whereas companies in competitive markets frequently emphasize optimism to project strength and growth (Aerts & Yan, 2017).

Another critical factor influencing the tone employed in CEO communications is profitability. Phesa and Sibanda (2023) state that companies with strong financial performance are more inclined to adopt a positive tone in their communications, aiming to enhance their public image and foster stakeholder confidence. Conversely, firms experiencing weaker financial results may employ a neutral or restrained tone, strategically minimizing attention to underperformance and alleviating stakeholder concerns. This differentiation highlights the intricate relationship between financial outcomes and tonal choices, emphasizing the deliberate use of tone as a tool for impression management and the alignment of corporate narratives with organizational objectives (Phesa & Sibanda, 2023).

Tone in corporate disclosures extends beyond impression management to reflect strategic priorities, such as sustainability. The study by Gao and Feng (2024) identifies a strong correlation between a positive tone in annual reports and the adoption of green innovation initiatives. Companies employing optimistic language often signal their commitment to environmental sustainability, particularly in regions such as China, where cultural and regulatory factors emphasize ESG performance. Furthermore, the heterogeneity analysis reveals that the influence of an optimistic tone in annual reports on green innovation is considerably more pronounced in sectors characterized by elevated economic policy uncertainty and lower levels of pollution. These findings highlight the tone's role in navigating regulatory landscapes and fostering innovation. Additionally, a positive tone in annual reports contributes to enhancing overall enterprise value, while aligning the company with global sustainability trends, strengthening its strategic positioning and stakeholder trust (Gao & Feng, 2024). Nevertheless, some research has emphasized that the optimistic tone in corporate communications might not always be genuine or trustworthy. Managers may purposefully adopt a positive tone as a strategic means to mislead investors, thereby concealing weaknesses in the company's environmental and social performance (Gao & Feng, 2024). This highlights the need for further research to distinguish genuine optimism from deliberate obfuscation in corporate communications, ensuring greater accountability and transparency.

In the banking sector, this concern becomes even more critical given the strong correlation between tone and perceptions of financial risk. According to Hassan et al. (2022), the tone utilized in financial disclosures frequently serves as an indicator of a bank's financial condition. A cautious or neutral tone can suggest potential challenges, including susceptibility to economic fluctuations or weakened performance. On the other hand, an excessively optimistic tone might obscure underlying risks, potentially leading to misinformed stakeholders. This highlights the critical need for careful evaluation of tone in financial reports, especially in the banking sector, where maintaining stakeholder confidence is essential (Hassan et al., 2022).

Moreover, both stakeholders and regulators should carefully examine the language in banking disclosures to ensure consistency between the narrative and the underlying financial performance. Regulatory authorities could enhance their oversight efforts by integrating tone analysis into their evaluation frameworks, which may assist in identifying inconsistencies and improving the reliability of financial reporting. Similarly, analysts and investors can use tone as an additional tool to evaluate transparency, which can help them assess the reliability and financial stability of banks' statements (Hassan et al., 2022).

In summary, the tone of corporate disclosures, particularly in CEO letters, plays a crucial role in shaping stakeholders' perceptions and aligning narratives with organizational goals. It serves as a tool for impression management and strategic communication, influencing how stakeholders evaluate a company's financial performance, sustainability efforts, and risk management.

2.2.2 CEOs Characteristics and Tone of CEO Letter

The strategic use of tone in corporate disclosures reflects broader organizational objectives and is significantly influenced by the characteristics and traits of individual CEOs. Building on the understanding of tone as a tool for shaping perceptions, it is essential to explore how CEO-specific factors, such as reputation, personality traits and cognitive styles, affect the language choices in their communications.

Expanding on these considerations, Upper Echelons Theory provides a comprehensive framework for understanding how CEO characteristics influence tone. As discussed above, traits such as gender, age and financial expertise play a significant role in shaping corporate communication strategies. Building on this foundation, it is equally critical to explore how specific personality traits, such as overconfidence and narcissism, further shape the tone of CEO communications. This analysis provides deeper insights into how cognitive biases may influence transparency, risk communication and the strategic messaging of annual reports.

Liu and Ngyuen (2020) highlight that overconfident CEOs tend to adopt a markedly positive tone in their disclosures, driven by their optimistic beliefs about their own abilities and the future prospects of their firms. Overconfident CEOs are often characterized by an increased sense of optimism in their CEO letters. In addition, they tend to withhold unfavorable information due to their strong belief in their ability to manage and resolve adverse situations (Liu & Ngyuen, 2020). Furthermore, non-confident CEOs are generally more inclined to incorporate negative language in their communications, providing a more transparent and comprehensive view of potential risks and challenges the enterprise may face. Conversely, overconfident CEOs exhibit a tendency to avoid associating their tone with future performance and risk. This aligns with the understanding that overconfident executives, due to their optimistic perception of their ability to address adverse outcomes, are less likely to disclose negative information, thereby presenting an overly favorable narrative (Liu & Ngyuen, 2020).

Beyond overconfidence, other personality traits, such as narcissism also significantly, shape the tone of CEO communications. In line with Upper Echelons Theory, narcissistic CEOs are more inclined to employ an optimistic tone in their narrative disclosure than their non-narcissistic counterparts, as they tend to favor bold actions that attract attention. However, this effect can be moderated by the presence of an independent board of directors, which enhances governance oversight and ensures more balanced disclosures. Empirical findings from the United Kingdom (UK) demonstrate a significant positive relationship between optimistic tone and CEO narcissism, with stronger governance mechanisms mitigating this tendency. This underlines the complex interplay between personality traits and corporate governance in shaping the tone of financial reporting (Bassyouny et al., 2020).

Expanding on the influence of individual CEO traits, such as narcissism, on the tone of corporate disclosures, it is also essential to consider how firm-specific characteristics, including firm size and visibility, further shape the linguistic strategies employed in CEO communications. The study by Craig and Brennan (2012) explores the nuanced relationship between company size, visibility and the tone employed in CEO letters. Their findings indicate that more prominent and larger firms are more likely to utilize straightforward, realistic language in their narrative disclosures. This choice of tone is theorized to stem from their increased public monitoring and greater emphasis on maintaining a credible and stable corporate image. The study highlights that high-reputation firms tend to use a more concrete and simpler language style, characterized by less complexity and a greater focus on immediate, tangible concerns. This approach contrasts with smaller or less known firms, which may employ a more varied and less direct tone (Craig & Brennan, 2012). Moreover, Craig and Brennan (2012) emphasize that larger companies' reputational stakes require a communication strategy that aligns with stakeholder expectations of transparency and accountability. Consequently, the tone of CEO communications in such organizations often reflects an intentional effort to reinforce trust and project reliability, emphasizing the strategic importance of language in managing corporate reputation. These findings underline the dynamic interplay between firm characteristics, reputational objectives and the linguistic choices made in corporate disclosures (Craig & Brennan, 2012).

In summary, CEO tone in corporate communications is influenced by individual traits, such as gender, age, overconfidence and narcissism, as well as firm-specific factors such as size and visibility. Overconfident CEOs often use optimistic language, while larger firms favor clear, credible narratives to meet stakeholder expectations. These dynamics reflect the interplay of personal attributes and organizational context in shaping disclosure strategies.

2.2.3 The Association between CEO Tone and Financial Performance

Expanding upon the influence of CEO traits and firm-specific factors on tone, it is crucial to examine how financial performance impacts the tone of CEO communications. This relationship provides valuable insights into how variations in financial outcomes shape the linguistic choices and messaging strategies employed in corporate disclosures.

Inchausti (1997) identified profitability as a key factor influencing the degree of information disclosed in corporate annual reports. Similarly, Ismail and Chandler (2005) reported that firms demonstrating stronger financial performance tend to disclose information more extensively, implying that profitability may serve as a driver for enhanced transparency in corporate reporting. Aly et al. (2018) further provide evidence of a two-way relationship between transparency in disclosure and financial performance, contributing to the limited research on tone disclosure in the context of developing countries. Additionally, higher levels of transparency enhance management accountability, thereby increasing the overall value of the firm. This increased accountability fosters investor confidence, leading to a more favorable evaluation of the firm's performance, which, in turn, drives greater investment interest and improves the firm's financial outcomes (Aly et al., 2018).

The study by Alshorman and Shanahan (2022), conducted on 77 Australian CEO communications, builds upon previous research by examining the relationship between firm profitability and CEO tone, employing Analysis of Variance (ANOVA) analysis to investigate this dynamic. Their results reveal significant differences in the tone of CEO letters between profitable and unprofitable firms, particularly in the use of positive and net positive words, as well as expressions of uncertainty. However, the analysis does not indicate notable differences in the use of strong modal tones or pessimistic tones, which convey assurance. Furthermore, the application of a levels model that incorporates control variables reinforces the finding that greater firm profitability is significantly associated with increased use of positive and net positive language. In contrast, negative language use shows a significant inverse relationship with profitability. Conversely, the correspondence between profitability and tones of uncertainty-related or modal language is insignificant and negative (Alshorman & Shanahan, 2022).

Moreover, their findings suggest that fluctuations in firm profitability are closely linked to the variations in the use of negative, positive and net positive words. This implies that CEOs adjust their tone in response to the changes in firm performance, underscoring that their communication style is not solely a fixed personal characteristic or an attempt to maintain a consistently optimistic portrayal, irrespective of the organization’s actual conditions (Alshorman & Shanahan, 2022).

Wisniewski and Yekini (2015) further investigate whether the linguistic features of annual reports from UK-listed companies can serve as predictors of subsequent one-year stock returns. Using the semantic software Diction, the analysis revealed that the variables representing "activity" and "realism" exhibit a positive and statistically significant relationship with subsequent changes in stock prices. An individual increase of one standard deviation in either of the two indicators corresponds to an approximate rise in future returns between 2.08% and 4.31%, highlighting the substantial statistical and practical significance of this result (Wisniewski & Yekini, 2015). These findings highlight the statistical and economic relevance of linguistic characteristics in annual reports, suggesting that such narratives serve not only as tools for impression management but also as a meaningful source of incremental information for stakeholders.

To extend the evaluation, an additional analysis by Bassyouny and Abdelfattah (2022) examined whether narrative tone could also indicate future market outcomes, using Tobin’s Q ratio as a representative measure of market-based performance. The results indicated that net optimistic tone at the corporate, executive, and governance levels exhibited positive relationships with future market-based performance, however, these relationships were not statistically significant. This aligns with findings by Wisniewski and Yekini (2015), who reported that while optimism in annual report narratives was positively related to future stock returns, the association lacked statistical significance (Bassyouny & Abdelfattah, 2022).

In contrast, an earlier study by Patelli and Pedrini (2014) suggests that optimism in CEO narratives often serves as a significant predictor of future financial performance. The analysis demonstrates that the level of optimism conveyed in CEO letters is strongly influenced by the company's prior financial outcomes, as shown through both univariate and regression results. Furthermore, optimism emerges as a statistically significant variable in forecasting future firm performance. Firms with the highest accounting returns tend to exhibit the most optimistic narratives, with rhetorical features, such as satisfaction and inspiration reinforcing this association. These findings illustrate the multifaceted and context-dependent nature of the relationship between optimism in CEO narratives and future financial performance, underscoring the need for further research to unravel these dynamics and their implications for corporate communication strategies (Patelli & Pedrini, 2014).

Expanding the discussion of the broader implications of CEO tone and financial performance, it is essential to consider the potential risks associated with tone manipulation in corporate disclosures. The empirical study by Guan and Liu (2022), focusing on A-share listed companies in China between 2007 and 2020 highlights the connection between positive tone discretion in annual reports and the likelihood of share price crashes. The analysis demonstrates that companies exhibiting lower levels of disclosure transparency are more inclined to use an overly positive tone, which reduces information clarity and can mislead small and medium-sized investors. This practice often leads to the accumulation of undisclosed negative information. When this information is eventually revealed, it leads to substantial market corrections and share price collapses. Moreover, the findings emphasize the critical role of internal control systems in mitigating the risks associated with tone manipulation. Organizations with strong internal governance frameworks are less likely to engage in tone manipulation, as their disclosures are generally more realistic and adhere to standardized reporting practices (Guan & Liu, 2022).

This relationship between financial performance, tone and disclosure practices extends to the cost of debt, which reflects creditors' confidence in a firm's financial stability. To mitigate borrowing costs, companies often use detailed and transparent disclosures to reassure creditors. However, in some cases, managers may manipulate these disclosures to obscure poor financial performance by creating overly complex and less readable reports. Such lack of clarity intensifies creditors' perception of risk, thereby resulting in elevated borrowing costs. This demonstrates how the interplay between tone, financial performance and the clarity of disclosures influences both market perception and financial outcomes, reinforcing the importance of transparency in corporate communications (Ayuningtyas & Harymawan, 2021).

Extending this perspective, the tone in annual reports not only impacts financial performance and borrowing costs but also plays a pivotal role in return comovement. According to the research on A-share listed firms in China's stock market by Liu et al. (2023), the tone of CEO letters significantly contributes to return comovement, reflecting how investor sentiment and hidden information embedded in corporate narratives shape stock market dynamics. The analysis reveals a significant relationship between report tone and return comovement. This effect is moderated by factors, such as institutional ownership, firm ownership structure, market competition and economic conditions. Specifically, the positive association between annual report tone and return comovement is less pronounced in firms with high institutional ownership, state-owned enterprises, those operating in competitive markets, and during periods of economic expansion. Conversely, the effect strengthens when market sentiment is optimistic (Liu et al, 2023).

In summary, the relationship between CEO tone and financial performance highlights the tone’s critical role in shaping market perceptions, borrowing costs, and return comovement. Although optimism in corporate narratives can bolster investor confidence and market outcomes, transparency and alignment with actual performance remain essential to maintaining trust. Robust internal controls and clear disclosures are crucial for mitigating risks, such as tone manipulation, in order to safeguard both the market integrity, as well as the stakeholder interests.

2.2.4 The Relationship between ESG Performance and CEO’s Tone

Extending beyond financial performance, the tone of CEO communications also plays a pivotal role in shaping perceptions of a company’s environmental, social and governance performance. As stakeholders increasingly prioritize sustainability and ethical practices, the alignment between ESG initiatives and CEO narrative tone has emerged as a critical area of interest. This section explores how ESG performance influences the tone of corporate disclosures and examines the broader implications for stakeholder trust, transparency, and long-term corporate accountability.

The relevance of this inquiry is further highlighted by findings from Lu et al. (2019), who explore the association between corporate social responsibility (CSR) performance and disclosure tone in earnings announcements. While their study specifically addresses CSR rather than ESG as a comprehensive framework, it offers valuable insights into the strategic use of language in corporate communications. Their regression analysis, based on data of 1848 U.S. listed companies in 2012, reveals a positive and highly significant association between CSR performance and a positive tone in earnings announcements, regardless of their underlying financial performance. These findings confirm that firms with strong CSR practices are more inclined to adopt optimistic language, suggesting that organizations strategically use tone to align stakeholder perceptions with their sustainability and ethical commitment (Lu et al., 2019).

Although earlier studies, such as Kim et al. (2012), have demonstrated that companies with strong CSR performance are less likely to distort quantitative financial data, Lu et al. (2019) suggest that these firms may shape investor perceptions through qualitative elements, such as the tone of their earnings disclosures. One potential explanation is that managers leverage the trust and credibility associated with strong CSR practices to positively influence investor sentiment. Alternatively, organizations with high CSR performance tend to achieve stronger financial outcomes, which inherently correspond with the adoption of a more optimistic tone in their disclosures (Lu et al., 2019). Supporting this positive relationship between ESG performance and disclosure tone, further research demonstrates similar results. As observed by Sune et al. (2024), firms with higher ESG performance, as measured by ESG ratings from Hexun, the most comprehensive ESG rating database for listed companies in China, tend to adopt a more positive tone when presenting their ESG reports.

However, contrasting findings highlight that not all companies use optimistic tone as a reflection of strong performance or genuine trustworthiness. According to Cho et al. (2010), corporations with weaker environmental performance often employ optimistic language in their financial and environmental disclosures as a strategic means to emphasize positive aspects and divert attention from negative outcomes. Specifically, worse environmental performance is linked to the use of more optimistic language, emphasizing positive outcomes and attributing successes to internal efforts. This approach may obscure responsibility for less favorable results, contrasting with the more balanced language observed in disclosures by companies with stronger environmental performance. Additionally, their results indicate a negative relationship between environmental performance and the certainty expressed in these disclosures. Firms with weaker environmental performance appear to adopt less definitive and more ambiguous language, potentially as a strategy to downplay internal accountability for their shortcomings (Cho et al., 2010).

In summary, CEO communication tone plays a complex role in shaping perceptions of ESG performance. While organizations with strong ESG practices use optimistic language to foster trust and transparency, firms with poorer environmental outcomes may employ a different tone with the strategic goal of obscuring negative results (Cho et al., 2010). This dual use of tone highlights both its potential for building credibility and its role in impression management, indicating the need for further research to explore these dynamics comprehensively.

2.2.5 Sectoral Variations in CEO Tone within Annual Reports

In addition to the broader exploration of the interplay between CEO tone and ESG performance, this section examines the sectoral variations that influence the tone of CEO communications within annual reports. Industry-specific factors, including regulatory environments, competitive pressures and distinct stakeholder priorities, inherently shape the linguistic strategies employed by CEOs. By analyzing these variations, this study aims to contribute to a deeper comprehension of corporate narrative strategies within diverse industry contexts.

The analysis of Jian et al. (2024) incorporates the moderating effects of manipulation mechanisms, demonstrating that the cost of equity capital's influence on tone manipulation is particularly significant in firms characterized by low accounting information quality and competitive industry environments. According to their research, a significantly positive link between tone manipulation in annual reports and the cost of equity capital is observed. Firms with lower accounting information quality show a more pronounced association between manipulated tone information and equity capital costs. Moreover, the relationship is more pronounced in industries with higher competition. These findings remain consistent across various robustness checks, reinforcing their validity (Jian et al., 2024).

Research examining sectoral variations in CEO tone within annual reports remains limited. Existing studies, such as that of Jian et al. (2024), underline the impact of factors, such as accounting information quality and industry competition on tone manipulation. Addressing this gap, the present study aims to investigate sector-specific differences in CEO tone, offering critical insights into how industry-specific contexts shape the development and implementation of corporate narrative strategies.

The literature review provides a robust theoretical and empirical framework for examining CEO tone in relation to financial performance, ESG outcomes and sectoral variations. Drawing upon Stakeholder Theory, Upper Echelons Theory and Signaling Theory, it highlights the significance of balancing financial objectives with sustainability goals, the role of CEO characteristics in shaping communication strategies, and the strategic use of tone to influence stakeholder perceptions and mitigate information asymmetry.

Moreover, the empirical research demonstrates that CEO tone serves as a deliberate instrument for shaping stakeholder perceptions, with an optimistic tone often fostering confidence while carrying the risk of misrepresentation if excessively applied (Merkl-Davies & Brennan, 2007). The tone employed also reflects organizational priorities, including financial performance and ESG outcomes, where robust sustainability practices tend to correspond with optimistic language, whereas weaker performers may attempt to obscure deficiencies (Lu et al., 2019). Furthermore, sectoral variations illustrate how industry-specific factors, such as competitive pressures and regulatory frameworks, shape the linguistic strategies utilized in corporate disclosures (Hassan et al., 2022). This literature review highlights the critical role of CEO tone as a strategic communication tool that embodies organizational objectives, facilitates stakeholder engagement and adapts to industry contexts, thereby establishing a foundational framework for the thesis's exploration of these interrelationships.

