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# CEO Communications and ESG Performance: Deciphering the Impact of Corporate Narratives

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## Abstract

In the realm of corporate economics, this study explores the influence of CEO communications within Corporate Social Responsibility (CSR) reports on a firm's Environmental, Social, and Governance (ESG) performance. It specifically examines the content, tone, and strategies of CEO messages in CSR reports of companies with top ESG scores from S&P Global Indices. The research aims to study the correlation between the linguistic characteristics of the CEO communications and the company's ESG performance. By analyzing key themes and content strategies in CEO communications, the study assesses their effectiveness in enhancing ESG practices within organizations. Our methodology includes analyzing qualitative aspects of CEO communications in CSR reports, and correlating them to the ESG performance. The findings indicate a significant connection between the qualitative aspects of CEO letters and ESG performance. CEOs emphasizing wellness, environmental impact, and business responsibility are perceived more favorably, suggesting a need for more readable and less polarized CEO communications to engage stakeholders and investors effectively. The study contributes both theoretically and managerially, offering insights into the impact of CEO communication on corporate sustainability and providing guidance for advancing a company's commitment to sustainable economic growth and ethical business practices.

**Keywords:** CSR reports, ESG performance, CEO communication, stakeholders.

*JEL codes:* M14, Q01, G30, D22, D91, C10

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## 1. Introduction and motivation

In 2015 the United Nations outlined 17 global objectives, known as the Sustainable Development Goals (SDGs) under its 2030 Agenda for Sustainable Development. These goals ambitiously aim to eradicate poverty, ensure environmental protection, and promote global peace and prosperity by 2030 (Berrone *et al.*, 2023; Kumar & Baag, 2022). Integral to achieving these objectives is the role of corporations, necessitating the integration of sustainable practices into their business strategies and having significant economic implications. Corporate Social Responsibility (CSR) initiatives are instrumental in this endeavor, as they notably influence the dynamics

between firms and their stakeholders – encompassing customers, employees, suppliers, shareholders, and the community at large (Berrone *et al.*, 2023; Niyommaneerat *et al.*, 2023). These initiatives not only drive social and environmental progress but also have the potential to foster economic growth and stability by aligning corporate strategies with global sustainability goals.

From an economic standpoint, the integration of ESG criteria in corporate economics is not just a moral imperative but a strategic necessity. It reflects an understanding that sustainable economic performance is intrinsically linked to environmental stewardship, social responsibility, and sound governance. As these factors increasingly influence investment decisions and consumer preferences, their integration into corporate strategy becomes essential for economic resilience and long-term value creation (Barkemeyer *et al.*, 2023; Du & Yu, 2021).

Mak *et al.* (2023) emphasize that the deployment of CSR initiatives profoundly affects the stakeholder relationships. CSR activities not only manage these interactions effectively but also contribute to shaping a company's identity and reputation in society. A commitment to CSR also enhances a firm's ability to attract and retain customers, thereby becoming an indispensable part of modern business practices and corporate communication. Research indicates that CSR expenditure is a significant factor in stakeholder management and in bolstering a company's relationship with the community and regulators, potentially averting legal and reputational challenges (Grover *et al.*, 2019; Khaled *et al.*, 2021). Stakeholders are increasingly gravitating towards firms with strong CSR credentials. The surge in sustainable investments and the growing consumer interest in the products and services of socially responsible companies underscore the support for sustainability-focused transformations (Shamma, 2022; Sharma, 2022; Zumente and Lāce, 2021). This trend has, in turn, encouraged companies to enhance their CSR outputs, recognizing the substantial returns from such engagements.

CEO communications about Corporate Social Responsibility (CSR) play a pivotal role in the continuity and effectiveness of CSR practices (Joel H. Amernic *et al.*, 2010). These communications act as a powerful medium to reinforce the company's dedication to CSR. In corporate economics, CEO communication is crucial for shaping investor confidence and market perception, directly influencing stock valuations and capital access (Barkemeyer *et al.*, 2014). It also ensures operational efficiency by clearly conveying strategic goals, leading to improved economic outcomes. Effective communication is essential in risk management, particularly during crises, where it can mitigate reputational damage and financial losses (Aabo & Giorici, 2022). Consistent messaging from CEOs about their commitment to CSR sends a clear signal to employees, stakeholders, and the broader public that the organization's CSR practices is deeply embedded in its core values. This continuous reinforcement motivates

employees and stakeholders to remain actively involved in CSR initiatives over the long term. Furthermore, CEO communications about CSR are critical in establishing trust and credibility with stakeholders (R. Craig & Amernic, 2011; Furukawa, 2021). By transparently communicating the company's CSR initiatives, progress, and challenges, CEOs demonstrate an adherence to accountability and ethical practices in the market. This openness fosters trust among stakeholders, including customers, investors, and communities, who perceive the company as a responsible and dependable partner. Trust and credibility are vital for the enduring success of CSR practices and in maintaining positive relationships with stakeholders, impacting market position and long-term economic sustainability (Furukawa, 2021).