Building upon these insights, this study aims to enrich the existing literature by employing LIWC software to analyze the nuanced effects of CEO tone on financial performance, offering deeper insights into these dynamics and their implications for investors, regulators, and corporate managers. In particular, this thesis addresses the limited exploration of the intersection between ESG performance and CEO tone, contributing novel findings through the application of LIWC to detect linguistic patterns across industries. By bridging the domains of financial and ESG performance through computational text analysis, this study advances our understanding of how corporate narratives are shaped by underlying organizational realities and how these narratives function as tools of strategic disclosure.

3. Methodology

This chapter builds directly on the concepts introduced in the literature review by detailing the research design, data sources, analytical tools and techniques used to examine the link between CEO tone, financial performance, and ESG outcomes. The methodology is designed to be both structured and transparent, allowing the study to be replicated while addressing the challenges of interpreting qualitative language data in a financial context. A clear and well-grounded research framework is essential to ensure the reliability of the results and to support the study's broader conclusions.

This chapter begins by outlining the research design, which employs a combination of qualitative content analysis and descriptive quantitative techniques. By doing so, it aims to explore the complexities of CEO tone and its relationship to financial performance and ESG outcomes. The adoption of this mixed-methods approach is deliberately justified, as it provides a comprehensive framework for examining the linguistic nuances of CEO communications while simultaneously enabling the categorization of financial performance based on standardized metrics.

This section provides a detailed account of the data collection process, focusing on the identification and retrieval of CEO letters from publicly available annual reports. Particular emphasis is placed on the selection criteria and the measures undertaken to ensure the consistency and reliability of the collected material.

The analytical tool used in this study is then introduced with an emphasis on text analysis software, such as LIWC, which enables the identification and quantification of tonal elements, such as optimism, emotional expression and realism in CEO letters. The rationale for selecting LIWC is explained alongside the linguistic indicators relevant to both financial and ESG analysis. In addition, since the study integrates ESG metrics derived from Sustainalytics' methodology, the chapter concludes with a detailed explanation of how these ratings are calculated, outlining the underlying framework and evaluation criteria used to assess corporate sustainability risk.

3.1 Research Design

The mixed-methods approach adopted in this study is particularly well-suited, as it integrates the strengths of both qualitative content analysis and descriptive quantitative techniques. The qualitative component allows for an in-depth examination of CEO tone within its original communicative context, capturing nuanced elements, such as optimism, realism and emotional cues that are not readily quantifiable. Interpreting tone in this manner provides valuable insights into underlying corporate priorities and the strategic direction communicated by executive leadership.

In contrast, the descriptive quantitative component of the study focuses on the use of ROA as the primary indicator for classifying financial performance. ROA is a widely recognized financial indicator that evaluate how effectively a company utilizes its assets to generate earnings, thereby allowing firms to be categorized as financially strong, average, or weak (Hargrave, 2025). To account for cross-industry differences in profitability benchmarks, sector-specific ROA classification thresholds were applied in each industry section. This approach provides a clear and accessible means of evaluating financial performance without relying on complex statistical modeling.

Following this, the sample selection process is described, outlining the criteria used to identify firms from a range of industries. Companies were classified based on both their financial performance and ESG risk ratings to ensure that the sample reflects a broad spectrum of industry contexts. This diversity supports a purposeful cross-sector comparison of CEO communication styles.

3.2 Sample and Data Collection

The sample used in this study comprises CEO letters published for the fiscal year 2023 as part of annual reports issued by companies operating across a range of industries and geographic regions. The decision to focus on the 2023 reporting year ensures that the analysis reflects the most recent developments in corporate communication, particularly in relation to ESG disclosure practices. The growing prominence of ESG considerations has been driven by evolving regulatory frameworks, such as the European Union’s CSRD, alongside increasing stakeholder expectations for transparency and responsible governance. As such, the 2023 reference point allows the study to capture current trends and strategic approaches in executive communication.

To ensure the representativeness of the sample, companies were selected based on publicly accessible annual and sustainability reports from six major industry sectors: Technology, Energy, Financial Services, Consumer Goods, Industrial Manufacturing and Healthcare. This sectoral diversity enables the study to examine variations in CEO tone that may be shaped by industry-specific factors and to explore how these linguistic patterns relate to both financial performance and ESG outcomes. Firms were identified through a combination of sources, including ESG performance rankings, sector-specific industry reports and corporate disclosures. This selection strategy prioritizes companies actively engaged in sustainability communication and ensures a focus on organizations where ESG considerations are embedded in strategic and operational decision-making. The inclusion of sectors such as Energy and Manufacturing is supported by previous research by Reverte (2009) showing that firms in environmentally or socially sensitive industries tend to disclose more ESG-related information due to stakeholder pressure and regulatory expectations (Reverte, 2009).

Data collection was conducted using publicly accessible sources, including corporate websites, investor relations portals and dedicated ESG or a sustainability reporting platform such as Sustainalytics. CEO letters were identified through keyword searches using terms, such as "CEO letter", "letter to stakeholders" and "message from the CEO". Only letters explicitly addressing a broad range of stakeholders, such as investors, employees, customers and communities, were included in the analysis. Letters with a narrow focus, such as those directed solely to employees or customers, were excluded to maintain consistency with the study's broader analytical objectives.

Since corporate communication is generally consistent across national borders, all documents analyzed were sourced from official public disclosures and limited to English-language materials to ensure comparability.

The final dataset comprises CEO letters from 46 companies, spanning 6 industries, namely Technology, Financial Services, Energy, Healthcare, Consumer Goods and Industrial Manufacturing. These CEO letters were extracted from two distinct types of corporate documents, annual financial reports and sustainability reports, to ensure a comprehensive representation of executive communication across both financial and non-financial contexts. However, not all companies included CEO letters in both types of reports. As a result, the sample size varies slightly between the analyses comparing CEO tone with financial performance and those examining ESG outcomes. Some variation in geographic distribution across industries reflects practical and strategic considerations. For instance, most of the industrial manufacturing firms in the sample are based in Germany due to the country's robust industrial base and strong ESG reporting standards. In contrast, healthcare companies are predominantly from the UK and US, where large multinational firms in this sector tend to publish comprehensive, narrative-rich CEO letters. The selection criteria included the availability and accessibility of CEO letters, English-language reporting, and visible engagement in sustainability communication. This was assessed through ESG performance rankings and corporate disclosures. Furthermore, said companies were chosen to represent diverse geographical regions, such as Europe, Asia and South America. The distribution of companies across industries in the dataset is as follows:

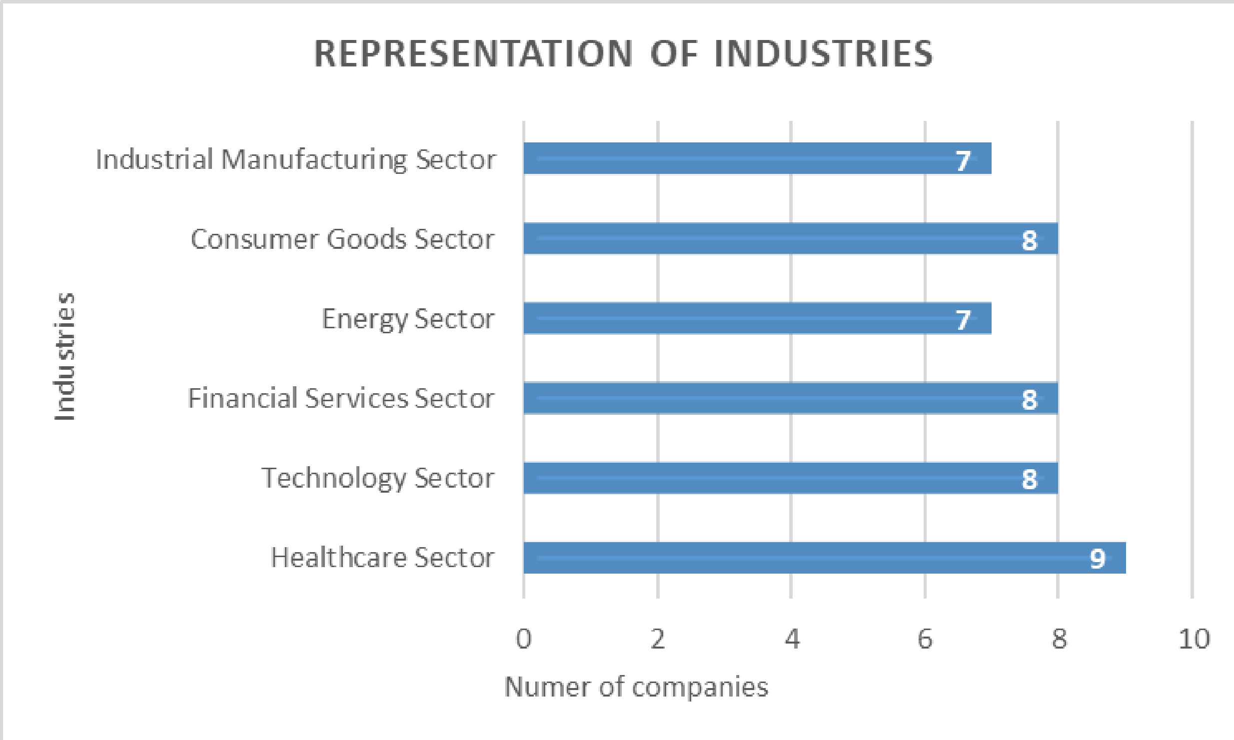

Figure 1. ***Representation of Industries (Own work)***

- Technology Sector: This industry includes innovative companies specializing in software development, IT services and electronics manufacturing. The chosen companies from this sector are Software One, Microsoft, ABB, Huawei, Amazon, SAP, Kontron and Paloalto.
- Financial Services Sector: Represented by companies offering banking, insurance and asset management services. These are SIX, UBS, J.P. Morgan, HSBC, Bank of China, Goldman Sachs, Bank of India and Banco de Santander.
- Energy Sector: Companies in this industry are engaged in oil, gas and renewable energy. The ones considered for this study are: Shell, Chevron Corp., Tepco, Saudi Aramco, ConocoPhillips, RWE AG and OMV.
- Healthcare Sector: Encompasses organizations in pharmaceuticals, biotechnology and medical devices, such as Novartis, Johnson and Johnson, Medtronic Ireland Limited, CVS Health Corporation, Abbott Laboratories, Apollo Hospitals, Butterfly Healthcare and Bioteque Corporation.
- Consumer Goods Sector: Includes firms involved in food and beverage, personal care products and consumer durables. This study investigates the companies: Nestlé, Unilever Global, Colgate-Palmolive, Heineken N.V., The Clorox Company, Coty Inc., Kosé Corporation and L'Oréal S.A.

- Industrial Manufacturing Sector: Represented by companies focusing on machinery, construction materials and industrial equipment. The focus of the study regarding this sector are the firms: Volkswagen Group, Siemens, HP, Patrick Industries, China Railway Group Limited, Mercedes-Benz and ZF Friedrichshafen AG.

This comprehensive dataset provides a solid foundation for examining the linguistic strategies employed in CEO communications and their potential associations with both financial performance, as well as ESG outcomes. By focusing on companies actively engaged in sustainability reporting and restricting the analysis to a single reporting year, the study captures contemporary trends while ensuring consistency and comparability of results across industries and geographic regions.

3.3 Analytical Tool - LIWC

Linguistic Inquiry and Word Count was initially developed in the 1990s to investigate the connection between language usage and physical, as well as psychological health (Francis & Pennebaker, 1992). Currently in its fifth major version, LIWC-22 (Boyd et al., 2022) has been progressively refined to improve its analytical precision. At the core of each version is a text processing module designed to systematically analyze texts on a word-by-word basis, evaluating each phrase or word in a dataset to one or more of over 100 predefined linguistic and psychological categories. The categorization process relies on matching words or phrases to entries in LIWC's internal dictionary, which contains more than 12,000 entries, including full word, word stems, multi-word expressions and specific emoticons (Boyd et al., 2022), each annotated with the relevant categories. Prior to analysis, the input texts require preprocessing to correct spelling errors and resolve formatting inconsistencies that could affect categorization accuracy. The primary output of the analysis presents the proportion of total words in the text that correspond to each predefined classification. However, certain composite variables, such as Clout, Authenticity, Analytical Thinking and Emotional Tone, are derived using specialized algorithms that synthesize data across multiple categories to produce standardized, percentile-based scores (Boyd et al., 2022).

Each entry is linked to one or more categories or sub-dictionaries, which are specifically developed to evaluate various psychosocial constructs. For instance, the word *cried* is assigned to ten categories: affect, tone_pos, emotion, emo_neg, emo_sad, verbs, focuspast, communication, linguistic and cognition. Thus, each occurrence of the word "cried" in the text results in an increase in the scores of all ten related sub-dictionaries (Boyd et al., 2022).

The majority of the categories within LIWC-22 are organized hierarchically. For example, words classified under category *sadness* are also classified within the broader categories of *emo_neg*, *emotion*, *tone_neg* and the overarching *affect* category. Additionally, the LIWC-22 system recognizes word stems, allowing for flexible matching of variations of a word. For instance, the stem *hungr** is included in the dictionary, enabling the system to count all variations of the word, such as *hungry*, *hungrier* and *hungriest*, as part of the "food" category. The asterisk (*) serves as a wildcard, denoting that any sequence of letters, hyphens, or numbers following the specified stem will be included in the categorization (Boyd et al., 2022).

In LIWC-22, the text processing engine has been comprehensively redesigned to enhance its functionality, including increased flexibility in handling LIWC-formatted dictionaries. The updated dictionaries now support a wider range of inputs, including short phrase, punctuation, regular expressions and numbers. These advancements enable the software to effectively analyze the informal and abbreviated language commonly used in digital communication platforms, such as Twitter, Facebook, SMS (Short Messaging Service), and similar forms of instant messaging, including Snapchat. For instance, the abbreviation *'b4'* is categorized as a preposition, while the emoticon *':)'* is classified as a word conveying optimistic tone (Boyd et al., 2022).

LIWC-22 was selected for this research due to its advanced text analysis capabilities, allowing for the detailed categorization of words and phrases into over 100 linguistic and psychological categories. Its extensive dictionary and hierarchical structure enable nuanced insights into tonal and emotional elements in texts, such as optimism, authenticity, and analytical thinking. Additionally, LIWC-22's capacity to accurately process both formal and informal language enhances its applicability across diverse textual contexts. These attributes make the tool particularly well-suited for analyzing CEO letters across multiple industries, thereby supporting a comprehensive investigation of the relationship between executive tone, financial performance and ESG outcomes.

The use of LIWC-22 as the primary linguistic analysis tool is not only methodologically sound and theoretically grounded in the three core frameworks that underpin this study. In line with Signaling Theory, the textual elements identified by LIWC, particularly Emotional Tone, Clout and Authenticity, can be interpreted as deliberate signals sent by CEOs to reduce information asymmetry and project confidence, transparency, or caution. These signals help stakeholders interpret both current organizational performance and future expectations.

Moreover, the inclusion of both financial and ESG performance metrics reflects the principles of Stakeholder Theory, which suggests that firms must consider a wide array of interests beyond those of shareholders alone. CEO letters, as a direct communication channel, play a critical role in articulating how companies meet financial goals while also addressing sustainability concerns. As such, tone becomes a vehicle through which companies manage stakeholder perceptions across multiple dimensions.

Finally, Upper Echelons Theory offers a lens for understanding tone as a reflection of the CEO's personal values, cognitive traits and decision-making style. While this study does not quantify individual CEO characteristics, it recognizes that tone variation, when analyzed across industries and performance levels, can implicitly reflect these executive-level influences. Together, these theoretical perspectives reinforce the relevance of tone analysis and justify its central role in this methodological approach.

3.4 ESG Ranking Sustainalytics

Sustainalytics, a Morningstar Company, stands as a prominent authority in ESG research, ratings, and data provision, having supported investors globally in the development and application of responsible investment frameworks for over 25 years. Widely recognized for its analytical expertise and methodological rigor, Sustainalytics collaborates with major asset managers and pension funds worldwide, integrating ESG and corporate governance insights into institutional investment decision-making processes (von Münchhausen et al., 2024).

Beyond investors, the firm also partners with numerous corporations and financial intermediaries to incorporate sustainability considerations into their policies, practices, and capital projects. With a global presence spanning 16 offices and a team of over 700 professionals, including more than 200 analysts with expertise across more than 40 industry groups, Sustainalytics provides comprehensive ESG evaluations tailored to meet the evolving needs of a diverse client base. The following section outlines the methodology used by Sustainalytics to calculate ESG risk ratings, providing a detailed overview of the framework that underpins its widely referenced ESG assessments (von Münchhausen et al., 2024).

Sustainalytics has developed a sophisticated model for assessing a company's ability to manage its exposure to environmental, social and governance risks. This model's score serves as a key indicator of a company's effectiveness in addressing ESG-related challenges. A notable aspect of this methodology is its distinction between *manageable risk* and *unmanageable risk*, offering a more nuanced and context-sensitive approach to evaluating corporate ESG performance (von Münchhausen et al., 2024).

Unmanageable risk refers to the portion of a company's ESG risk exposure that cannot be mitigated through management practices or policies. These risks are considered inherent to the company's operations or industry and persist regardless of the firm's mitigation efforts. For instance, tobacco companies are unable to fully eliminate the health risks associated with their products, making this a permanent element of unmanageable risk (von Münchhausen et al., 2024).

In contrast, manageable risk encompasses the portion of a company's ESG risk exposure that can be addressed and mitigated through effective implementation of policies, programs and management practices. The balance between manageable and unmanageable risks for each Material ESG Issue (MEI) is determined at the sub-industry level, thereby ensuring that the risk assessment remains contextually appropriate and reflective of sector-specific dynamics. Some MEIs include Corporate Governance, Community Relations, Business Ethics, Human Rights, Carbon Products and services and others. The ESG Risk Rating score of a company is calculated as the total sum of unmanaged risks across all MEIs relevant to the company. This rating system is designed to quantify the company's exposure to ESG risks and its capability to mitigate those risks effectively. The methodology introduces a structured framework that distinguishes between managed and unmanaged risks (von Münchhausen et al., 2024).

For each MEI, *unmanaged risk* is determined by subtracting the amount of risk the company is managing from its total exposure score. The total unmanaged risk score is then aggregated across all MEIs to generate the company's overall ESG Risk Rating (von Münchhausen et al., 2024).

Based on the ESG Risk Rating score, companies are assigned to one of five risk categories: negligible (0-9.9), low (10-19.9), medium (20 - 29.9), high (30 - 39.9), or severe (40+). Each category reflects the level of material financial impact that ESG factors could have on the company. Higher scores indicate a greater degree of unmanaged ESG risk and, consequently, a higher likelihood of adverse financial consequences (von Münchhausen et al., 2024).

As above outlined, the Managed Risk Score (MRS) represents the aggregate measure of a company's ability to effectively manage its exposure to ESG risks. This score is calculated as the sum of all managed risk scores across the company's identified MEI. The MRS for each MEI is derived by multiplying the MEI's management score by its manageable risk score. This approach ensures that the assessment reflects both the degree of risk that is manageable and the extent to which the company's policies, practices, and programs are effectively addressing those risks.