The economic implications of CSR practices and their articulation by CEOs are significant. Meticulous implementation of CSR strategies, particularly when effectively communicated by corporate leadership, has a direct impact on a firm's economic health and market standing (Bhaskar *et al.*, 2023; Niyommaneerat *et al.*, 2023). In a market where investors and consumers are increasingly drawn to companies with strong Environmental, Social, and Governance (ESG) credentials, proficient CEO communication about CSR can have a tangible influence on investment patterns and consumer behaviors (Certo, 2003; Deng & Xu, 2017; Ermakova *et al.*, 2022). This scenario creates a beneficial cycle, where companies with high ESG scores, indicative of robust CSR practices, can attract premium investments, command larger market shares, and even secure more favorable loan terms, as their responsible practices are seen as mitigating risks. Economically, this suggests that CSR initiatives, when combined with adept communication, can serve as a market differentiator, enhancing a company's brand value as well as its financial robustness and long-term profitability (George *et al.*, 2023; Gillan *et al.*, 2021; Jahmane & Gaies, 2020). As sustainable investments continue to grow, firms that transparently and effectively communicate their CSR agendas are better positioned to leverage this trend, using CSR as both a moral obligation and a strategic economic advantage.

Previous research on CEO communication has primarily concentrated on their direct influence on financial performance (Aabo & Giorici, 2022; George *et al.*, 2023; Gillan *et al.*, 2021). However, CSR represents a more direct measure of a CEO's influence, less susceptible to external factors beyond their control, such as the varying impacts of the COVID-19 pandemic on different industries (Rajandran & Taib, 2014a). CSR is directly shaped by CEO actions, making it a more accurate gauge of their impact. Effective communication by CEOs is essential for articulating their commitment to CSR, engaging stakeholders, and aligning organizational values with societal expectations. Previous studies that have overlooked CEO communication may have missed a critical aspect of understanding the CEO effect on CSR performance (Aabo & Giorici, 2022).

In our study, we focus on CEO messages in CSR reports. CSR reports, issued by companies across various industries, serve as a vehicle for communicating their CSR initiatives and performance to a broad spectrum of stakeholders, including the general public. These reports are a means for companies to display their dedication to social and environmental responsibility, highlighting the impact of their CSR initiatives. By disclosing their CSR performance and initiatives, companies affirm their commitment to responsible business practices, building trust with stakeholders (Du & Yu, 2021; Grover *et al.*, 2019). These reports are also crucial for assessing a business's Environmental, Social, and Governance (ESG) risks, identifying opportunities for sustainability performance improvements, and for benchmarking against industry peers. The evolution of sustainability performance measurement, now integrated alongside financial metrics, is publicly disclosed through CSR or sustainability reports, allowing businesses to communicate their progress in sustainability to stakeholders. Additionally, companies employ various offline and online communication channels to underscore their sustainability initiatives and achievements. This heightened visibility also subjects them to evaluations by CSR and ESG rating agencies (Shanaev and Ghimire, 2021).

CEO statements in corporate reports have been recognized as significant for their intended audience, with CSR reports becoming increasingly central in evaluating corporate reputation and financial performance (R. J. Craig & Brennan, 2012; Nistala, n.d.). However, CEO messages in CSR reports have received limited scholarly attention and warrant further exploration (J. Amernic *et al.*, 2010; Arvidsson, 2022a; Conaway & Wardrope, 2010). Our research aims to investigate the effectiveness of CEO messages in enhancing the ESG performance of companies. It seeks to understand the impact and influence of CEO communication on sustainable practices, social responsibility, and governance within organizations. By examining the content, tone, and framing of CEO messages related to ESG initiatives, as well as the strategies employed by CEOs to promote sustainable practices and improve sustainability performance, this study will offer insights into how CEO messages contribute to enhancing ESG performance. The findings will illuminate the role and effectiveness of CEO communication in fostering sustainable and responsible business practices.

This leads us to our research questions:

RQ1: What are the key themes and content strategies employed by CEOs in their messages related to ESG initiatives?

RQ2: To what extent do linguistic characters of CEO messages in CSR reports correlate with a company's ESG performance?

For this study, we use S&P global indices as they are widely used benchmarks for measuring the performance of various financial markets and investment strategies<sup>1</sup>. We prefer this index over others as it's a well-regarded ESG rating system which offers transparent methodologies, industry-specific weightings, and a focus on material ESG issues. We use only companies that have top ESG scores from S&P global to get an idea of how effectively the CEOs of these companies are able to communicate regarding their CSR practices. We examine correlation between linguistic characters like themes, emotions, tone and readability and ESG performance. The above approach intersects with behavioral economics. The study serves as a pioneering exploration in the field of behavioral economics to examine if qualitative elements like themes, emotions, tone, and readability in CEO letters effectively correlate with ESG performance metrics. This investigation extends beyond traditional economic analysis, delving into how the narrative nuances in corporate communications align with the measurable outcomes of a company's ESG commitments. Following the approach of prior scholars (Aabo & Giorici, 2022; Vadithala & Tadoori, 2021), we consider the terms CSR and ESG to be synonymous and interchangeable in our study.