Moreover, each management indicator receives a raw score ranging from 0 to 100, providing an evaluation of the issuer's policies, practices and effectiveness in mitigating the risks associated with the issue. Overall, this structured approach enables a nuanced, weighted evaluation of ESG management across all relevant dimensions (von Münchhausen et al., 2024).
For example, if a company has a manageable risk score of 7 for a particular issue and achieves a management score of 80% for that issue, the managed risk score for the corresponding MEI would be calculated as 7 × 80% = 5.6. The unmanaged portion of the manageable risk would therefore be 7 – 5.6 = 1.4. If the unmanageable risk score for the same MEI is 3, then the total ESG Risk Rating score (i.e., the unmanaged risk) would be calculated as 3 + 1.4 = 4.4. This score would be categorized as negligible risk, according to Sustainalytics' risk category thresholds (von Münchhausen et al., 2024).

4. Sectoral Analysis: LIWC’s Results in Relation to Financial and ESG Performance

4.1 Defining key variables

This chapter explores the relationship between linguistic insights derived from the LIWC software and key aspects of financial and ESG performance. By assessing specific textual features, the study seeks to determine how variations in executive communication styles may correspond with corporate success, ethical leadership and sustainability outcomes. The analysis focuses on three primary linguistic dimensions extracted from the software: Authenticity, Emotional Tone and Clout. Specifically, Emotional Tone reflects the emotional state conveyed in the text. It has been linked to stakeholder trust, perceived credibility, and financial outcomes in corporate settings (Kahveci, 2016). Clout captures indicators of confidence and authority in language (Craig & Brennan, 2012). Authenticity, meanwhile, relates to the degree of openness and spontaneity in discourse. This is particularly relevant in the context of ESG reporting, where transparency and sincerity are critical to stakeholder evaluation (Mahoney et al., 2013).

The selection of these three dimensions is grounded in established theoretical and empirical research. Together, they offer a meaningful framework for analyzing how CEOs use language to influence perceptions of corporate performance, ethical values, and sustainability orientation.

Authenticity reflects the extent to which individuals communicate in an open and spontaneous manner, without excessive self-censorship or regulation. Texts with low Authenticity scores tend to be pre-prepared or highly regulated, such as scripted speeches or cautious crafted corporate statements. In contrast, high Authenticity scores are associated with more unfiltered conversations, such as discussions between close friends or unscripted remarks by political figures with minimal social inhibition (LIWC - LIWC Analysis, n.d.).

The second variable, Emotional Tone, incorporates separate dimensions for both positive and negative tone. However, the software integrates these factors into one overall composite score, where higher values correspond to a more positive emotional tone, and scores under 50 indicate a mainly negative tone (LIWC - LIWC Analysis, n.d.).

The third variable, Clout, reflects the level of social status, confidence and leadership expressed through written or spoken communication. It is important to distinguish Clout from the notion of "Power", encompassing the LIWC-22 "power" variable. While power relates to an individual’s awareness of social hierarchy and status differences, Clout captures confidence and leadership qualities, regardless of a person's concern for others' social standing (LIWC - LIWC Analysis, n.d.). As these dimensions are taken directly from the LIWC software's predefined output categories, they are presented with capitalized initial letters throughout the thesis, i.e., Authenticity, Emotional Tone and Clout. This is done with the intention to reflect their status as specific variables generated by the tool.

These measures provide insights into the transparency, sentiment and confidence reflected in corporate disclosures, leadership statements and other key texts. By examining these patterns across different industry sectors, the study aims to uncover potential correlations between language use and both financial performance and ESG outcomes.

Subsequent sections will present sector-specific findings, offering a detailed exploration of how these linguistic dimensions manifest in corporate communication and their potential implications for performance.

4.2 Technology Sector

The Technology sector sample consists of six companies: Software One, ABB, Amazon, Huawei, Microsoft and SAP. Each of them demonstrates distinct financial performance levels and linguistic characteristics in their CEO letters. Figure 2 represents the results of the LIWC analysis, highlighting linguistic patterns in relation to financial outcomes. Software One, headquartered in Switzerland, reports the lowest ROA in the sample at 1.6%. This company also demonstrates relatively lower Clout of 78.19 and an Emotional Tone of 72.36, which is still above the neutral threshold, indicating a generally positive tone. Although its Emotional Tone suggests optimism, the lower Clout may reflect a more cautious or subdued leadership presence, possibly influenced by the company's financial standing.

ABB, also based in Switzerland, along with Microsoft (United States) and SAP (Germany), demonstrate strong financial outcomes and distinctive linguistic characteristics. ABB demonstrates the highest Clout score 99, but it also records the lowest Authenticity score 22.06 and its ROA stands at 7.6%. SAP, by contrast, exhibits a significantly high Emotional Tone score 90.06 and an ROA of 8.7%. Microsoft, with a strong Clout score 96.32 and a relatively positive Emotional Tone 75.68, records the highest ROA of 17.5%. This indicates that firms with strong financial results tend to express a more positive tone in their reports. Notably, the European firms ABB and SAP which belong to this group show a strong tendency toward high Clout and Emotional Tone, potentially reflecting a corporate culture that emphasizes structured and optimistic communication.

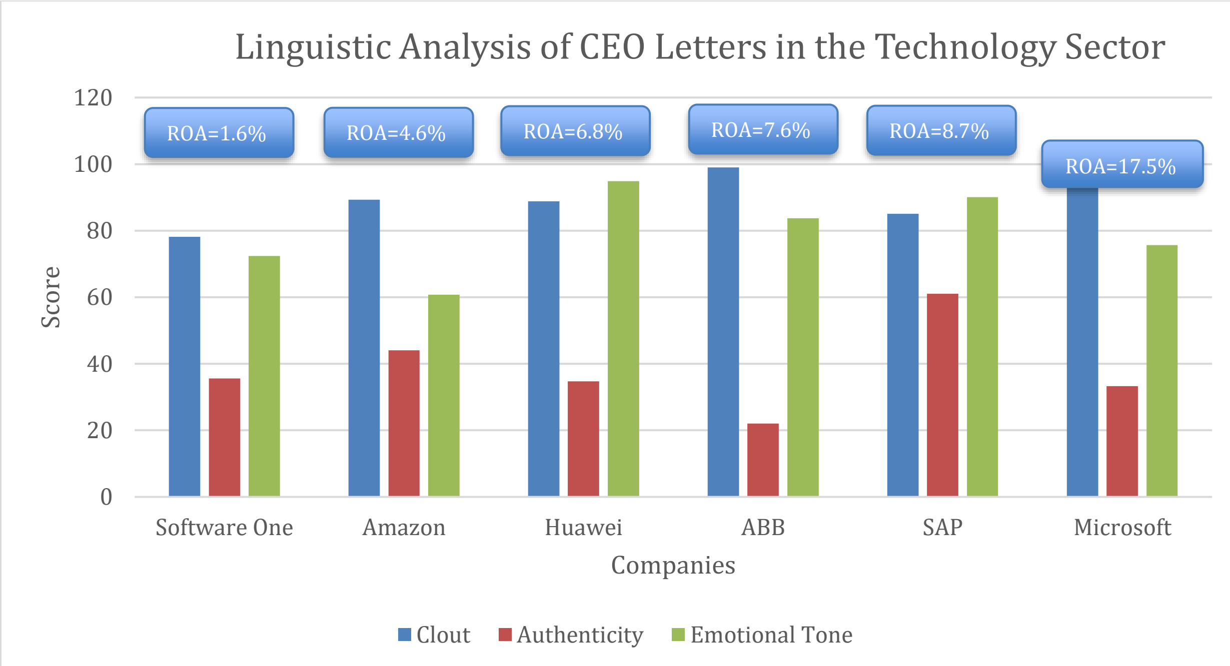

Figure 2. ***Linguistic Analysis of CEO Tone in the Technology Sector (Own work with data based on financial reports and LIWC-22 software).***

Amazon, headquartered in the U.S., has a relatively moderate Emotional Tone 60.76 and reports an ROA of 4.6%, whereas Huawei, headquartered in China, exhibits the highest Emotional Tone score in the group 94.85 alongside an ROA of 6.8%. This discrepancy suggests that although a highly positive tone is often associated with strong financial performance, it is not always a definitive predictor. Huawei's exceptionally high Emotional Tone may reflect cultural norms in corporate communication, particularly within the East Asian context, where optimistic and confident language is often emphasized regardless of actual financial outcomes. This practice aligns with findings on the optimism gap in Chinese corporate reporting, where such positively biased language is linked to weaker future corporate performance and elevated bankruptcy risk (Cui et al., 2024).

A general pattern emerges suggesting that companies with stronger financial performance tend to adopt a more positive Emotional Tone in their annual reports. For instance, SAP and ABB, both classified as financially strong, exhibit high Emotional Tone scores 90.06 and 83.7, respectively. Similarly, Microsoft, another financially strong performer, maintains a relatively positive tone 75.68. In contrast, Software One, which exhibits the weakest financial performance in the sample, presents a comparatively lower Emotional Tone score of 72.36. This trend may indicate a correlation between lower financial success and the use of less optimistic language in executive communications. Figure 2 provides a clear representation of these variations, highlighting how different firms exhibit distinct linguistic profiles in relation to their financial outcomes

However, some deviations from this trend are observed. Huawei, despite reporting a moderate ROA of 6.8%, exhibits the highest Emotional Tone score 94.85 in the group. This could indicate that some firms strategically use highly positive language in their reports despite moderate financial outcomes, possibly to maintain investor confidence or project a sense of optimism about future growth. Furthermore, regional differences in corporate communication styles may contribute to this tonal variation. Firms based in Asia, such as Huawei, often emphasize positive and reassuring language in corporate disclosures, potentially reflecting cultural preferences for projecting stability and long-term vision, whereas Western firms tend to balance optimism with measured transparency.

Beyond financial performance, the tone of CEOs also appears to play a meaningful role in ESG-related disclosures. Figure 3 demonstrates the results of the LIWC analysis of the linguistic patterns in the letters of CEOs' ESG reports. Additionally, it illustrates how these patterns correspond to the ESG risk ranking. As a publicly accessible ESG report was unavailable for ABB, Huawei and SAP, Kontron and Palo Alto Networks were analyzed instead to ensure representative sectoral coverage.

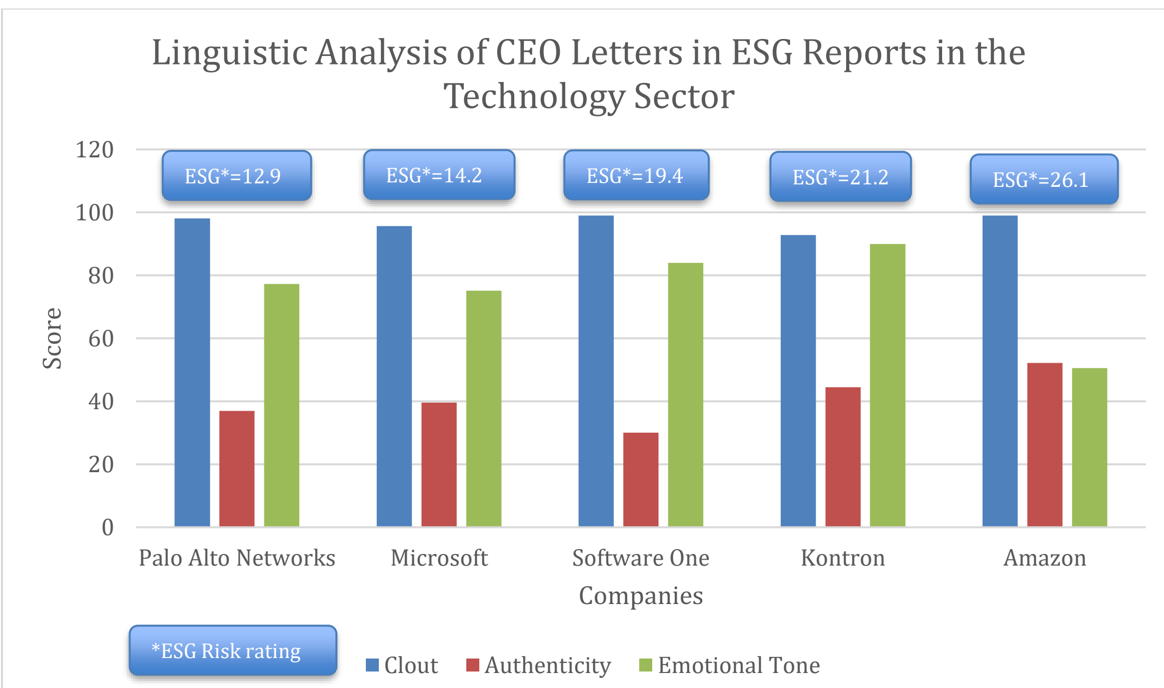

*Figure 3. **Linguistic Analysis of CEO Letters in ESG Reports in the Technology Sector (Own work with data based on ESG reports and LIWC-22 software).***

The results indicate that firms with a lower ESG risk ranking, suggesting better sustainability performance, tend to demonstrate a more positive Emotional Tone in their ESG reports. For instance, Microsoft, Palo Alto Networks and Software One all of which hold an ESG risk rating below 20. These same firms exhibit relatively high Emotional Tone scores of 75.18, 77.22, and 84, respectively. This pattern implies that companies with strong ESG performance are more likely to use confident and optimistic language in their sustainability reports, reinforcing their commitment to responsible business practices. Amazon, categorized with a medium ESG risk rating (above 20), displays the lowest Emotional Tone score of 50.53, which is close to the neutral threshold. This suggests a more cautious or reserved communication approach, potentially influenced by ongoing scrutiny related to governance, environmental impact and labor practices. In contrast, Kontron, despite also being in the medium ESG risk category, reports the highest Emotional Tone in the group 89.93, indicating that ESG risk level does not always correlate directly with linguistic tone. This may reflect a strategic effort to project optimism and confidence in ESG messaging, regardless of the underlying risk rating.

A notable trend is observed in the Authenticity scores, where companies with lower ESG risk ratings tend to have lower Authenticity scores, such as Palo Alto Networks 36.92 and Software One 30.09. This pattern may indicate that highly sustainable companies use more strategic and polished communication, focusing on structured messaging rather than spontaneous or highly transparent disclosures. On the other hand, Amazon, which has a medium ESG risk ranking, records the highest Authenticity score at 52.19, indicating a more open and unfiltered communication style in its ESG reports.

The findings indicate that there is a general tendency for companies with stronger ESG performance, which is reflected in the lower risk ratings, to employ a more positive linguistic tone in their ESG reports. This aligns with the idea that firms with well-established sustainability strategies seek to project confidence and leadership in their communication. In contrast, companies with higher ESG risk ratings, such as Amazon, tend to display lower Emotional Tone and lower Authenticity scores, which may reflect a more cautious, reserved, or strategically managed approach to ESG communication. These patterns suggest that the overall linguistic tone, as well as authenticity, may be influenced by a firm’s sustainability profile. Further research incorporating a larger dataset could provide deeper insights into how CEO tone in ESG reports reflects corporate sustainability efforts and stakeholder engagement.

4.3 Financial Services Sector

Following the analysis of the Technology sector, this section focuses on the Financial Services industry in order to explore how CEO communication styles relate to financial performance. Using LIWC-based textual analysis, the study examines a group of six prominent financial institutions: Bank of China, Goldman Sachs, HSBC, J.P. Morgan, SIX and UBS. Figure 4 provides an overview of the linguistic patterns identified in said companies' CEO letters. A highlight is place on how variations in tone, authenticity and authority correspond to the various levels of financial performance across these global firms.

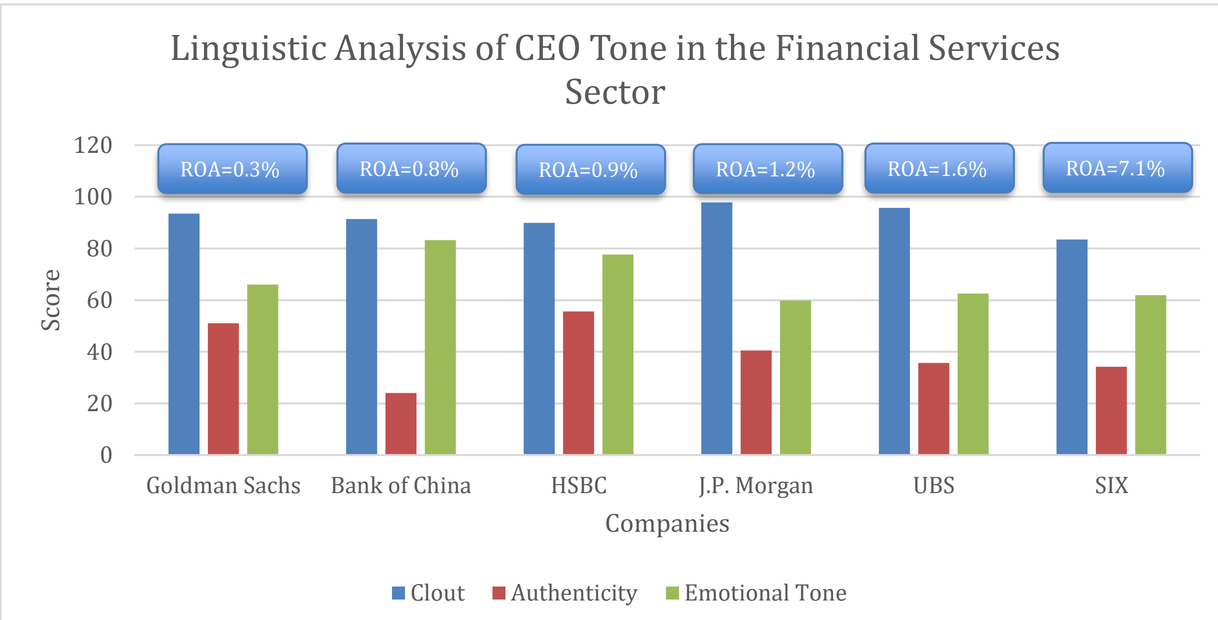

Figure 4. ***Linguistic Analysis of CEO Tone in the Financial Services Sector (Own work with data based on financial reports and LIWC-22 software).***

Bank of China, Goldman Sachs and HSBC are categorized as having weaker financial performance, with ROAs of 0.8%, 0.3% and 0.9%, respectively. Despite its less positive financial results, Bank of China exhibits a high Emotional Tone score of 83.21, suggesting a strategic use of optimistic and confident language. The use of such is possibly motivated with the maintenance of investor confidence and the projection of stability amidst financial challenges. A similar trend was observed in the Technology sector where Huawei, also based in China, displayed an exceptionally high Emotional Tone of 94.85 despite the exhibition of solely financial performance. This pattern may reflect a broader cultural tendency among East Asian firms to emphasize positivity and future-orientation in corporate communication, regardless of short-term financial outcomes. In contrast, Goldman Sachs and HSBC have significantly lower Emotional Tone scores of 65.96 and 77.65, respectively. HSBC, however, stands out with a relatively high Authenticity score of 55.62 which is a potential signal of a more unfiltered or transparent communication style. Such a form of corporate communication has a potential link to the acknowledgment of operational or market challenges. Similarly, Goldman Sachs records an Authenticity score of 51.01, suggesting a degree of openness that might reflect an intentional choice to convey sincerity in the face of financial underperformance.