This study offers both theoretical and managerial contributions. Theoretically, it is the first paper to correlate the qualitative aspects expressed in CEO's letter with the ESG performances. In this research, we not only add to the existing knowledge on CEO letters and CSR literature but also make a significant contribution to the field of behavioral economics. From a managerial perspective, it helps the stakeholders to better assess the company's ethical performances. The study's findings highlight CEO letters have a substantial connection with communication of ESG performance, with CEOs who emphasize well-being, environmental impact, business responsibility being regarded more favorably. The study also suggests that the CEO letters can be written in a more readable and less polarized way to gather the attention of stakeholders and investors which in turn improve ESG performance. Integrating comprehensive sustainability strategies into business operations has diverse impacts, affecting both short-term costs and long-term financial and ESG performance. Despite initial investments, these strategies offer economic benefits such as increased competitiveness, cost savings, and risk mitigation. Effective communication, especially from top leadership, influences investor and consumer perceptions, impacting market valuations and investment flows. Enhanced business responsibility, transparency, and ESG scores attract a broader investor base and better financing terms, while a lack thereof can increase capital costs and deter investment. Tailoring sustainability reporting and communication is essential for maximizing stakeholder value and market positioning.

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<sup>1</sup><https://www.spglobal.com/en/capabilities/ratings-benchmarks>

## 2. Background and Literature

In recent years, corporate social responsibility (CSR) has become a major focus for many companies. Researchers have examined how CSR activities can be used to improve firm performance and engage stakeholders in sustainability efforts (Du & Yu, 2021; Al-Shaer *et al.*, 2023; Balqiah *et al.*, 2023; Koh *et al.*, 2023). Communication plays an important role in this process, and CEO letters in CSR reports can provide a platform for communicating sustainability strategy, goals, and achievements, promoting corporate sustainability culture, engaging stakeholders, and improving environmental and social responsibility (Bhaskar *et al.*, 2023; Shin & You, 2020).

In discussions about corporate communication, the letter from the Chief Executive Officer is widely recognized as a highly scrutinized element, particularly within annual reports as noted by Hyland (1998) and as highlighted in the research by Fuoli and Paradis in 2014. These communications are discretionary and are not confined by strict guidelines, as stated by Amernic and Craig (2006), allowing CEOs to freely express their narratives and emphasize selected issues, aiming their message at particular audiences. Chief Executives typically address their organization's accomplishments, objectives, and strategic outlook (Segars and Kohut, 2001), providing insights into their leadership style and communicative approach (Amernic and Craig, 2006).

These letters are crafted with intentionality (Hyland, 1998), and are often strategized to cultivate a positive perception among stakeholders (Boudt and Thewissen, 2019), bolster legitimacy, enhance reputation, or build trust (de-Miguel-Molina *et al.*, 2019). They can also serve purposes that may not align with actual corporate practices, such as presenting a façade of environmental responsibility, termed 'green washing' (Hamza and Jarboui, 2022), or projecting a moral image, known as 'moral-washing' (Alvesson and Einola, 2019). Despite their subjective nature, these letters must maintain a degree of objectivity and accountability as they are public documents, providing an unparalleled window into the thought processes of corporate leaders, a perspective that is challenging to capture through other mediums (Yadav *et al.*, 2007). In essence, CEO letters transcend a simple foreword, embodying a critical instrument of communication that leaders of major firms widely employ to articulate their vision, guide their organization, and endeavor to achieve outstanding performance.

Previous studies as shown in Table 1 have analyzed CEO letters in CSR reports to gain a deeper understanding of how firms show their commitment to social responsibility, measure their performances and communicate using CEO letters (Q. Liu *et al.*, 2022; Moreno *et al.*, 2019).

Author(s) & Year	Research Topic	Methodology	Key Findings	Implications and Insights
Rajandran & Taib, (2014b)	CSR portrayal in CEO communications.	Critical Discourse Analysis	CEOs use rhetorical devices to portray their firms as catalysts for societal betterment through CSR.	Unveils the strategic use of language to shape CSR narratives.
(Rajandran & Taib, (2014a)	CEO rhetorical strategies in CSR communication.	Critical Discourse Analysis	Emphasis on evaluative language and temporal representation of CSR achievements.	Highlights the strategic use of temporality in corporate communication.
Ngai & Singh (2014)	Thematic analysis of CEO letters from Chinese companies.	Content Analysis	Identified themes include environmental sustainability, corporate growth, and financial performance.	Offers insight into corporate priorities and values in China.
Fehre& Weber (2016)	CEO commitment to CSR during the global financial crisis.	Quantitative & Qualitative	Investigated whether CEOs continue to discuss CSR issues during the financial crisis period.	Challenges the consistency of CSR commitment during economic downturns.
Che et al. (2020)	Financial forecasting from CEO letters through sentiment analysis.	Sentiment Analysis	Sentiment in CEO letters can be indicative of future financial performance.	Supports the predictive value of sentiment analysis for financial insights.
Liu & Liu (2023)	Comparative stance in CSR reporting between Chinese and US CEOs.	Comparative Analysis	Distinct stance constructions in CSR reports suggest cultural framing of corporate responsibility.	Cultural nuances in CSR communication may affect stakeholder perception.

Table 1. CEO letters in Corporate Discourse Literature

These studies suggest that CEO letters provide important information on a company's values and strategic priorities.

There's a rising call for companies to give precedence to Corporate Social Responsibility (CSR), typically evaluated through ESG (Environmental, Social, and Governance) scores (Aabo & Giorici, 2022; Du & Yu, 2021). Numerous studies emphasize the significance of a company's sustainability practices, gauged through ESG scores, in assessing its sustainability performance (Nofsinger & Varma, 2022). Table 1 illustrates that many studies link specific linguistic features of CEO CSR letters to company performance, however there's a gap in considering all qualitative aspects collectively.

Moreover, there's been a tendency to prioritize financial performance over CSR performance. However, CSR metrics offer a more direct and immediate assessment of a CEO's influence, and they're less susceptible to external factors beyond their control compared to financial indicators (Gillan *et al.*, 2021). While there have been efforts to link themes in CEO CSR letters to CSR performance, these analyses are often done manually, introducing the potential for bias from the authors (Arvidsson, 2023). There is a call for quantitative examination of the correlation between the content, linguistic aspects of CEO letters (such as sentiment, readability, and emotional aspects) and a company's ESG performance (Arvidsson, 2023; Crace & Gehman, 2023). However, according to our knowledge, no previous research has quantitatively examined the correlation between the content and linguistic aspects of CEO letters, including sentiment, readability, emotional aspects, and a company's ESG performance.

Therefore, our study aims to contribute to the literature on both CEO letters and ESG scores by providing a more comprehensive and in-depth analysis of the language used in CEO letters. We will examine the sentiments, emotions, and readability of CEO letters in CSR reports and analyze their relationship with ESG scores. Additionally, we also generate themes through topic modeling and correlate them with sustainability performance to find the importance level of the themes unlike previous studies which uses manual content analysis and might be prone to manual biases. This study will provide insights into the effectiveness of CEO letters in communicating a company's sustainability practices and priorities to stakeholders which in turn improves their sustainability performance. By conducting an exhaustive linguistic analysis of CEO letters, our study can reflect positively on a company's commitment towards professionalism, transparency, and effective communication.

### **3. Methodology**

This research scrutinizes the communication efficacy of CEOs from companies with top-tier ESG (Environmental, Social, and Governance) scores, specifically those ranked in the top 500 by S&P Global. Our criteria for selection were stringent: companies needed a dedicated Corporate Social Responsibility (CSR) report and a letter from the CEO or a top executive hold be present in the CSR report. The final document compiled in this research in total, contained 403 entries. This extensive count represents a detailed aggregation of CEO communications from top-performing companies in terms of Environmental, Social, and Governance (ESG) metrics, as identified by S&P Global. Each entry within this document reflects a meticulous examination of linguistic and emotional elements, contributing to a robust analysis of corporate communication strategies in the context of CSR performance.

Our analytical approach harnessed various Natural Language Processing (NLP) methodologies to dissect the CEO letters. We stripped away stop words, numbers, punctuations, and applied stemming. Then, we utilized *Latent Dirichlet Allocation* (LDA) for discerning prevalent topics within these communications.

To delve into the sentiments and emotions embedded in these letters; we employed R programming tools like "sentimentr" and "syuzhet". The "sentimentr" package was instrumental in calculating sentiment scores of individual sentences, taking into account various linguistic modifiers such as negators and intensifiers. The "syuzhet" package, through the NRC Emotion Lexicon, facilitated the evaluation of emotional content in the texts.

We treated the S&P Global ESG scores as a proxy for quantifiable CSR performance, offering an objective lens to assess corporate social responsibility. Our analysis included a polarity calculation, measuring the balance of positive and negative language, as outlined by Chatterjee (2020). We mapped out different emotions like anger (indicating high-arousal negative emotions), sadness, and disgust (low-arousal emotions), as well as trust and joy (positive high-arousal emotions), based on the categorization by Cavanaugh et al. (2016).

Additionally, we incorporated the Fog Index as a metric to evaluate the readability of these CEO letters in CSR reports, calculated through a formula that combines average sentence length and the proportion of complex words.