J.P. Morgan and UBS report ROAs of 1.2% and 1.6%, respectively. J.P. Morgan registers the highest Clout score in this sector with a value of 97.79. A score of this order suggests a strong, authoritative communication style, likely reflecting the firm's established position within the financial industry. However, its Emotional Tone score of 59.78 is rather neutral, indicating a more measured or cautious expression of sentiment. UBS shows a similar profile, with a high Clout score of 95.76 and a moderate Emotional Tone score of 62.53. Both J.P. Morgan and UBS present low Authenticity scores of 40.52 and 35.64, respectively. This indicates a likely more carefully prepared and controlled communication style intended to manage investor perceptions. SIX stands out as the firm with the strongest financial performance in the group, reporting a notably higher ROA of 7.1%. Despite this, the company's Emotional Tone score of 61.87 remains moderate and does not surpass the same score of some firms with weaker financial outcomes. SIX's relatively low Authenticity score 34.17 may indicate a preference for rigorously constructed and strategically polished CEO communications. The Clout score of SIX of 83.44, while strong, is comparatively lower than that of J.P. Morgan and UBS. This can imply that assertive communication is not solely driven by financial success, but that it may also be shaped by institutional communication strategies or cultural norms. This diverges from the Technology sector, where firms with strong financial performance, such as Microsoft and SAP, demonstrated high Clout and Emotional Tone, reinforcing the association between financial strength and assertive optimism in their sector.

The analysis highlights an intriguing dynamic in the Financial Services sector. Companies with weaker financial outcomes, such as Bank of China and HSBC, tend to maintain relatively high levels of Emotional Tone. This may represent a strategic effort to project optimism and stability, potentially aimed at the mitigation of stakeholder concerns associated with underperformance. Notably, these firms also demonstrate higher Authenticity scores, which could indicate a less filtered and more spontaneous communication style. A style of this kind could possibly reflect an intentional emphasis on transparency and credibility in addressing financial challenges.

Conversely, companies with average or good financial performance, such as J.P. Morgan, UBS and SIX, tend to exhibit strong Clout scores paired with comparatively lower Authenticity scores.

This puts an emphasis on a preference for structured, controlled, and confident communication styles with the goal of aligning with their industry leadership perceptions.

These cross-sector comparisons also underscore the importance of cultural and institutional context. For instance, the elevated Emotional Tone observed in Chinese institutions, such as Bank of China and Huawei suggests a potential regional preference for affirming stability and projecting confidence in corporate messaging. Meanwhile, American and European firms, such as J.P. Morgan and SAP, tend to pair assertiveness (high Clout) with reduced Authenticity. Such a tendency can be reflective of a more highly professional tone that aligns with Western corporate norms emphasizing precision and authority over spontaneity.

Furthermore, the analysis underlines key distinction between Emotional Tone and financial performance. Although Emotional Tone is generally positive across the sample, it does not consistently align with financial strength. This pattern implies that tone may be strategically employed by firms, regardless of financial outcomes, potentially influenced by industry norms or organizational communication strategies.

Expanding on the earlier analysis of financial performance, the ESG dimension offers additional insight into CEO communication within the Financial Services sector, which are observable in Figure 5. As ESG data for Bank of China and Goldman Sachs was not publicly available, Banco de Santandor and Bank of India were analyzed as a substitute to ensure balanced representation within the sector. Among the companies analyzed, those with lower ESG risk ratings, such as Banco de Santander and SIX, demonstrate notably high Clout scores of 98.7 and 99, respectively. This observation suggests an authoritative and confident tone in their sustainability disclosures. Despite this strong linguistic presence, both firms display relatively moderate Authenticity values of 28.72 for Banco de Santander and 34.53 for SIX. These values indicate that said companies' ESG narratives may be more strategically structured rather than spontaneous. Additionally, Banco de Santander stands out with a high Emotional Tone score of 82.76, suggesting a strongly optimistic sentiment aligned with its sustainability leadership. SIX, while maintaining confident language, reports a more moderate Emotional Tone of 62.01, indicating a more reserved or balanced expression of sentiment despite its strong ESG standing. This pairing of high Clout with moderate Authenticity points to a strategic communication approach aimed at reinforcing leadership in sustainability while maintaining tight control over narrative tone.

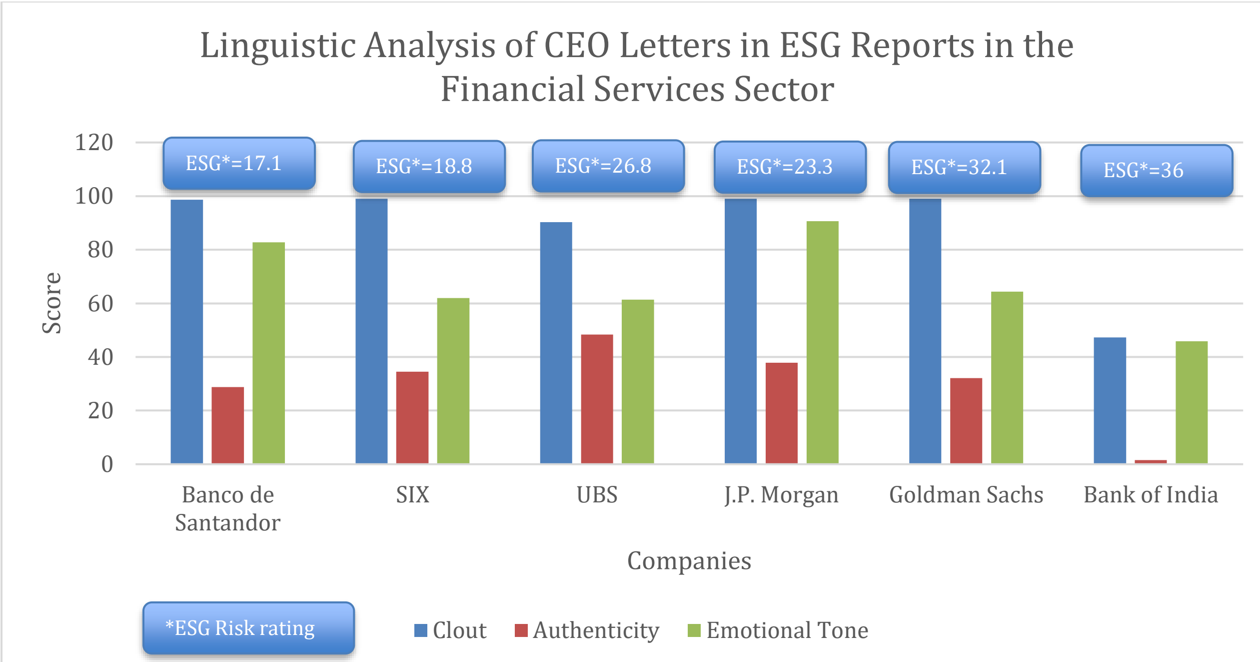

*Figure 5. **Linguistic Analysis of CEO Letters in ESG Reports in the Financial Services Sector (Own work with data based on ESG reports and LIWC-22 software)**.*

UBS and J.P. Morgan, categorized under medium ESG risk, also exhibit notably high Clout values of 90.29 and 99, respectively. This is a reinforcement of their assertive tone in ESG-related communication. UBS, in particular, stands out with the highest Authenticity score in the group 48.32, suggesting a comparatively more transparent and less filtered communication style. Its Emotional Tone score of 61.4 further supports this interpretation, as it indicates a moderately positive tone delivered in an open, albeit controlled manner. In contrast, J.P. Morgan, while equally assertive, shows a lower Authenticity score of 37.8, implying a slightly more calculated and restrained approach. Interestingly, J.P. Morgan also records the highest Emotional Tone in the group 90.64, suggesting that the firm strategically pairs a strong sense of positivity with narrative control. This is potentially done in order to reinforce market leadership and credibility despite moderate ESG risks. Contrasts like the aforementioned point to different strategic priorities within the same ESG risk tier: while some firms emphasize openness, others appear to prioritize control and consistency in their public-facing communications.

Goldman Sachs and Bank of India, though both categorized as high ESG risk enterprises, adopt markedly different communication strategies. Goldman Sachs maintains a high Clout score of 98.95 alongside a moderate Authenticity level of 32.16, signaling a communication style that is confident yet cautiously constructed. Such a tendency could be explained as an attempt to aim at mitigating concerns arising from its weaker ESG performance. Its Emotional Tone score of 64.35

supports this interpretation, reflecting a moderate level of optimism likely designed to project confidence without overstating its ESG position. Bank of India, however, deviates notably from this pattern. With the lowest Emotional Tone score in the group 45.81, paired with the lowest Clout of 47.29 and Authenticity of 1.57, its communication style appears to be significantly reserved. This combination might suggest a restrained or even disengaged approach to ESG communication, with a limited emphasis on assertiveness or transparency in its stakeholder messaging.

Overall, the findings suggest a general correlation between ESG performance and Emotional Tone in CEO communications within the Financial Services sector. Companies with stronger ESG profiles, such as Banco de Santander, JP Morgan and UBS, tend to exhibit higher Emotional Tone scores. A potential explanation for this is the indication of a more optimistic and positive sentiment in the sustainability disclosures of these firms. This pattern mirrors what was previously observed in the Technology sector, where firms such as Microsoft, Palo Alto Networks and Software One, also characterized by low ESG risk ratings, demonstrated similarly elevated Emotional Tone. Such consistency across sectors implies that Emotional Tone is not merely incidental, but may very well serve as a communicative signal of ESG confidence. Conversely, firms with weaker ESG ratings, such as Bank of India, tend to adopt more cautious and less emotionally positive language with the idea of reflecting reputational concerns or limited ESG engagement. These findings suggest that Emotional Tone could be strategically employed to reinforce ESG credibility and leadership, making it a useful indicator of how firms position themselves in the sustainability discourse.

4.4 Energy Sector

Extending the analysis to the Energy sector, this section investigates how CEO tone and linguistic markers align with financial performance among some major industry leading firms. In this context two companies headquartered in the U.S., Chevron Corp. and ConocoPhillips represent companies with strong financial outcomes, represented by the ROA values of 8.2% and 11.4%, respectively. As illustrated in Figure 6, ConocoPhillips shows the highest Emotional Tone 83.36 and highest Authenticity score 54.9 within the sector. Such linguistic patterns are consistent with its favorable financial position, potentially reflecting a deliberate strategy to reinforce stakeholder trust through transparency. Chevron, while slightly lower in Emotional Tone 74.8, maintains a comparable narrative tone, supported by a balanced Authenticity score 42.65. Both firms also score highly on Clout with 90.3 for Chevron and 98.33 for ConocoPhillips, indicating an assertive and authoritative communication style, which is typical for organizations with strong market positions. These findings support the broader trend observed across sectors: firms with robust financial performance tend to project optimism and leadership through their CEO messaging. This echoes observations from the Technology sector, where companies, such as Microsoft and SAP, paired strong financial results with high Emotional Tone and Clout. To further support this trend, UBS and J.P. Morgan from the Financial Services sector exhibited similar patterns.

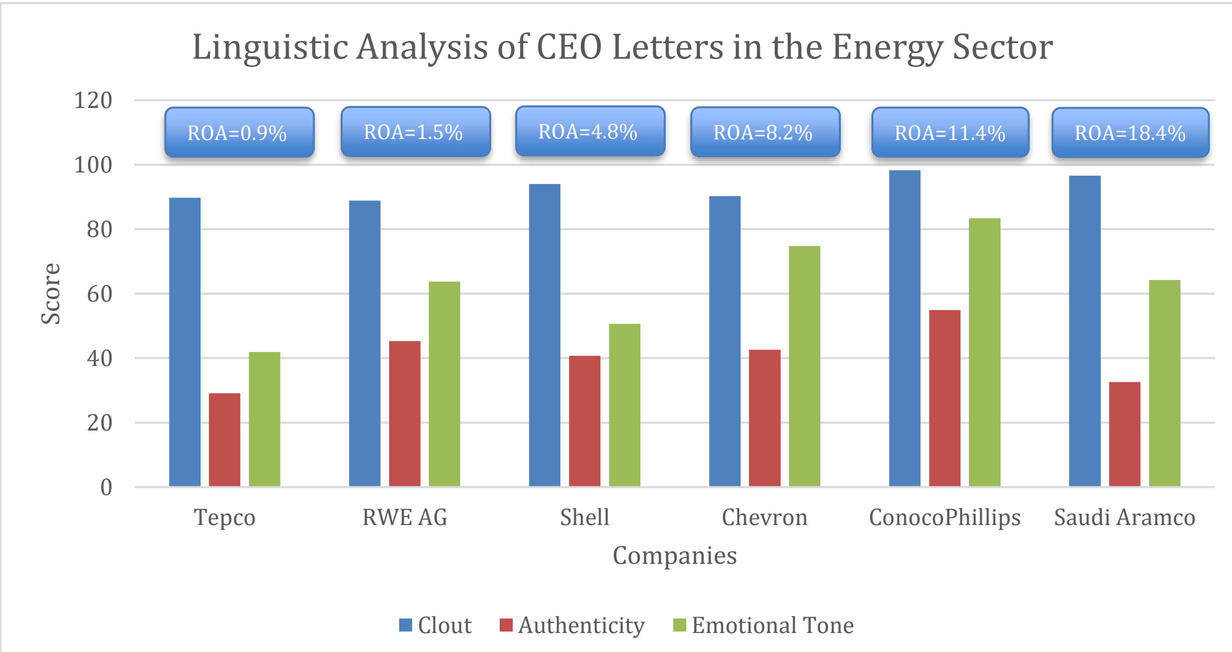

Figure 6. ***Linguistic Analysis of CEO Letters in the Energy Sector (Own work with data based on financial reports and LIWC-22 software).***

Saudi Aramco, headquartered in Saudi Arabia, despite demonstrating the strongest financial performance in the group with an ROA of 18.4%, presents a distinct tonal profile compared to its peers. While its Clout score is significantly high 96.63, signifying a dominant and authoritative communication style, its Emotional Tone 64.29 is comparatively subdued. In addition, the Authenticity score 32.56 is among the lowest in the sector. This combination suggests a communication approach that is likely crafted in a more controlled and strategic manner. This pattern parallels findings in the Financial Services sector, particularly with institutions like SIX and J.P. Morgan, which combined high Clout with moderate tone, suggesting that high financial strength does not always correspond with heightened emotional expression. The more reserved tone of Saudi Aramco also reflects a broader cultural tendency among Gulf-based firms to emphasize institutional authority and control rather than emotional expressiveness in corporate messaging.

In contrast, RWE AG, headquartered in Germany and Tepco, headquartered in Japan, report relatively low ROAs of 1.5% and 0.9%, respectively. What is more, they exhibit comparatively lower Emotional Tone scores of 63.78 for RWE AG and merely 41.89 for Tepco. The latter of these companies demonstrates the lowest Tone and Authenticity in the sample, with a score of 29.08 for Authenticity. This tendency could be reflective of a more reserved and cautious communication approach, opting for a tone that is reserved rather than candid. RWE's moderate Authenticity 45.33 and lower Clout 88.87 further point to a less assertive and more restrained leadership communication style in light of its weak financial standing. Tepco’s highly restrained tone aligns with broader East Asian communication norms observed previously with Huawei and Bank of China, favoring modesty, control, and risk-aversion in public disclosures.

Shell, headquartered in the United Kingdom, recorded an ROA of 4.8% and demonstrates a distinct linguistic profile. It records the lowest Emotional Tone among mid-performing firms with a value of 50.64. This observation can be suggestive of a more neutral or reserved affect in its CEO communication. This is accompanied by a moderate Authenticity score of 40.77 and a notably elevated Clout score of 94.05. The disparity between Shell’s assertive communication style and its relatively muted emotional tone may reflect a strategic balancing act, projecting authority and confidence while simultaneously tempering expectations or addressing stakeholder sensitivities. This mirrors communication patterns observed in other European firms, such as SAP and HSBC, where structured professionalism and cautious optimism were prioritized over emotional candor.

In summary, a consistent pattern suggests that companies with stronger financial performance, such as ConocoPhillips and Chevron, tend to adopt a communication style marked by higher Emotional Tone and elevated Clout. Linguistic characteristics of this type could be conveying a more confident and optimistic style of leadership messaging. In contrast, companies with weaker financial results frequently exhibit lower scores in both Emotional Tone and Authenticity, which may indicate a more restrained or risk-averse approach to stakeholder communication. However, deviations, such as Saudi Aramco, exist. Namely, it is demonstrated that even firms with outstanding financial metrics may adopt a more subdued emotional tone, pointing to the nuanced role of institutional and cultural factors in shaping corporate narrative strategies. These findings are consistent with earlier sector analyses. American and European firms across sectors tended to favor assertiveness and high Clout while moderating their Authenticity, thereby emphasizing on a preference for structured professionalism over spontaneous expression. In contrast, Huawei and Bank of China, both based in East Asia, showed high Emotional Tone despite less favorable financial metrics.

In contrast to the previously analyzed Financial Services sector, the Energy sector exhibits a distinct linguistic profile in ESG-related CEO communications. This is marked by consistently high Clout scores and notable variation in Emotional Tone and Authenticity, which appear to align with differing ESG risk levels, as illustrated in Figure 7. The analysis excludes RWE AG, as no ESG report was publicly available.

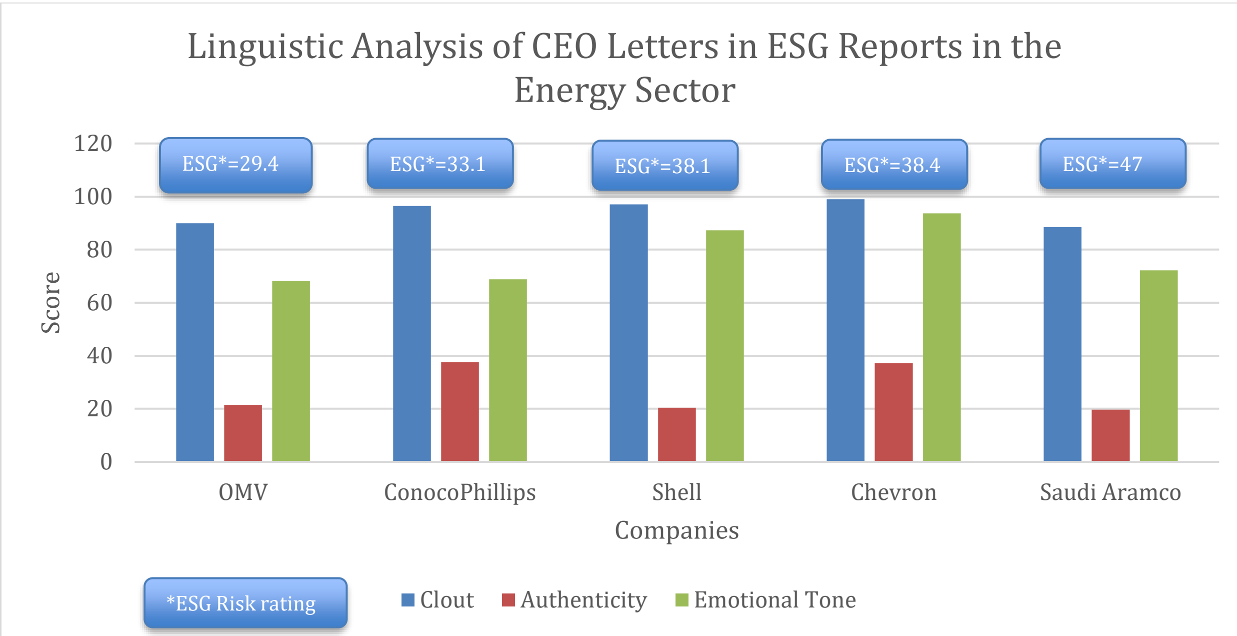

Figure 7. ***Linguistic Analysis of CEO Letters in ESG Reports in the Energy Sector (Own work with data based on ESG reports and LIWC-22 software)***.