## **4. Results**

### *4.1 Topic modeling*

For the topic modeling in our study, we used Latent Dirichlet Allocation and evaluated various models with different topic numbers. We found that coherence scores peaked at four topics, suggesting this was the optimal number. This peak indicated the best balance between topic specificity and overlap. Beyond four topics, the coherence decreased, showing less clarity and distinction between topics. Thus, we concluded that four topics offered the most meaningful insights for our dataset after manual analyses along with coherence score analysis. Figure 1 shows the coherence graph used to decide on number of topics

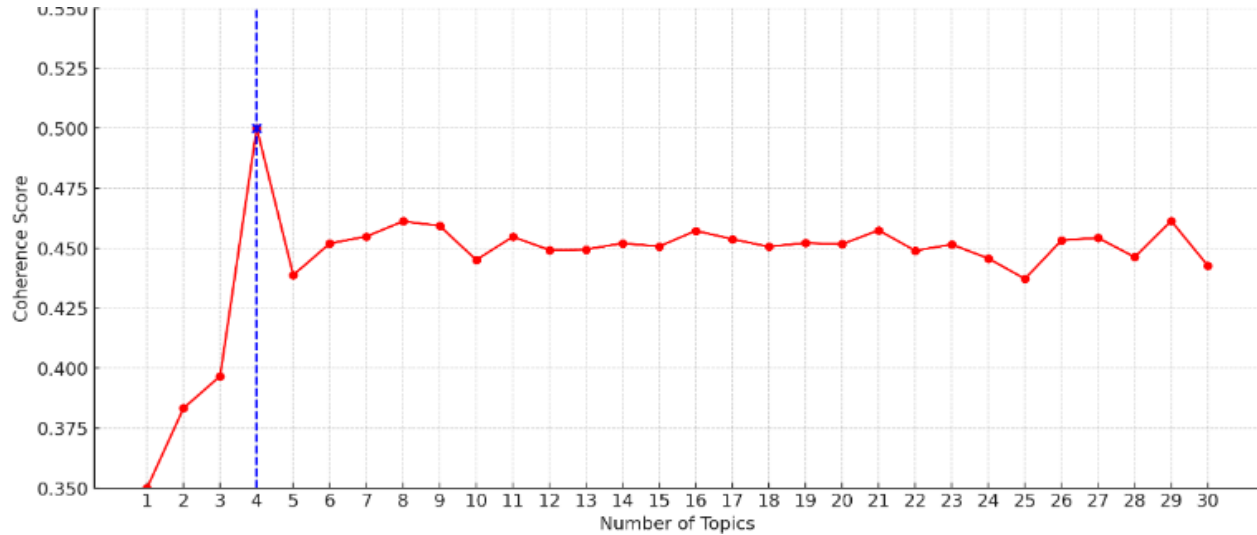


Figure 1. Coherence Score Analysis for Optimal Topic Determination

In exploring the key themes that CEOs are addressing in their CSR reports, we find four primary areas of focus. The first theme, Sustainable Energy, delves into efforts by companies to minimize their carbon footprint and work towards zero emissions. Keywords in this context include 'energy', 'sustainability', 'zero', 'reduction' and 'innovation'.

The second theme is centered on Business Responsibility and ESG. Here, the focus is on sustainable business and improving performance in Environmental, Social, and Governance (ESG) aspects. This theme is characterized by terms like 'responsibility', 'growth', 'support', and 'sustainable'.

The third prominent theme is Health and Wellness. Companies are prioritizing improvements in public, employee health and access to healthcare resources. This is indicated by the use of terms such as 'health', 'patient', 'support', 'disease' and 'employee'.

Lastly, the fourth theme relates to Environmental Impact, where the emphasis is on reducing environmental footprints and carbon emissions. This involves terms like 'sustain', 'impact', 'environment', and 'carbon'. Each theme, with its specific set of keywords, highlights the different areas that CEOs are currently focusing on in their reporting.

#### 4.2 Regression Analysis

Figure 2 analyses the frequency distribution of standardized residuals, a crucial step in evaluating the assumptions of our regression analysis. We focus on the "ESG score" as the dependent variable, and the histogram visually represents the distribution of standardized residuals. These standardized residuals are frequently used to assess the normality of errors in regression models.

The x-axis of the histogram displays the values of standardized residuals, while the y-axis shows their corresponding frequencies. Notably, the distribution appears approximately symmetrical around the mean, which is remarkably close to zero (mean =  $-8.21E-16$ ). This symmetry indicates that the residuals are evenly distributed above and below the predicted values, a promising sign.

To assess the normality assumption further, we superimpose a curve on the histogram, attempting to fit a normal distribution to the data. This is a critical assumption in many statistical tests. The curve closely follows the expected bell-shaped pattern, characteristic of normally distributed residuals. Although there are slight deviations from a perfect fit, these can be attributed to factors such as sampling variability.

It's worth mentioning that the standard deviation of the residuals is 0.933, a typical value for standardized residuals, as they are scaled to have a standard deviation close to 1. Additionally, the ample sample size of 403 meets the requirements of the Central Limit Theorem, implying that the sampling distribution of the mean is approximately normal. This provides further support for our assumption of normally distributed residuals.

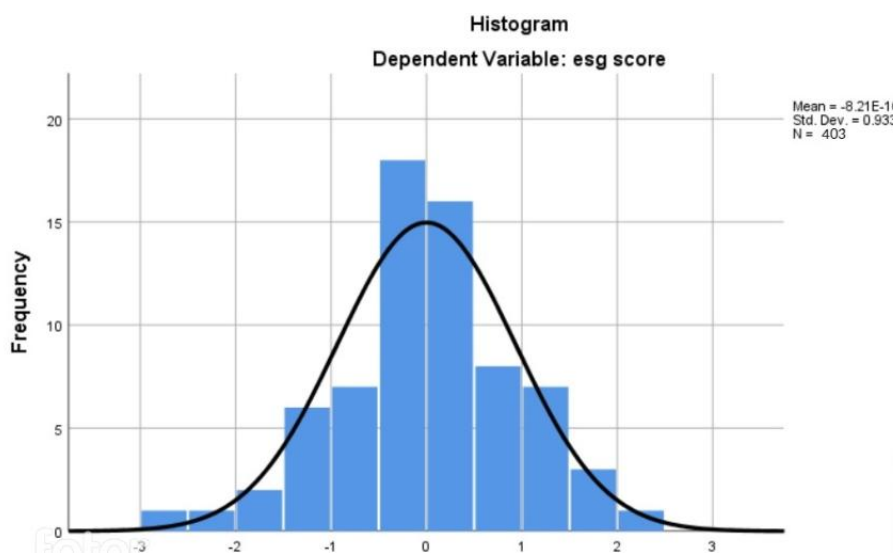


Figure 2. Standardized Residuals Histogram for ESG Score Regression

The Normal P-P Plot of Regression Standardized Residuals for the dependent variable, 'ESG score', is shown in Figure 3. The plot reveals that the residuals are well-aligned with the expected normal line, which suggests that the normality assumption required for linear regression is satisfied. The distribution of the data points along the reference line indicates that the regression model's residuals exhibit a normal distribution. Therefore, the assumption of normality for the linear regression analysis is confirmed, supporting the robustness of our findings.

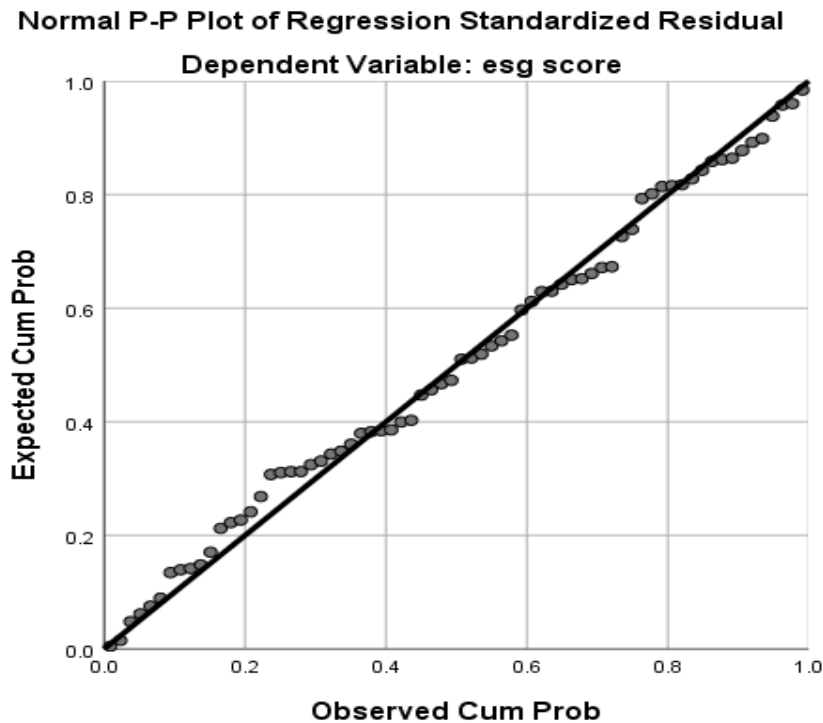


Figure 3. Normal P-P Plot of Regression Standardized Residuals

The model coefficients demonstrated a good fit according to the omnibus test. Furthermore, the R-square value was 0.328. The correlation was examined and it indicates that we do not have a high level of multicollinearity. We also checked the variation inflation factor (VIF) of the variables and found that all of them had a VIF value of less than 5, indicating that there was no problem of multi-collinearity. The regression results summarized in Table 2.

Model		Standardized Coefficients	P value
		Beta	
1	(Constant)		p<0.001
	Sustainable Energy	.210	p<0.1
	Business Responsibility and ESG	.247	p<0.05
	Health and wellness	.274	p<0.05
	Environmental Impact	.268	p<0.05
	polarity	-.815	p<0.05
	FOG	.170	p>0.1
	high arousal(negative)	.553	p<0.05
	high arousal (positive)	.725	p<0.1
	low arousal	-.521	p<0.05
	Sentiment score	-.146	p>0.1
Dependent variable: ESG score			

Table 2. Regression output

In the above table, we present the quantitative results derived from our analysis of CEO letters' content and sentiment in relation to environmental, social, and governance (ESG) performance. Table 2 outlines the standardized coefficients for each variable in our multiple regression model.