Chevron Corp., ConocoPhillips and Shell are all categorized as high ESG risk companies, with ESG risk scores of 38.4, 33.1, and 38.1 respectively. Notably, these firms exhibit some of the highest Emotional Tone values in the sample Chevron at 93.68, Shell at 87.23 and ConocoPhillips at a comparatively moderate 68.75. This trend may suggest a deliberate use of positive sentiment in corporate communication with the goal of projecting optimism and stability despite an elevated ESG risk exposure. Such a strategy could be interpreted as an effort to manage external perceptions, mitigate reputational risks, or reassure investors. The consistently high Clout scores that were observed for Chevron (99), Shell (97.04) and ConocoPhillips (96.44) further reinforce this interpretation, reflecting confident, top-down communication likely intended to convey leadership and control in navigating ESG challenges.

In contrast, Authenticity scores across the high-risk group remain relatively low Chevron Corp. (37.15), Shell (20.44) and ConocoPhillips (37.58). These figures suggest that the language may be highly curated and strategically constructed, potentially aimed at shaping stakeholder perceptions rather than reflecting spontaneous communication. This aligns with previous sectoral observations, where higher Clout tends to be inversely related to lower Authenticity, particularly in firms under significant reputational or regulatory pressure.

OMV, categorized under "Medium" ESG risk with a score of 29.4, presents a distinct communicative profile. It maintains a moderate Emotional Tone 68.18 and Clout 89.92, signaling a generally confident but measured tone. However, its notably low Authenticity score 21.53 suggests that the company favors a controlled and deliberate messaging style. This reinforces the notion that even firms with moderate ESG risk may prioritize strategically framed communication over spontaneous or highly transparent disclosures.

Saudi Aramco, identified as having the highest ESG risk in the dataset ("Severe" at 47), presents a moderately positive Emotional Tone (72.23) alongside the lowest Clout score in the group (88.52). Its Authenticity score is also low at 19.71, suggesting highly regulated or externally moderated communication. Despite its elevated ESG risk, the communication tone remains optimistic, possibly reflecting the company's effort to mitigate risk perceptions through positive sentiment rather than through direct acknowledgment of ESG challenges.

In general, the linguistic patterns observed across the Energy sector suggest that companies with greater ESG risk exposure tend to adopt a more confident and emotionally upbeat tone. This is likely aimed at preserving stakeholder trust and minimizing reputational concerns. However, this assertive style is frequently accompanied by reduced Authenticity, implying a carefully constructed narrative rather than transparent disclosure. These findings outline the complex relationship between risk management, tone and communicative openness in ESG reporting, particularly within high-impact sectors like energy.

4.5 Healthcare Sector

Following the evaluation of CEO tone in the Energy sector, the analysis now moves to the Healthcare sector, a field where corporate narratives are closely tied to public trust, ethical considerations and societal well-being. The sample consists of six prominent healthcare organizations: Abbott Laboratories, Apollo Hospitals, CVS Health Corporation, Johnson & Johnson, Medtronic Ireland Limited and Novartis AG. These firms vary in financial performance and communication style, offering valuable insights into how tone and language are used to engage stakeholders in a sector that is defined by both scientific innovation and social responsibility, as illustrated in Figure 8.

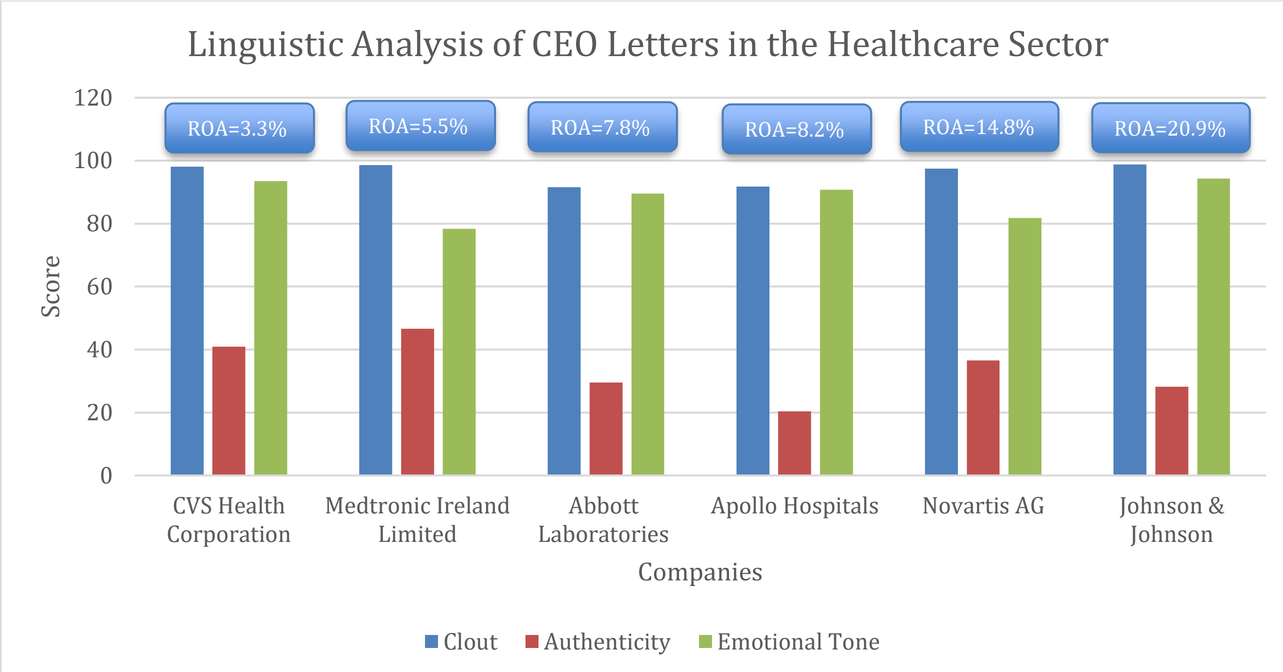

Figure 8. ***Linguistic Analysis of CEO Letters in the Healthcare Sector (Own work with data based on financial reports and LIWC-22 software).***

Abbott Laboratories and Apollo Hospitals, both classified as having average financial performance with ROA of 7.8% and 8.2%, respectively, exhibit notably high Emotional Tone scores of 89.53 for Abbott Laboratories and 90.72 for Apollo Hospitals. This suggests a consistently optimistic communication strategy. Both firms also display moderate Clout scores of 91.59 and 91.81, indicating a confident yet measured leadership tone in their communications. However, their relatively low Authenticity scores of 29.52 for Abbott and 20.39 for Apollo, imply that these CEO messages may be more strategically crafted than spontaneously delivered. This mirrors trends observed in the Financial Services sector, where firms, such as SIX and UBS similarly balanced financial strength with highly structured, low-authenticity communication styles, likely in an effort to maintain professionalism and narrative control.

Johnson & Johnson and Novartis AG, reporting ROAs of 20.9% and 14.8%, respectively, stand out for their strong Clout values of 98.81 and 97.42, which reflect a highly authoritative and assertive communication style in their CEO narratives. These companies also record high Emotional Tone scores of 94.35 and 81.77, suggesting a positive correlation between financial strength and optimistic messaging. Nonetheless, their Authenticity scores remain low with values of 28.19 and 36.55. This aligns with the pattern observed in other high-performing firms in the

Technology and Energy sectors (e.g., Microsoft and Chevron Corp.), where strong financial outcomes were accompanied by confident yet carefully structured communication.

Conversely, CVS Health Corporation and Medtronic Ireland Limited are categorized as companies having weaker financial performance, with ROAs of 3.3% and 5.5%, respectively. Despite these modest outcomes, both companies display notably elevated Emotional Tone scores of 93.50 for CVS Health Corporation and 78.36 for Medtronic Ireland Limited. This suggests that, similar to the Energy sector firms, such as RWE AG and Saudi Aramco, companies with weaker financials may still employ highly optimistic tones. Tones of this type can be a potential strategic tool for reassuring stakeholders, as well as for projecting resilience. CVS Health Corporation, in particular, has a relatively high Authenticity score of 40.91, which may reflect a more open communication approach, a trend similarly noted in Financial Services firms such as HSBC and Goldman Sachs.

Overall, the Healthcare sector reinforces a consistent cross-sector pattern: companies with stronger financial performance tend to exhibit high Clout and Tone scores, but low Authenticity, indicating confident and optimistic, yet strategically curated communication. This suggests a preference for carefully curated, strategically managed narratives. In contrast, organizations with weaker or average financial performance display more variability, often combining optimistic tone with comparatively higher Authenticity scores. Such a measure could be employed in order to reflect an effort of projecting sincerity and resilience during financially challenging periods. Unlike the more emotionally subdued tone observed in certain Energy sector firms, such as Shell or Tepco, the Healthcare sector maintains a more consistently positive tone across the performance spectrum. This may reflect the sector's unique emphasis on public trust, ethical leadership and stakeholder reassurance, particularly given its direct engagement with patients, regulators, and broader society.

Building on the previous ESG analysis, this section explores how CEO communication in the healthcare sector aligns with ESG performance. Figure 9 focuses on identifying whether linguistic indicators, such as Clout, Authenticity and Emotional Tone, reflect similar patterns to those observed across previously analyzed sectors.

Due to the unavailability of a publicly accessible ESG report for Abbott Laboratories, Butterfly Healthcare was analyzed instead to ensure representative sectoral coverage. The six companies analyzed demonstrate a diverse range of ESG risk profiles, as illustrated in Figure 9. Among them, Apollo Hospitals, with a medium ESG risk score of (25), presents a distinctive linguistic pattern characterized by high Clout (95.94), strong Authenticity (58.59) and a significantly positive Emotional Tone (92.51). The combination of high Authenticity and Emotional Tone suggests a confident yet transparent communication approach. Similar trends were observed in the Technology sector with firms such as Software One and Microsoft, where low ESG risk companies maintained elevated tone scores while adopting moderately authentic language. In this context, Apollo Hospitals' linguistic profile may indicate that firms with moderate ESG risk in healthcare are intentionally emphasizing openness and proactive engagement with sustainability, even before reaching top-tier ESG performance.

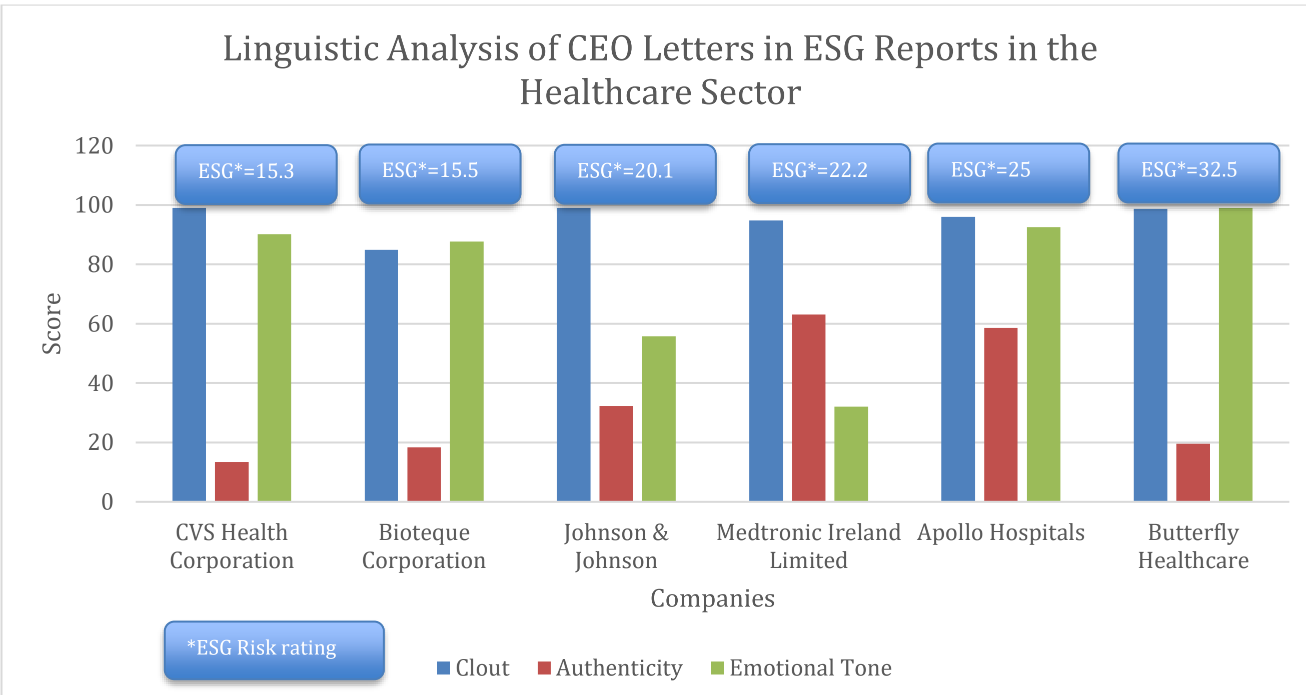

Figure 9. ***Linguistic Analysis of CEO Letters in ESG Reports in the Healthcare Sector (Own work with data based on ESG reports and LIWC-22 software).***

Bioteque Corporation and CVS Health Corporation, both categorized as having low ESG risk scores of 15.5 and 15.3, respectively, demonstrate notably different communication approaches. Bioteque Corporation shows a moderately high Emotional Tone of 87.63 and a low Authenticity score of 18.32, indicating a controlled, however optimistic message, possibly designed to reinforce its ESG credibility without exposing operational vulnerabilities. In contrast, CVS Health Corporation, despite a similarly favorable ESG profile, exhibits the lowest Authenticity score in the sector with value of 13.39, pointing to an even more curated and strategically filtered messaging style. This approach mirrors communication practices found in Financial Services firms, such as Goldman Sachs and HSBC, where low Authenticity was also accompanied by a low ESG risk. These patterns suggest that while low ESG risk is often associated with optimistic communication, companies may vary in how openly they express said risk. Some companies, including Bioteque Corporation, adopt a moderately authentic tone, balancing positivity with a certain degree of transparency. Other companies, including CVS Health Corporation, appear to prioritize highly polished messaging, possibly to maintain a tightly managed public image and mitigate reputational risk. This variation implies that strong ESG performance does not automatically lead to more open communication, but rather influences how carefully the message is shaped.

In contrast, Butterfly Healthcare, which holds a relatively high ESG risk rating of 32.5, adopts a different communication strategy. Despite its poor ESG standing, the company reports the highest Emotional Tone score 99 and a very high Clout score of 98.66. Similar linguistic behavior was previously identified in the Energy sector, particularly with Saudi Aramco and Chevron Corp., where companies facing high or severe ESG risk also employed optimistic or even overly positive tone in ESG disclosures. This may reflect an industry-wide pattern where companies under scrutiny attempt to reinforce their resilience and vision through tone, despite underlying risks.

Johnson & Johnson and Medtronic Ireland Limited, both assessed as medium ESG risk entities with score of 20.1 and 22.2, respectively, adopt divergent tonal strategies. Johnson & Johnson shows a relatively moderate Emotional Tone of 55.77 and low Authenticity score of 32.31, reflecting a more reserved or balanced narrative. Medtronic Ireland Limited, on the other hand, presents the lowest Emotional Tone of 32.1 in the sector but the highest Authenticity score of 63.05, signaling an unusually restrained tone. This inverse relationship between tone and Authenticity may suggest an intentional shift toward greater transparency in addressing ESG risks, rather than masking them with positive language. Such a communication strategy sets Medtronic Ireland Limited apart from its peers and is comparable to Amazon’s approach in the Technology sector, where the company’s ESG report also featured lower tone and higher Authenticity, hinting at a realistic approach to facing ESG-related criticism. This mirrors similar findings from the Technology sector, particularly Amazon’s ESG communication, which also combined a muted tone with higher Authenticity, potentially signaling a willingness to acknowledge and address sustainability challenges directly.

The ESG-related linguistic patterns observed in the Healthcare sector highlight a nuanced and varied approach to corporate communication. Firms with low ESG risk, such as Bioteque Corporation and CVS Health Corporation, tend to rely on carefully structured language that prioritizes message control over transparency. In contrast, companies facing medium to high ESG risks exhibit a wider range of styles, from the highly positive tone of Butterfly Healthcare to the more candid, restrained voice of Medtronic Ireland Limited. Compared with other sectors, Healthcare demonstrates a greater flexibility in emotional expression, likely reflecting the sector's unique need to balance scientific credibility, ethical responsibility and public trust. These findings reinforce the idea that ESG narratives are shaped not only by risk exposure, but also by the strategic intent of each organization. The latter of these two factors is in turn shaped by industry norms, stakeholder expectations and institutional culture.

4.6 Industrial Manufacturing Sector

This section explores how financial performance, measured by ROA, aligns with CEO communication patterns as identified through LIWC analysis for companies in the Industrial Manufacturing sector. The findings of this subsection are illustrated in Figure 10.

The Industrial Manufacturing sector includes six companies: China Railway Group Limited, HP, Patrick Industries, Siemens, Volkswagen Group and ZF Friedrichshafen AG. Among these, Siemens clearly stands out with the highest ROA of 25%, considerably outperforming the others. However, in contrast to earlier sectors where stronger financial performance was often accompanied by high Emotional Tone scores, such as in the Healthcare or Technology sectors, Siemens records one of the lowest Emotional Tone scores with a value of 32.47. This result suggests a more reserved or cautious communication approach, contrasting with companies such as Microsoft or Johnson & Johnson, where financial strength was reflected in highly optimistic CEO narratives.

China Railway Group Limited and Volkswagen Group, both reporting modest ROAs of 2.1% and 2.3%, respectively, show a significant divergence in their linguistic profiles. China Railway Group Limited demonstrates a very high Emotional Tone of 97.82, suggesting a highly optimistic narrative despite its relatively weak financial performance. This pattern echoes findings in the Financial Services sector, where firms such as Bank of China similarly projected confidence in the face of modest outcomes, potentially reflecting a cultural or strategic preference for reassurance in corporate messaging. In contrast, Volkswagen Group demonstrates a significantly lower Emotional Tone score of 62.36, indicating a more measured or reserved communication approach. This divergence between the two firms brings out how companies with comparable financial metrics can adopt markedly different linguistic strategies, possibly influenced by regional communication norms or organizational branding priorities.

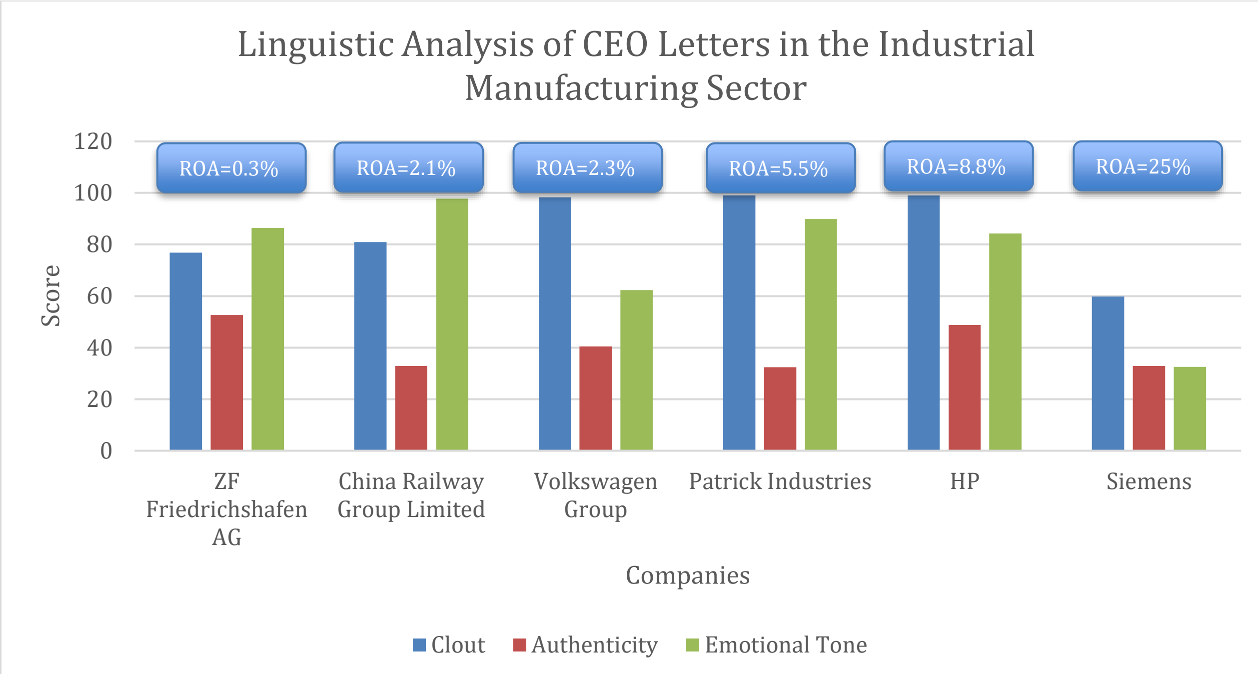

Figure 10. ***Linguistic Analysis of CEO Letters in the Industrial Manufacturing Sector (Own work with data based on financial reports and LIWC-22 software).***

HP and Patrick Industries report ROAs of 8.8% and 5.5%, respectively. Both companies exhibit very high Clout scores (99), similar to trends noted in the Financial Services and Healthcare sectors. In this sectors, firms such as J.P. Morgan, UBS and CVS Health Corporation, used assertive and confident communication styles to reinforce leadership perception. Notably, both HP and Patrick Industries also maintain high positive Emotional Tone scores 84.25 and 89.86, respectively. This combination suggests that even in the absence of outstanding financial results, firms may utilize tone and Clout strategically to project stability, competence, and forward-looking confidence.

ZF Friedrichshafen AG presents an interesting contrast within the Industrial Manufacturing sector. Despite recording the lowest ROA in the group (0.3%), the company maintains a relatively moderate Emotional Tone of 86.35 and the highest Authenticity score in the sector with a value of 52.63. This mirrors patterns observed in companies such as HSBC and Goldman Sachs in the Financial Services sector, where lower financial performance coincided with higher Authenticity in CEO communications. Such a linguistic profile may indicate a deliberate emphasis on transparency or a reduction in managerial filtering, suggesting that companies under financial strain might adopt more candid or less curated messaging to foster trust and credibility among stakeholders.

A general observation in the Industrial Manufacturing sector is the prevalence of high Clout scores across companies, regardless of financial performance. This aligns with patterns observed in other sectors, such as Financial Services and Healthcare, where firms, including J.P. Morgan, UBS and CVS Health Corporation consistently employed authoritative communication styles to reinforce leadership presence. However, unlike the Technology and Healthcare sectors, where higher financial performance was often associated with elevated Emotional Tone (e.g., Microsoft and Johnson & Johnson), the correlation between Emotional Tone and financial success in Industrial Manufacturing appears less consistent. For instance, Siemens, despite its outstanding financial results, demonstrated a notably low Emotional Tone, suggesting that emotional expression in CEO communication in this sector may be shaped more by industry-specific norms or institutional culture rather than solely by performance.

Overall, while the Industrial Manufacturing sector shares some similarities with previous sectors, particularly in terms of Clout, it reveals a weaker alignment between Emotional Tone and financial outcomes. This is divergent from the patterns observed in the Technology and Healthcare sectors, where positive tone often accompanied strong performance. These findings further emphasize the need to contextualize linguistic communication patterns within industry-specific norms and stakeholder expectations.

Within this sector, companies exhibit diverse ESG risk ratings, as illustrated in Figure 11, ranging from low risk (HP, Mercedes-Benz) to medium risk (Patrick Industries, Siemens, Volkswagen Group) and high risk (China Railway Group Limited). Due to the unavailability of a publicly accessible ESG report for ZF Friedrichshafen, Mercedes-Benz was analyzed instead to ensure representative sectoral coverage. Notably, HP and Mercedes-Benz, both classified as low ESG risk firms with scores of 10.6 and 15.7, respectively, demonstrate exceptionally high Clout (97.36 and 97.79) and elevated Emotional Tone (90.37 and 86.68). This suggests a strong and optimistic communication style aligned with their favorable sustainability standing.

Patrick Industries, with a medium ESG risk rating of 30.8, stands out due to its extremely high Clout of 99 and Tone of 99, but moderate Authenticity score 33.15. Compared to the Energy sector, where firms such as Chevron Corp. and ConocoPhillips, exhibited lower Authenticity scores despite strong Clout, Patrick Industries appears to employ an equally structured, however slightly more emotionally amplified narrative strategy. This might hint at a strategic choice to amplify emotional appeal while maintaining message discipline, particularly in navigating stakeholder expectations related to sustainability.

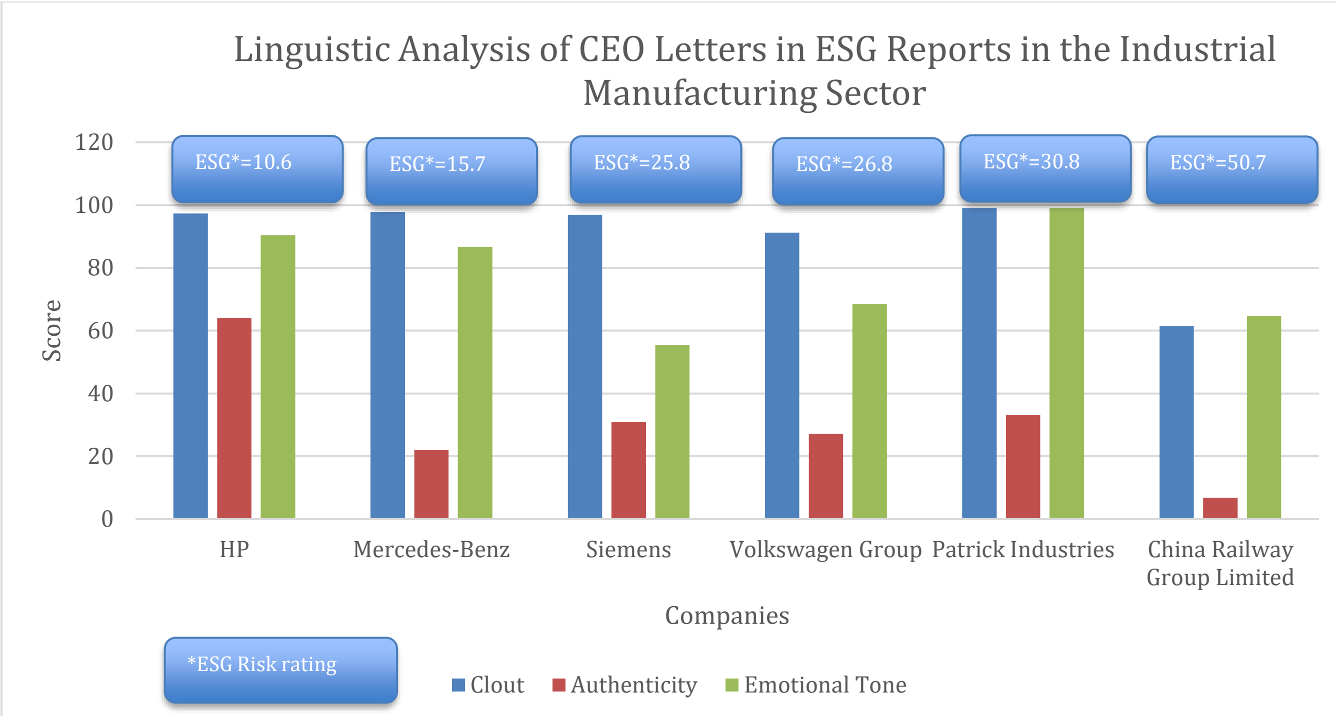

Figure 11. ***Linguistic Analysis of CEO Letters in ESG Reports in the Industrial Manufacturing Sector (Own work with data based on ESG reports and LIWC-22 software).***

In contrast, China Railway Group Limited demonstrates a significantly different linguistic profile. With a high ESG risk rating of 59.7, it records a low Clout score of 61.48 and the lowest Authenticity in the sector with a score of 6.74. The low Authenticity mirrors the findings of certain Financial Services firms, such as Bank of India, which also exhibited low Authenticity scores and higher ESG risk. This could suggest that firms facing ESG-related challenges tend to adopt more cautious or less transparent communication strategies, potentially to manage reputational risks.

Siemens and Volkswagen Group, both categorized under medium ESG risk, present an intermediate profile. Siemens has a relatively low Emotional Tone score 55.47 compared to its sector peers, indicating a more cautious or neutral sentiment, somewhat resembling patterns seen in the Energy sector (e.g., Shell, where lower Tone corresponded with moderate ESG outcomes). Volkswagen Group similarly shows moderate Emotional Tone 68.51 and mid-range Authenticity score 27.17, suggesting structured albeit slightly less emotionally positive communication relative to HP and Mercedes-Benz.

Overall, the Industrial Manufacturing sector demonstrates a wide variance in linguistic strategies tied to ESG performance. Companies with better ESG ratings, such as HP and Mercedes-Benz, tend to combine high Clout, positive Emotional Tone, and moderate to high Authenticity, reinforcing the trend already observed across the Healthcare and Technology sectors.

Meanwhile, firms with weaker ESG standings exhibit lower Authenticity and less emotionally positive communication, highlighting a possible strategic shift towards less transparent narrative styles in response to ESG challenges.

4.7 Consumers Goods Sector

The Consumer Goods sector demonstrates a consistent pattern of assertive and optimistic CEO communication, particularly among firms with strong financial performance, which can be observed in Figure 12. Nestlé, with the highest ROA in the group (37.2%), also registers the most postive Emotional Tone with a score of 92.32 and the highest Clout with a score of 99, signaling a highly confident and upbeat messaging style. A comparable trend is evident in Colgate-Palmolive, which has a stable ROA of 14.9% and which also maintains a high Clout of 98.12 together with a relatively elevated Emotional Tone of 75.27. These firms exemplify the broader pattern identified across sectors such as Technology and Healthcare, where strong financial results are paired with positive, structured, and authoritative communication.

In contrast, Coty Inc., with a moderate ROA of 4.2%, presents the lowest Clout score of 50.07 and Emotional Tone 30.74, but the highest Authenticity score 56.65 in the sector. This suggests a more spontaneous and potentially vulnerable communication style, possibly reflecting a lower degree of management filtering or a strategic emphasis on transparency. The Clorox Company and Unilever Global, both with moderate ROAs of 2.7% and 9.4% respectively, exhibit similarly balanced linguistic profiles. The Clorox Company reports a high Tone of 85.12 and a maximum of Clout 99 with a moderate Authenticity score 30.65, indicating a polished yet confident message style despite relatively modest returns. Unilever, while maintaining a high Tone of 80.52 and an Authenticity of 48.36, demonstrates a slightly lower Clout of 84.39 compared to its peers, reflecting a more nuanced communication style.

These variations reinforce sector-wide findings. High-performing firms, such as Nestlé and Colgate-Palmolive, consistently use language marked by high Clout and Tone, as well as lower Authenticity, emphasizing control and optimism. Conversely, firms with more modest performance, such as Coty Inc. and Unilever Global, appear to rely more on authentic expression, possibly as a credibility-building mechanism. Similar dynamics were observed in the Energy and Financial Services sectors, where high Authenticity scores often accompanied lower financial returns, reflecting an effort to manage stakeholder expectations through more candid discourse. The Consumer Goods sector thus illustrates the strategic role of CEO tone in aligning financial outcomes with stakeholder communication.

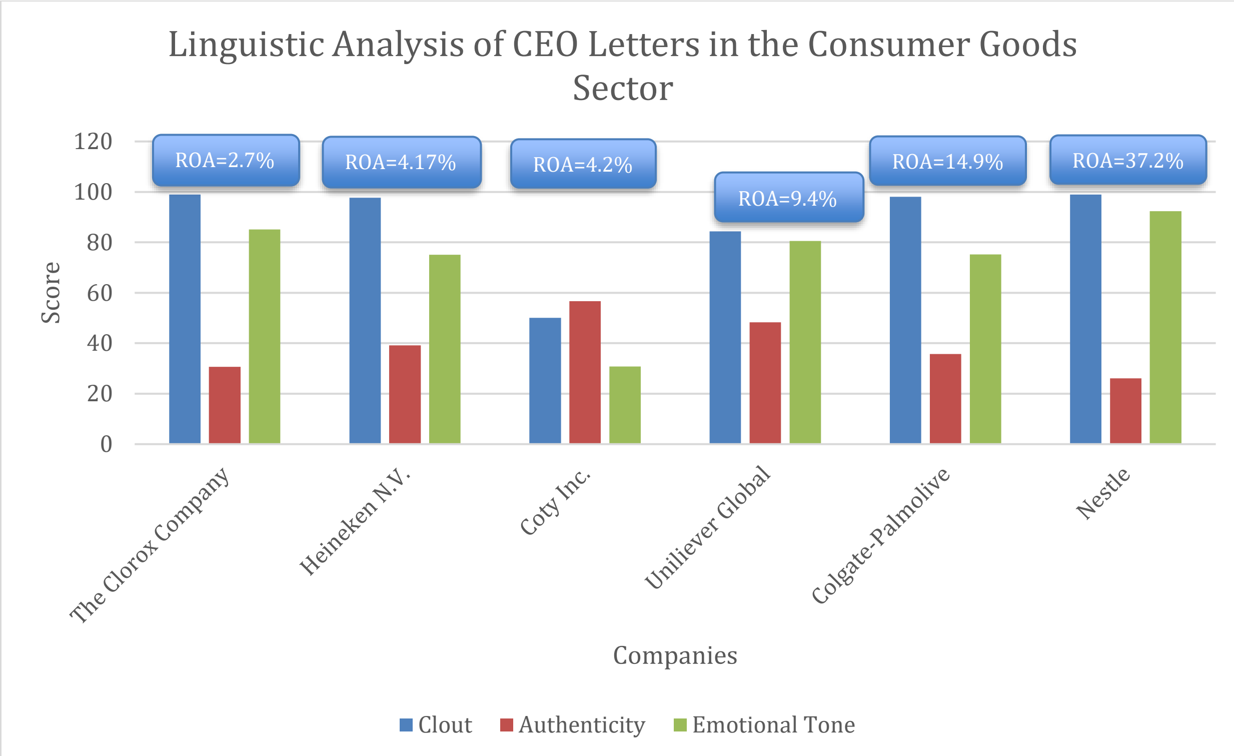

Figure 12. ***Linguistic Analysis of CEO Letters in the Consumer Goods Sector (Own work with data based on financial reports and LIWC-22 software).***

In the Consumer Goods sector, the linguistic analysis of CEO letters in ESG reports reveals some notable patterns, illustrated in Figure 13. Given the unavailability of publicly disclosed ESG data for The Clorox Company, Coty Inc. and Heineken N.V., Kosé Corporation and L'Oréal S.A were incorporated into the analysis to uphold sectoral representation. Clout scores remain consistently high across all companies, ranging from 87.72 (Kosé Corporation) to 99 (Nestlé), indicating a strong presence of confident and authoritative communication. This mirrors trends observed in sectors such as Healthcare and Industrial Manufacturing, where a strong corporate identity and leadership communication often coincide with high Clout score.

Tone values in this sector are similarly elevated, with L'Oréal S.A. leading at 97.95 and Nestlé following closely at 91.46. This trend suggests a deliberate communicative strategy focused on optimism and strategic reassurance in ESG reporting. Compared to other sectors, such as Energy or Financial Services, where tone varied more widely depending on ESG risk levels, the Consumer Goods sector appears to favor a consistently positive messaging strategy, regardless of ESG classification.

Interestingly, Authenticity scores vary significantly within this sector. L'Oréal S.A. displays the highest level of Authenticity at 68.69, while Nestlé ranks notably low at 9.29. This disparity may reflect differing narrative strategies, where some firms prioritize more candid, unfiltered messaging, while others adopt a more polished and controlled manner of communication, possibly due to regulatory sensitivities or branding priorities. This contrast mirrors patterns observed in the Technology sector, where firms such as Huawei employed a highly optimistic tone with relatively low Authenticity, pointing to a strategic emphasis on positivity rather than spontaneous disclosure.

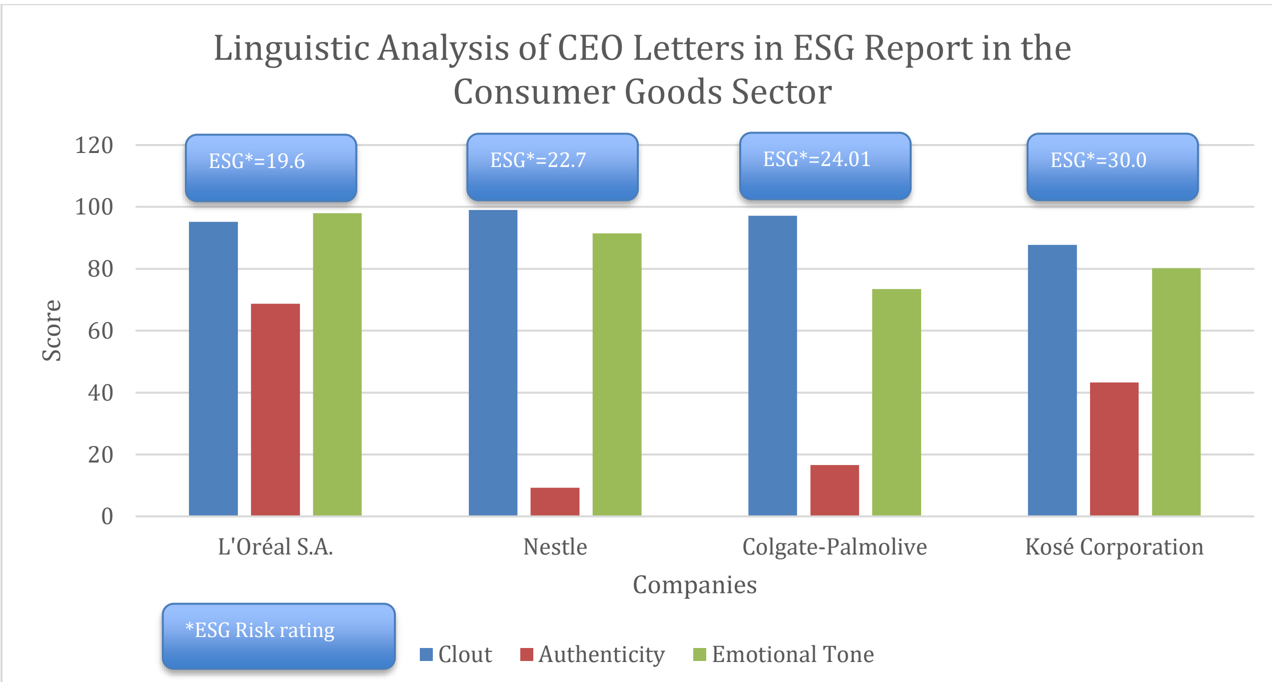

*Figure 13. **Linguistic Analysis of CEO Letters in ESG Reports in the Consumer Goods Sector (Own work with data based on ESG reports and LIWC-22 software).***

In terms of ESG performance, the Consumer Goods sector conveys a relatively narrow range of ESG risk scores, with L'Oréal S.A. demonstrating the strongest performance at 19.60 and Kosé Corporation positioned at the higher-risk end with 30. Firms such as L'Oréal, which combine high Authenticity with strong ESG scores, may be perceived as more transparent and credible in their sustainability messaging. This stands in contrast to companies such as Nestlé, whose high Clout and Tone scores are coupled with low Authenticity, reflecting a more image-managed ESG narrative, an approach also noted in firms such as Amazon within the Technology sector.