The analysis demonstrates significant associations between specific themes in CEO letters and ESG performance. Sustainable Energy, Business Responsibility, and ESG practices exhibit notable positive relationships, with standardized coefficients of .210 (p<0.1), .247 (p<0.05), and .274 (p<0.05) respectively. These results suggest that emphasizing these themes in CEO communications is linked to improved ESG performance.

Moreover, the impact of addressing environmental concerns is evident, as seen in the coefficient of .268 (p<0.05) for Environmental Impact. This highlights the importance of incorporating ecological considerations into corporate messaging for favorable ESG outcomes.

The sentiment analysis reveals intriguing patterns. A negative polarity in CEO letters is strongly associated with better ESG performance, indicated by a significant coefficient of -.815 (p<0.05). This result suggests that a more positive tone in communications might not necessarily correlate with superior ESG metrics.

The emotional tone of CEO letters also plays a crucial role. High arousal (negative) language is positively associated with ESG performance (coefficient = .553,

$p < 0.05$ ), while high arousal (positive) language shows a similar trend with a coefficient of .725 ( $p < 0.1$ ). On the other hand, low arousal language is negatively associated with ESG performance, as indicated by a coefficient of  $-0.521$  ( $p < 0.05$ ).

However, neither the overall sentiment score nor the FOG (FOG reading ease) factor exhibit statistically significant associations with ESG performance.

## 5. Discussion

This study investigated the influence of several key factors on ESG scores, including "Health and Wellness", "Business Responsibility and ESG", "Environmental Impact", and "Sustainable Energy". The findings revealed significant relationships between the first three factors and ESG scores, while the "Sustainable Energy" factor showed moderate impact. The following discussion explores the implications of these findings and their relevance to sustainable business practices.

A focus on health and wellness reflects a company's commitment to social responsibility by prioritizing the physical and mental well-being of its employees and the broader community (Liu *et al.*, 2023; Stock *et al.*, 2023). This emphasis contributes to a positive work environment, enhances overall productivity and performance, and improves corporate reputation, stakeholder relations, and long-term financial performance. In the context of ESG, the significant relationship between health and wellness and ESG scores underlines the importance of incorporating employee well-being initiatives into a company's sustainability strategy.

Business responsibility and ESG, as a significant factor, indicates that companies that actively integrate ESG considerations into their business strategies are more likely to achieve higher ESG ratings. This finding supports prior research suggesting that businesses committed to ethical conduct, social and environmental responsibility and transparent governance are better positioned to manage risk and achieve long-term success (Bansal *et al.*, 2006). Embedding ESG principles into a company's core strategy also enhances its alignment with globally recognized sustainability frameworks, such as the United Nations Sustainable Development Goals (SDGs), improving corporate reputation, stakeholder trust, and access to capital (Seele & Schultz, 2022).

The significant relationship between environmental impact and ESG scores demonstrates the importance of addressing environmental issues in corporate sustainability strategies. By prioritizing eco-friendly initiatives, such as reducing emissions, conserving resources, and promoting circular economy practices, companies can not only mitigate environmental risks but also capitalize on new market opportunities (Niyommaneerat *et al.*, 2023). This commitment to environmental stewardship also signifies a company's responsiveness to growing stakeholder expectations surrounding climate change and resource scarcity.

In contrast, the moderate-significant relationship between the "Sustainable Energy" factor and ESG scores might be attributed to several reasons. Sample heterogeneity, with firms operating in different sectors facing varying levels of exposure to energy-related risks and opportunities, could affect the prominence of energy and sustainability topics in their CEO messages and the subsequent relationship with ESG scores (Dragomir, 2018; Svanberg *et al.*, 2022). Additionally, measurement limitations, such as the focus on CEO messages in sustainability reports, might not fully capture the extent of a company's commitment to energy and sustainability. Another potential explanation could be the evolving landscape of sustainability and ESG reporting, as companies shift their focus from energy-specific initiatives to broader sustainability issues.

Despite the moderate-significant finding, energy efficiency and sustainable energy sources remain crucial aspects of a company's overall sustainability strategy. Reducing energy consumption and transitioning to clean energy can help organizations mitigate climate-related risks, comply with regulatory requirements, and capitalize on market opportunities for sustainable products and services (Niyommaneerat *et al.*, 2023). Moreover, enhancing energy and sustainability performance can contribute to global climate goals and demonstrate a company's commitment to responsible business practices.

This study also examined the relationship between various emotional expressions, sentiment scores, polarity, and readability scores in CEO messages and their impact on ESG scores. The findings revealed that low arousal emotions (sadness and disgust) had a negative significant effect on ESG scores, while positive high arousal emotions (trust and joy) were moderate-significant. Interestingly, negative high arousal emotions (anger) showed a positive significant effect on ESG scores. Additionally, polarity had a negative significant effect, while sentiment and readability scores (FOG) were non-significant.

The negative relationship between low arousal emotions and ESG scores suggests that conveying sadness and disgust in CEO letters may be perceived as a lack of confidence or a pessimistic outlook on the company's sustainability performance. This low emotional tone could potentially undermine stakeholders' trust in the company's commitment to ESG objectives.