Overall, ESG communication in the Consumer Goods sector reflects a consistent emphasis on confident and optimistic messaging, particularly through elevated Clout and Emotional Tone scores. However, levels of Authenticity vary notably among firms, suggesting varying approaches to transparency. While some companies such as Nestlé and Colgate-Palmolive favor polished, controlled narratives aimed at reinforcing brand strength and stakeholder confidence, others such as L'Oréal S.A. and Kosé Corporation adopt a more candid tone that may enhance credibility. These patterns support broader cross-sector findings: linguistic strategies in ESG disclosures are shaped not only by performance metrics but also by strategic considerations around reputation management and stakeholder engagement.

4.8 Cultural Differences

In addition to sectoral variation, the analysis also reveals notable differences in CEO tone based on the geographic origin of the firms. These distinctions on a national level appear to influence how companies express Emotional Tone, Clout and Authenticity in their corporate narratives, suggesting the presence of underlying cultural and institutional factors in shaping executive communication. American companies such as Microsoft, J.P. Morgan, ConocoPhillips and Johnson & Johnson, for instance, consistently exhibit high Clout and Emotional tone. This reflects the U.S. corporate communication norm that emphasizes assertiveness, confidence and forward-looking optimism, particularly in leadership discourse. In contrast, European firms such as SAP (Germany), ABB (Switzerland) and Novartis AG (Switzerland) also display high Clout and Emotional Tone but tend to score lower on Authenticity. This pattern may reflect a European preference for structured, polished narratives that prioritize strategic messaging and professionalism over unfiltered expression.

Asian firms display the most distinctive tonal patterns in the dataset. Companies such as Huawei and China Railway Group Limited, both headquartered in China, demonstrate exceptionally high Emotional Tone scores despite only moderate financial performance. This tendency is consistent with recent research on Chinese corporate disclosures, which highlights a pattern of systematically optimistic language that may mask underlying performance challenges and is often associated with increased financial risk and lower financial performance in subsequent periods (Cui et al., 2024). Such practices may also reflect broader cultural norms in East Asia, where corporate communication often emphasizes harmony, optimism and the projection of long-term stability over short-term results. Similarly, entities such as the Bank of China and Saudi Aramco use a positive or authoritative tone regardless of performance, possibly as a means of projecting institutional legitimacy and continuity in contexts where state involvement or public trust plays a significant role in corporate affairs. Notably, Authenticity scores tend to be lower among Asian

firms, such as Huawei and China Railway Group Limited, indicating a more controlled narrative style, possibly influenced by hierarchical corporate structures or sensitivity to reputational risk.
These geographic distinctions are summarized in Table 1 below, which presents average patterns and general trends across regions in ESG Risk, ROA, and linguistic dimensions such as Clout, Emotional Tone, and Authenticity. More detailed insights and company-specific data supporting these observations can be found in Appendix A and Appendix B, which include the full results from the linguistic and performance analyses. The table does not reflect individual scores, but rather highlights representative tendencies observed within each regional group.

Metrics	American Companies	European Companies	Asian Companies
ESG Risk	high	low/high	low/high
ROA	low/high	low/high	low
Clout	high	high	high
Emotional Tone	high	high	high
Authenticity	medium	mostly low	low/high

Table 1. ***Differences across regions in ESG Risk, ROA and linguistic dimensions, such as Clout, Emotional Tone and Authenticity***

Moreover, while my findings suggest that firms based in countries with well-established ESG reporting frameworks, such as the United States, Germany and Switzerland, tend to demonstrate a more consistent alignment between their ESG performance and the tone used in CEO communications, recent evidence suggests that is not always the case. A study by Brüske, Ratzinger-Sakel, and Habermann (2024) finds a significant negative association between the *abnormal tone* in CEO letters within ESG reports and future ESG performance. This suggests that even in jurisdictions with mature reporting systems, CEOs may employ overly optimistic language in ESG communications to mask anticipated sustainability shortcomings (Brüske et al., 2024). In contrast, firms operating in countries where ESG regulation is still evolving, such as India and China, exhibit greater variability in how CEO tone relates to ESG standing. Apollo Hospitals, for instance, pairs a medium ESG risk rating with both high Authenticity and high Emotional Tone, which may reflect an intentional effort to enhance ESG credibility amid a developing regulatory landscape. This suggests that the maturity of national ESG standards plays a role in shaping how tone is used to frame sustainability narratives.
Taken together, these geographic patterns suggest that CEO communication is not only influenced by financial or ESG metrics, but also by institutional norms, stakeholder expectations

and cultural values prevalent in different countries. Firms based in the United States and Western Europe often align strong performance with structured, assertive, and professionally curated messaging, reflecting communication norms that prioritize authority and credibility. This observation is supported by cross-cultural research showing that CEO communications in Western contexts, particularly in the United States, exhibit a significantly higher use of metadiscursive nouns, linguistic elements that enhance cohesion, stance, and rhetorical structure, compared to their East Asian counterpart, China. These patterns are closely linked to the writer-responsible and low-context communication traditions prevalent in Western societies, where the burden of clarity lies with the author, and where explicit, formal language is used to convey leadership and strategic intent (Hu & Lu, 2024). In contrast, companies in some Asian countries, such as China or Japan, may place a greater emphasis on emotional positivity and signaling long-term institutional stability, sometimes irrespective of underlying performance. These findings highlight the importance of contextualizing linguistic indicators within national frameworks when assessing corporate narratives and stakeholder communication strategies.

4.9 Analysis Results

This study investigated the relationship between CEO tone, specifically linguistic markers, such as Emotional Tone, Clout and Authenticity, and both financial, as well as ESG performance across six industry sectors: Technology, Financial Services, Energy, Healthcare, Industrial Manufacturing and Consumer Goods. The results, derived from a LIWC-based textual analysis of CEO letters in annual and ESG reports, reveal several overarching patterns, as well as sector-specific distinctions.

Overall, companies with strong financial performance, as measured by ROA, tended to exhibit higher levels of Emotional Tone, suggesting that financial success is often accompanied by a more optimistic and confident communication style. This pattern was evident in firms, such as Microsoft, ConocoPhillips and Johnson & Johnson, which reported strong financial outcomes paired with highly positive CEO messaging. However, several exceptions highlight the complexity of this relationship. For instance, Siemens demonstrated the highest ROA within the Industrial Manufacturing sector but adopted a markedly cautious tone, with one of the lowest Emotional Tone scores across the sample. Similarly, firms such as Huawei and China Railway Group Limited employed highly positive emotional language despite only moderate or poor financial outcomes. Observations of this kind indicate that CEO tone is shaped by cultural or strategic factors beyond financial results alone.

Clout, representing linguistic indicators of authority and confidence, was consistently high among companies with strong financial or ESG performance. Companies such as SAP, Chevron Corp., J.P. Morgan and Nestlé all demonstrated elevated Clout scores, reinforcing the perception of strong leadership through their communication style. Notably, some companies with only moderate financial outcomes also recorded elevated Clout scores. This suggests that confident communication is not exclusively tied to performance metrics, but that it may also serve as a deliberate rhetorical strategy to project stability and leadership in the eyes of stakeholders.

In contrast, Authenticity scores displayed an inverse pattern in many sectors. High-performing firms frequently showed lower Authenticity, indicating a more curated and polished style of communication, possibly aimed at maintaining control over public messaging. For instance, companies, including Nestlé, SAP and Bioteque Corporation, combined strong financial or ESG standing with low Authenticity scores. Conversely, firms experiencing weaker financial performance, such as Coty Inc., ZF Friedrichshafen AG and CVS Health Corporation, exhibited higher Authenticity scores, which may signal an intentional effort to enhance credibility through more candid or spontaneous communication.

CEO tone further appeared to correlate with ESG performance, particularly in terms of Emotional Tone and Clout. Companies with strong ESG performance, measured through low ESG risk scores, generally adopted confident and optimistic language in their sustainability disclosures. Examples include Microsoft, HP and Apollo Hospitals, all of which displayed high Clout and Emotional Tone in their ESG reports. However, some firms with high ESG risk, including Saudi Aramco, Chevron Corp. and Butterfly Healthcare, also demonstrated elevated levels of positivity and confidence in their language. This suggests that CEO tone in ESG communication is not merely a reflection of sustainability performance, but that it might also function as a strategic tool to counterbalance reputational or regulatory challenges.

Authenticity in ESG disclosures varied widely, with some firms displaying high Tone and low Authenticity, such as Nestlé and CVS Health Corporation, while others, such as L'Oréal, combined strong ESG performance with both high Tone, as well as high Authenticity. This diversity in narrative strategies underscores the multifaceted role of CEO communication in shaping stakeholder perceptions, particularly in relation to sustainability commitments. In several cases, companies with higher ESG risks adopted either excessively optimistic tones or more restrained and transparent approaches, thereby reflecting differing rhetorical strategies shaped by industry expectations, reputational concerns and corporate communication norms.

While certain trends emerged across all sectors, such as the general tendency for stronger performers to adopt more assertive and positive language, the results also reveal sector-specific dynamics. In the Technology sector, firms with strong financial and ESG performance, such as Microsoft and SAP, demonstrated high Emotional Tone and Clout, whereas others like Huawei paired high tone with moderate financials, reflecting cultural influences and strategic optimism. In the Healthcare sector, positive tone prevails regardless of the financial performance and ESG communication strategies vary without a clear pattern. In the Financial Services sector, companies with weaker financial performance often used high Authenticity to reflect transparency during downturns. Regardless of ESG risk, the Energy sector demonstrated widespread use of assertive language, while tone was frequently used as a compensatory mechanism by firms under scrutiny. In the Industrial Manufacturing sector, the alignment between Emotional Tone and financial outcomes was weaker, with Siemens exemplifying a disconnection between strong performance and reserved tone. Finally, in the Consumer Goods sector, high-performing firms, such as Nestlé and Colgate-Palmolive, aligned optimistic tone and Clout with low Authenticity, while lower performers relied more on transparent or emotionally varied messaging to maintain credibility, and Emotional Tone remained positive regardless of ESG score.

In summary, the findings suggest that CEO tone in both annual and ESG reports is influenced by a combination of financial performance, ESG standing, and strategic communication objectives. Emotional Tone and Clout generally serve to reinforce perceptions of confidence and leadership, particularly among high-performing firms. However, Authenticity reveals a more nuanced dimension, often indicating transparency during periods of weaker performance or a deliberate effort to shape reputational narratives. The relationship between tone and performance is thus context-dependent and reflects a complex interplay between organizational outcomes, stakeholder expectations, and sectoral communication norms.

5. Conclusion

This thesis explored the relationship between CEO tone, financial performance and ESG outcomes across six major industry sectors: Technology, Financial Services, Energy, Healthcare, Industrial Manufacturing and Consumer Goods. Through a linguistic analysis of CEO letters using LIWC-22, the study examined how tone, measured through Emotional Tone, Clout and Authenticity, varies according to company performance, sustainability standing, and sectoral context. The objective was to determine whether CEO tone reflects underlying corporate realities or functions as a strategic tool shaped by industry norms, institutional frameworks and reputational considerations.

5.1 Key Findings

The findings reveal that CEO tone is not merely a passive reflection of firm performance, but rather a deliberate and context-dependent communication strategy. Companies with strong financial performance frequently demonstrated high Emotional Tone and Clout, conveying optimism and executive authority. However, these same firms often displayed relatively low Authenticity, suggesting that their communications were carefully curated to project confidence and strategic clarity. Conversely, companies experiencing weaker financial results tended to adopt a more reserved or sincere tone, marked by either lower Emotional Tone or higher Authenticity. These patterns were especially prominent in sectors, such as Consumer Goods and Healthcare, where reputation and stakeholder trust are central to performance outcomes.

Equally significant was the role of ESG performance in shaping tone. Companies with low ESG risk, such as Microsoft, L’Oréal, Apollo Hospitals and HP, consistently exhibited high levels of Emotional Tone and Clout in their ESG disclosures. These firms tended to communicate in a confident, future-oriented manner, reflecting leadership in sustainability and alignment with stakeholder expectations. However, many of these high-performing ESG firms also showed low Authenticity scores, suggesting that sustainability narratives were often tightly managed and strategically framed. In contrast, firms with higher ESG risk, including Chevron, Saudi Aramco and Butterfly Healthcare, frequently employed similarly optimistic tones. This suggests that CEO tone can also function as a reputational buffer, helping to reinforce stakeholder confidence despite weaker ESG positioning. Notably, some high-risk firms, such as Medtronic Ireland Limited, adopted a more restrained tone accompanied by high Authenticity, indicating a possible shift towards transparency and accountability rather than performance-based signaling.

Sectoral differences further reinforced the role of industry context in shaping tone. In the Technology sector, high-performing firms like Microsoft and SAP exemplified the alignment of strong financial and ESG performance with confident, polished communication. In the Financial Services sector, tone was more uniform, with high Clout present across institutions regardless of financial outcomes, suggesting sector-specific communication norms focused on authority and stability. The Energy sector highlighted the strategic use of tone among firms with strong financials and high ESG risk, reflecting efforts to mitigate scrutiny through confident language. The Healthcare sector displayed a generally high Emotional Tone across companies, irrespective of financial results, likely due to the industry's sensitivity to public trust and ethical considerations. In Industrial Manufacturing, the relationship between tone and performance was less consistent Siemens, for instance, demonstrated exceptional financial performance, however, employed a notably low Emotional Tone, pointing to a sector-wide preference for restrained communication. In the Consumer Goods sector, firms like Nestlé and Colgate-Palmolive aligned strong financial and ESG performance with high Emotional Tone and Clout, reinforcing a branding strategy rooted in confident stakeholder engagement.

5.2 Theoretical and Managerial Implications

These findings contribute to the academic discourse in several ways. CEO tone in the CEO letters aligns with Signaling Theory, as firms use emotionally positive or authoritative language to shape stakeholder perceptions, especially in terms of financial uncertainty or ESG risk. Furthermore, Stakeholder Theory is reinforced by the observation that tone varies across sectors in response to reputational pressures and stakeholder expectations, particularly in industries where legitimacy and trust are crucial. While Upper Echelons Theory was not directly tested through CEO characteristics, the variation in tone between companies suggests that leadership discretion and communication style may influence how performance and values are conveyed. Together, these theories provide a lens through which CEO tone can be understood not only as a reflection of corporate reality but also as a strategic tool within the broader context of stakeholder engagement and reputation management.

From a practical standpoint, the results highlights how crucial the CEO’s tone is in financial and ESG communications. Executives should understand that a well-balanced tone can reduce reputational risks and increase stakeholder trust. Excessively positive messaging may be counterproductive in high-stakes situations, when ESG issues are prominent. Stakeholder engagement and corporate credibility may be better supported by a balanced strategy that maintains a balance between optimism and transparency.

5.3 Methodological Limitations and Future Research

While the methodological approach employed in this study offers significant insights, several limitations must be acknowledged to ensure transparency and academic rigor.

First, the use of LIWC-22 for textual analysis, while robust and validated in numerous psychological and linguistic studies, has certain inherent constraints. LIWC operates based on a fixed internal dictionary and predefined word categories, which may not fully capture semantic nuance, context-specific meanings, or sarcastic and ironic language. For example, a statement intended as humorous or metaphorical might be misclassified in terms of tone. Additionally, LIWC does not adapt to industry-specific jargon or evolving corporate language, which could affect the accuracy of tone categorization in technical or sectoral contexts.

Second, the ESG scores sourced from Sustainalytics, though widely recognized and methodologically advanced, are not standardized across rating agencies. ESG evaluations often differ depending on the data provider (e.g., MSCI, Refinitiv, Bloomberg), as they rely on varying definitions of materiality, weightings of factors and use of self-reported data. In particular, the Sustainalytics ratings used in this study are based partly on voluntary corporate disclosures, which may be subject to impression management. As such, while these scores offer valuable proxies for ESG performance, they may not fully reflect objective sustainability outcomes.

Finally, the study is limited to English-language CEO letters published for the fiscal year 2023. While this enhances consistency, it may exclude meaningful tonal variation in companies from non-English-speaking regions or in earlier disclosure cycles. These methodological boundaries should be considered. Moreover, the study is descriptive and does not employ inferential statistical methods to test the significance of observed correlations between tone, as well as manage performance variables.

Future research could address these limitations by adopting a longitudinal approach, examining how CEO tone evolves over multiple reporting cycles in response to shifting regulatory frameworks, such as the European Union’s CSRD, or external shocks like economic crises. Incorporating ESG scores from multiple rating agencies would enhance comparability and methodological rigor. Additionally, future studies might explore the integration of CEO demographic data, such as gender, tenure, or sustainability expertise, to better understand how individual characteristics shape communication tone. The use of machine learning or regression modeling could also strengthen causal inferences between tone and firm performance. Moreover, examining stakeholder reactions, such as investor behavior, analyst commentary or media sentiment, would provide further insight into the real-world impact of tone in corporate disclosures.

In conclusion, this thesis contributes to a growing body of research at the intersection of corporate communication, ESG reporting and executive leadership. It demonstrates that CEO tone is a meaningful and multi-dimensional aspect of stakeholder engagement, shaped by financial outcomes, sustainability performance, sector-specific expectations, and cultural norms. As companies continue to face heightened scrutiny regarding their social and environmental impact, the tone of executive messaging will remain a critical signal of corporate identity, accountability, as well as strategic intent.

Appendix A: ***Results from the CEO Letters of the Annual Reports, based on the LIWC.***

	American Companies	Clout	Authentic	Emotional Tone	ROA	Sector
1	Goldman Sachs	93.47	51.01	65.96	0,27%	Financial Services
2	J.P. Morgan	97.79	40.52	59.78	1,2%	Financial Services
3	The Clorox Company	99	30.65	85.12	2.70%	Consumer Goods
4	CVS Health Corporation	98.1	40.91	93.5	3,30%	Healthcare
5	Coty Inc.	50.07	56.65	30.74	4.20%	Consumer Goods
6	Patrick Industries	99	32.43	89.86	5.50%	Manufacturing
7	Abbott Laboratories	91.59	29.52	89.53	7,80%	Healthcare
8	Chevron	90.3	42.65	74.8	8.20%	Energy
9	HP	99	48.74	84.25	8.80%	Manufacturing
10	ConocoPhillips	98.33	54.9	83.36	11.40%	Energy
11	Colgate-Palmolive	98.12	35.73	75.27	14.90%	Consumer Goods
12	Microsoft	96.32	33.31	75.68	17.50%	Technology
13	Johnson & Johnson	98.81	28.19	94.35	20,90%	Healthcare
	European companies					
1	ZF Friedrichshafen AG	76.81	52.63	86.35	0.32%	Manufacturing
2	HSBC	89.86	55.62	77.65	0,86%	Financial Services
3	RWE AG	88.87	45.33	63.78	1.50%	Energy
4	UBS	95.76	35.64	62.53	1,6%	Financial Services
5	Software One	78.19	35.56	72.36	1.60%	Technology
6	Volkswagen Group	98.28	40.45	62.36	2.30%	Manufacturing
7	Heineken N.V.	97.67	39.13	75.1	4.17%	Consumer Goods
8	Shell	94.05	40.77	50.64	4.80%	Energy
9	Medtronic Ireland Limited	98.61	46.57	78.36	5,48%	Healthcare
10	SIX	83.44	34.17	61.87	7,1%	Financial Services
11	ABB	99	22.06	83.7	7.59%	Technology
12	SAP	85.1	61.09	90.06	8.70%	Technology
13	Unilever Global	84.39	48.36	80.52	9.40%	Consumer Goods
14	Novartis AG	97.42	36.55	81.77	14,80%	Healthcare
15	Siemens	59.77	32.86	32.47	25%	Manufacturing
16	Nestle	99	26.11	92.32	37.20%	Consumer Goods
	Asian companies					

1	Bank of China	91.45	24.03	83.21	0,77%	Financial Services
2	Tepco	89.74	29.08	41.89	0.90%	Energy
3	China Railway Group Limited	80.96	32.85	97.82	2.05%	Manufacturing
4	Huawei	88.77	34.75	94.85	6.80%	Technology
5	Apollo Hospitals	91.81	20.39	90.72	8,15%	Healthcare
6	Saudi Aramco	96.63	32.56	64.29	18.40%	Energy

Appendix B: ***Results from the CEO Letters in ESG Reports, based on the LIWC.***

	American Companies	**Clout**	**Authentic**	**Emotional Tone**	**ESG Ranking**	**Sector**
1	HP	97.36	64.12	90.37	10.6	Manufacturing
2	Palo Alto Networks	98.11	36.92	77.22	12.9	Technology
3	Microsoft	95.63	39.59	75.18	14.2	Technology
4	CVS Health Corporation	99	13.39	90.11	15.3	Healthcare
5	Johnson & Johnson	99	32.31	55.77	20.1	Healthcare
6	Colgate-Palmolive	97.15	16.64	73.43	24.01	Consumer Goods
7	Amazon	99	52.19	50.53	26.1	Technology
8	J.P. Morgan	99	37.8	90.64	27.3	Financial Services
9	Patrick Industries	99	33.15	99	30.8	Manufacturing
10	Goldman Sachs	98.95	32.16	64.35	32.1	Financial Services
11	Butterfly Healthcare	98.66	19.6	99	32.5	Healthcare
12	ConocoPhillips	96.44	37.58	68.75	33.1	Energy
13	Chevron	99	37.15	93.68	38.4	Energy
	European companies					
1	Mercedes-Benz	97.79	22	86.68	15.7	Manufacturing
2	Banco de Santandor	98.7	28.72	82.76	17.1	Financial Services
3	SIX	99	34.53	62.01	18.8	Financial Services
4	Software One	99	30.09	84	19.4	Technology
5	L'Oreal S.A.	95.23	68.69	97.95	19.6	Consumer Goods
6	Kontron	92.85	44.5	89.93	21.2	Technology
7	Medtronic Ireland Limited	94.75	63.05	32.1	22.2	Healthcare
8	Nestle	99	9.29	91.46	22.7	Consumer Goods
9	Siemens	96.88	30.94	55.47	25.8	Manufacturing
10	Volkswagen Group	91.19	27.17	68.51	26.8	Manufacturing
11	UBS	90.29	48.32	61.4	26.8	Financial Services
12	OMV	89.92	21.53	68.18	29.4	Energy
13	Shell	97.04	20.44	87.23	38.1	Energy

	Asian companies					
1	Bioteque Corporation	84.84	18.32	87.63	15.5	Healthcare
2	Apollo Hospitals	95.94	58.59	92.51	25	Healthcare
3	Kose Corporation	87.72	43.26	80.17	30	Consumer Goods
4	Bank of India	47.29	1.57	45.81	36	Financial Services
5	Saudi Aramco	88.52	19.71	72.23	47	Energy
6	China Railway Group Limited	61.48	6.74	64.7	59.7	Manufacturing

References

Aerts, W., & Yan, B. (2017). Rhetorical impression management in the letter to shareholders and institutional setting: A metadiscourse perspective. Accounting, Auditing & Accountability Journal, 30(2), 404–432. https://doi.org/10.1108/AAAJ-01-2015-1916

Aerts, W., Cormier, D., & Magnan, M. (2008). Corporate environmental disclosure, financial markets and the media: an international perspective. Ecological Economics, 64(3), 643–659. https://doi.org/10.1016/j.ecolecon.2007.04.012

Alshorman, S. A. A., & Shanahan, M. (2022). The voice of profit: Exploring the tone of Australian CEO's letters to shareholders after the global financial crisis. Corporate Communications: An International Journal, 27(1), 127–147. https://doi.org/10.1108/CCIJ-12-2020-0169

Aly, D., El-Halaby, S., & Hussainey, K. (2018). Tone disclosure and financial performance: Evidence from Egypt. Accounting Research Journal, 31(1), 63–74. https://doi.org/10.1108/ARJ-09-2016-0123

Amernic, J., Craig, R., & Tourish, D. (2010). Measuring and Assessing Tone at the Top Using Annual Report CEO Letters.

Ayuningtyas, E. S., & Harymawan, I. (2021). Negative Tone and Readability in Management Discussion and Analysis Reports: Impact on The Cost of Debt. Jurnal Manajemen Teori Dan Terapan| Journal of Theory and Applied Management, 14(2), 129. https://doi.org/10.20473/jmtt.v14i2.26681

Aziz, N. H. A., & Alshdaifat, S.M. (2024). ESG Reporting: Impacts, Benefits and Challenges. Contributions to Environmental Sciences & Innovative Business Technology 69-76. Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-97-2981-4_5

Bassyouny, H., & Abdelfattah, T. (2022). Executives vs. governance: Who has the predictive power? Evidence from narrative tone. Review of Quantitative Finance and Accounting, 58(1), 361–382. https://doi.org/10.1007/s11156-021-00997-y

Bassyouny, H., Abdelfattah, T., & Tao, L. (2020). Beyond narrative disclosure tone: The upper echelons theory perspective. International Review of Financial Analysis, 70, 101499. https://doi.org/10.1016/j.irfa.2020.101499

Beck, C., Dumay, J., & Frost, G. (2017). In pursuit of a 'Single Source of Truth': from threatened legitimacy to integrated reporting. J Bus Ethics 141(1):191–205

Boudt, K., & Thewissen, J. (2019). Jockeying for Position in CEO Letters: Impression Management and Sentiment Analytics. *Financial Management*, *48*(1), 77–115. https://doi.org/10.1111/fima.12219

Bournois, F., & Point, S. (2006). A letter from the president: Seduction, charm and obfuscation in French CEO letters. *Journal of Business Strategy*, *27*(6), 46–55. https://doi.org/10.1108/02756660610710355

Boyd, R. L., Ashokkumar, A., Seraj, S., & Pennebaker, J. W. (2022). The development and psychometric properties of LIWC-22. Austin, TX: University of Texas at Austin. https://www.liwc.app

Brennan, N. M., & Merkl-Davies, D. M. (2013). Accounting narratives and impression management. In The Routledge Companion to Accounting Communication. Routledge. https://doi.org/10.4324/9780203593493.ch8

Brüske, L.-E., Ratzinger-Sakel, N. V. S., & Habermann, F. (2024). The Abnormal Tone of CEO Letters in ESG Reports: What Does it Tell us about Future ESG and Financial Performance? SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4744534

Cho, C. H., Roberts, R. W., & Patten, D. M. (2010). The language of US corporate environmental disclosure. Accounting, Organizations and Society, 35(4), 431–443. https://doi.org/10.1016/j.aos.2009.10.002

Craig, R. J., & Brennan, N. M. (2012). An exploration of the relationship between language choice in CEO letters to shareholders and corporate reputation. Accounting Forum, 36(3), 166–177. https://doi.org/10.1016/j.accfor.2012.02.004

Cucari N., Esposito De Falco S., & Orlando B. (2018). Diversity of board of directors and environmental social governance: evidence from Italian listed companies. Corp Soc Responsib Environ Manage 25(3):250–266

Cui, M., Chin, C., & Liu, P. (2024). Mind the Gap: Optimism Expressed in the Summary and Full Content of Annual Reports. Elsevier BV. https://doi.org/10.2139/ssrn.5074902

Custódio, C., & Metzger, D. (2014). Financial expert CEOs: CEO׳s work experience and firm׳s financial policies. *Journal of Financial Economics*, *114*(1), 125–154. https://doi.org/10.1016/j.jfineco.2014.06.002

Dyreng, S. D., Hanlon, M., & Maydew, E. L. (2010). The effects of executives on corporate tax avoidance. The accounting Review, 85(4), 1163–1189. https://doi.org/10.2308/accr.2010.85.4.1163

Eccles, R. G., Ioannis, I. & Serafeim, G. (2014). The Impact of Corporate Sustainability on Organizational Processes and Performance. Management Science, 60(11), 2835-2857, February 2014. http://dx.doi.org/10.2139/ssrn.1964011

Faccio, M., Marchica, M.-T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. Journal of Corporate Finance.

Francis, M.E., Pennebaker, J.W., (1992). Putting stress into words: the impact of writing on physiological, absentee, and self-reported emotional well-being measures. Am. J. Health Promot. 6 (4), 280–287. https://doi.org/10.4278/0890-1171-6.4.280.

Freeman, R.E. (1984) Strategic Management: A Stakeholder Approach. Pitman, Boston.
Future performance implications under different contingencies. Journal of Business

Gao, Y., & Feng, J. (2024). Annual report text's positive tone and corporate green innovation: Evidence from China. PLOS ONE, 19(7), e0306184. https://doi.org/10.1371/journal.pone.0306184

Gounopoulos, D., & Pham, H. (2018). Financial Expert CEOs and Earnings Management around Initial Public Offerings. The International Journal of accounting, 53(2), 102-117. https://doi.org/10.1016/j.intacc.2018.04.002

Guan, W., & Liu, B. (2022). Annual Report Tone, Internal Controls and the Risk of Share Price Collapse - Empirical evidence from A-share listed companies in China. Journal of Sociology and Ethnology, 4(3). DOI: 10.23977/jsoce.2022.040306

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. Academy of Management Review, 9(2), 193-206.

Hargrave, M. (2025, May 18). Return on Assets (ROA) ratio and profitability. Investopedia. https://www.investopedia.com/terms/r/returnonassets.asp

Hassan, M. K., Abu-Abbas, B., & Kamel, H. (2022). Tone, readability and financial risk: The case of GCC banks. Journal of Accounting in Emerging Economies, 12(4), 716–740. https://doi.org/10.1108/JAEE-06-2021-0192

Ho, S. S. M., Li, a. Y., Tam, K., & Zhang, F. (2015). CEO Gender, Ethical Leadership, and accounting Conservatism. *Journal of Business Ethics*, *127*(2), 351–370. https://doi.org/10.1007/s10551-013-2044-0

Hoang, T. (2018). The role of the integrated reporting in raising awareness of environmental, social and corporate governance (ESG) performance. In: Developments in corporate governance and responsibility, 24, 47–69.

Hu, C., Zhao, Z., & Lu, C. (2024). Metadiscursive nouns in corporate communication: A cross-cultural study of CEO letters in the US and Chinese corporate social responsibility reports. English for Specific Purposes, 76, 28–40. https://doi.org/10.1016/j.esp.2024.06.001

Ioannou, I., & Serafeim, G. (2015). The impact of corporate social responsibility on investment recommendations: Analysts' perceptions and shifting institutional logics: CSR and Investment Recommendations. Strategic Management Journal, 36(7), 1053–1081. https://doi.org/10.1002/smj.2268

Inchausti, G. (1997), "The influence of company characteristics and accounting regulation on information disclosed by Spanish firms", The Eur. Account. Rev, Vol. 6 No. 1, pp. 45-68.

Ismail, K. & Chandler, R. (2005), "Disclosure in the quarterly reports of Malaysian companies", Financial Reporting, Regulation and Governance, Vol. 4 No. 1, pp. 1-26.

Jian, J., Yang, F., Liu, M., & Liu, Y. (2024). Cost of Equity Capital and Annual Report Tone Manipulation. Emerging Markets Finance and Trade, 60(3), 519–540. https://doi.org/10.1080/1540496X.2023.2226320

Kahneman, D., D. Fredrickson, C. Schreiber, & D. Redelmeier. (1993). When More Pain Is Preferred to Less: Adding a Better End. Psychological Science 4, 401–405.

Kahveci, E. (2016). The tone of annual reports as a strategic performance management tool:application on Turkey's Borsa Istanbul corporate governance index firms. *Pressacademia*, *3*(3), 209–209. https://doi.org/10.17261/Pressacademia.2016321989

Kim, Y., Park, M.S., & Wier, B. (2012), "Is earnings quality associated with corporate social responsibility?", The Accounting Review, Vol. 87 No. 3, pp. 761-796

La Torre, M., Sabelfeld, S., Blomkvist, M., & Dumay, J. (2020). Rebuilding trust: sustainability and nonfinancial reporting and the European Union regulation. Meditari Accountancy Res 28(5):701– 725

Liu, C., Wang, F., & Xue, W. (2023). The annual report tone and return Comovement - Evidence from China's stock market. *International Review of Financial Analysis*, *88*, 102610. https://doi.org/10.1016/j.irfa.2023.102610

Liu, P., & Nguyen, H. T. (2020). CEO characteristics and tone at the top inconsistency. Journal of Economics and Business, 108, 105887. https://doi.org/10.1016/j.jeconbus.2019.105887

LIWC - LIWC analysis. (n.d.). https://www.liwc.app/help/liwc

Loughran, T. & McDonald, B. (2011). When Is a Liability Not a Liability? Textual Analysis, Dictionaries, and 10-Ks. The Journal of Finance, 66(1), 35-65. https://doi.org/10.1111/j.1540-6261.2010.01625.x

Lu, Y., Cahan, S., & Ma, D. (2019). Is CSR performance related to disclosure tone in earnings announcements? Accounting Research Journal, 32(2), 129–147. https://doi.org/10.1108/ARJ-05-2016-0059

Mahoney, L. S., Thorne, L., Cecil, L., & LaGore, W. (2013). A research note on standalone corporate social responsibility reports: Signaling or greenwashing? Critical Perspectives on Accounting, 24(4–5), 350–359. https://doi.org/10.1016/j.cpa.2012.09.008

Martiny, A., Taglialatela, J., Testa, F., & Iraldo, F. (2024). Determinants of environmental social and governance (ESG) performance: a systematic literature review. *Journal of Cleaner Production*, *456*, 142213. https://doi.org/10.1016/j.jclepro.2024.142213

McClelland, P. L., Barker, V. L., III, & Oh, W. Y. (2012). CEO career horizon and tenure:

Merkl-Davies, D. M., & Brennan, N. M. (2007). Discretionary Disclosure Strategies in Corporate Narratives: Incremental Information or Impression Management?. https://ssrn.com/abstract=1089447

Mlawu, L., Matenda, F. R., & Sibanda, M. (2023). Linking Financial Performance with CEO Statements: Testing Impression Management Theory. Risks, 11(3), 55. https://doi.org/10.3390/risks11030055

Na, H. J., Lee, K. C., Choi, S. U., & Kim, S. T. (2020). Exploring CEO Messages in Sustainability Management Reports: applying Sentiment Mining and Sustainability Balanced Scorecard Methods. *Sustainability*, *12*(2), 590. https://doi.org/10.3390/su12020590

Omnibus package - European Commission. (2025). Retrieved May 1, 2025, from https://finance.ec.europa.eu/news/omnibus-package-2025-04-01_en
Patelli, L., & Pedrini, M. (2014). Is the Optimism in CEO's Letters to Shareholders Sincere? Impression Management Versus Communicative Action During the Economic Crisis. Journal of Business Ethics, 124(1), 19–34. https://doi.org/10.1007/s10551-013-1855-3
Phesa, M., & Sibanda, M. (2023). Impression Management in Voluntary Narrative Disclosure through Length and Tone, Stakeholder Theory Lens. *Journal of Accounting and Finance in Emerging Economies*, *9*(3), 383–394. https://doi.org/10.26710/jafee.v9i3.2811
Qin, Z., & Cui, M. (2024). Annual report tone and divergence of opinion: Evidence from textual analysis. Journal of Applied Economics, 27(1), 2354641. https://doi.org/10.1080/15140326.2024.2354641
Rahman, S. (2019). Discretionary tone, annual earnings and market returns: Evidence from UK Interim Management Statements. *International Review of Financial Analysis*, *65*, 101384. https://doi.org/10.1016/j.irfa.2019.101384
Research, 65(9), 1387–1393. https://doi.org/10.1016/j.jbusres.2011.09.003.
Reverte, C. (2009). Determinants of Corporate Social Responsibility Disclosure Ratings by Spanish Listed Firms. Journal of Business Ethics, 88(2), 351–366. https://doi.org/10.1007/s10551-008-9968-9
Ross, S. (1977). The Determination of Financial Structure: The Incentive-Signaling Approach.
Serfling, M. A. (2014). CEO age and the riskiness of corporate policies. Journal of Corporate Finance, 25, 251–273. https://doi.org/10.1016/j.jcorpfin.2013.12.013
Smith, M., & Taffler, R. J. (2000). The chairman's statement - a content analysis of discretionary narrative disclosures. *Accounting, Auditing & Accountability Journal*, *13*(5), 624–647. https://doi.org/10.1108/09513570010353738
Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, *87*(3), 355. https://doi.org/10.2307/1882010
Sun, Y., Zhao, D., & Cao, Y. (2024). The impact of ESG performance, reporting framework, and reporting assurance on the tone of ESG disclosures: Evidence from Chinese listed firms. Journal of Cleaner Production, 466, 142698. https://doi.org/10.1016/j.jclepro.2024.142698
Tetlock, P. C., Saar- Tsechansky, M., & Macskassy, S. (2008). More Than Words: Quantifying Language to Measure Firms' Fundamentals. The Journal of Finance, 63(3), 1437–1467. https://doi.org/10.1111/j.1540-6261.2008.01362.x
Von Münchhausen, S., Volk, C., Pop O., Vosburg, K., Barr, C., & Dr. Garz, H. (2024). Methodology Abstract ESG Risk Ratings. https://www.sustainalytics.com/docs/knowledgehublibraries/default-document-library/sustainalytics_-esg-risk-ratings_-version-3-1_-methodology-abstract_-june-2024.pdf?sfvrsn=567c06bc_1&
Waldman, D. A., & Siegel, D. (2008). Defining the socially responsible leader. The Leadership Quarterly, 19(1), 117–131. https://doi.org/10.1016/j.leaqua.2007.12.008
Wisniewski, T. P., & Yekini, L. S. (2015). Stock market returns and the content of annual report narratives. Accounting Forum, 39(4), 281–294. https://doi.org/10.1016/j.accfor.2015.09.001
Yang, F., Huang, J., & Cai, Y. (2022). Tone of Textual Information in Annual Reports and Regulatory Inquiry Letters: Data from China. Emerging Markets Finance and Trade, 58(2), 417–427. https://doi.org/10.1080/1540496X.2021.1903870
Yim, S. (2013). The acquisitiveness of youth: CEO age and acquisition behavior. Journal of Financial Economics, 108(1), 250–273. https://doi.org/10.1016/j.jfineco.2012.11.003
Yuthas, K., Rogers, R., & Dillard, J. F. (2002). Communicative action and Corporate annual Reports.

Wisniewski, T.P., & Yekini, L.S. (2015). Stock market returns and the content of annual report narratives. Accounting Forum, 39(4), 281-294. https://dor.org/10.1016/j.accfor.2015.09.001