The moderate-significant relationship between positive high arousal emotions and ESG scores could indicate that stakeholders view these expressions as expected or neutral in the context of sustainability reporting. It is possible that stakeholders are more interested in the substantive actions and outcomes related to sustainability rather than expressions of trust and joy in CEO messages.

Surprisingly, the positive significant effect of negative high arousal emotions, such as anger, on ESG scores may reflect stakeholders' perception of these emotions as a signal of the CEO's passion for addressing sustainability challenges (Bansal *et al.*, 2006). This emotional expression could convey a sense of urgency and commitment to driving change, resonating with stakeholders who value strong leadership on ESG issues.

The negative significant effect of polarity on ESG scores implies that excessive emotional fluctuation in CEO messages could be perceived as a lack of stability or consistency in the company's sustainability approach (Cho *et al.*, 2023). This finding underscores the importance of maintaining a balanced emotional tone in sustainability communications.

Lastly, the non-significant findings for sentiment and readability scores (FOG) indicates that stakeholders might be more focused on the content and emotions of the messages rather than their sentiment or linguistic complexity (Loughran & McDonald, 2014). Also, different stakeholder groups might interpret and value the information in CEO messages differently. While some may appreciate simpler, more straightforward language, others may seek more sentiment rich, technical information. This diversity in expectations and interpretations can dilute the significance of readability and sentiment scores in evaluating ESG performance. Further analysis is indeed essential to validate and expand upon these findings.

## **6. Conclusion**

This study highlights the crucial role of key themes like health and wellness, business responsibility, and environmental impact in enhancing ESG scores, underlining the importance of these factors in a company's sustainability strategy. While sustainable energy shows a moderate impact, it remains a key component of a holistic sustainability approach. The emotional tone in CEO communications also significantly influences ESG scores, highlighting the need for balanced, passionate messaging to foster stakeholder trust and confidence in a company's commitment to sustainability. These insights offer valuable guidance for companies striving to improve their ESG performance and contribute to global sustainability goals.

### *6.1 Implications*

The implications derived from integrating comprehensive sustainability strategies into business operations are multifaceted, with significant effects on both short-term expenditures and long-term financial and ESG performance. While the initial outlay for developing and implementing such strategies might be considerable, these practices are increasingly linked to economic benefits, including enhanced market competitiveness through innovation, cost savings from increased efficiency, and mitigation of risk factors

related to environmental, social, and governance (ESG) issues. For instance, robust sustainability initiatives can lead to reductions in energy consumption, which not only align with environmental stewardship but also translate into direct financial savings. Furthermore, these initiatives can pre-emptively address regulatory requirements, potentially avoiding costly fines and penalties, while also bolstering the company's brand in the eyes of consumers and investors, enhancing its overall market value.

Moreover, the emotional tone of communications, particularly those emanating from company leadership such as the CEO, has a pronounced impact on investor and consumer perceptions, which can, in turn, influence market valuations and investment flows. A balanced and positively toned emotional delivery in corporate messaging can engender trust and confidence, potentially leading to a more favorable evaluation of the company's stock, greater stakeholder engagement, and enhanced brand loyalty. This is pivotal in an economic context as it can lower the cost of capital by portraying a stable and optimistic company outlook.

There is also a tangible economic impact associated with the correlation between business responsibility, transparency, and ESG scores. The propensity for businesses that exhibit higher levels of responsibility and transparency to attain better ESG scores is increasingly recognized by investors and credit institutions. Improved ESG ratings can attract a broader investor base, particularly the growing segment of socially responsible investors. Moreover, companies with higher ESG scores often benefit from better financing conditions, including lower interest rates on loans, as they are perceived to be lower risk. Conversely, lack of transparency and poor ESG performance can lead to a higher cost of capital and potentially deter investment.

In light of these factors, companies are encouraged to tailor their sustainability reporting and communication strategies to highlight those aspects of their ESG initiatives that are most impactful. This tailored approach not only facilitates more effective stakeholder communication but also supports the economic objective of maximizing stakeholder value through improved ESG performance. The strategic communication of sustainability efforts, therefore, becomes a vital component in a company's economic and financial planning, directly influencing its market positioning and financial robustness.

### *6.2 Limitations and future scope*

Despite its comprehensive analysis, the study acknowledges certain limitations. Firstly, the selection of companies and CEO messages, while extensive, might not encompass the full diversity of the corporate world. This limitation offers opportunities for future research to include a broader range of industries and company sizes. Secondly, while focusing on CEO messages provides valuable insights, incorporating additional data sources, such as operational metrics and stakeholder feedback, could enrich the understanding of ESG performance. The evolving nature of ESG standards

and sustainability practices suggests a dynamic research field, ripe for ongoing exploration and adaptation. Finally, the study's approach opens avenues for more nuanced analyses that consider the changing perceptions and expectations of stakeholders, underscoring the importance of adaptability and responsiveness in corporate sustainability strategies.

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