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The Role of Abnormal Tone in Board Reports in Shaping CSR Performance

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Abstract

Purpose: This study examines how tone management in board reports influences corporate social responsibility (CSR) performance in emerging markets, focusing on the Tehran Stock Exchange. It addresses the underexplored qualitative aspects of CSR disclosures, particularly how abnormal tone signals transparency or concealment in sustainability reporting. Design/methodology/approach: This paper is based on a postgraduate study completed in 2022. Using a dataset of 987 firm-year observations (2016–2022), we measure abnormal tone through textual analysis of board reports and assess its impact on six CSR dimensions. The methodology combines vocabulary-based tone detection with regression analysis, controlling for firm-specific factors. Findings: The results reveal a significant negative relationship between abnormal tone and CSR performance, particularly in environmental and energy dimensions. The adverse effects persist into subsequent years, highlighting the long-term consequences of tone manipulation. Originality/value: This study contributes to the social and environmental accounting literature by analysing tone management in an emerging market context. It introduces vocabulary combinations as a novel approach to detecting nuanced tone variations, offering practical insights for regulators and firms aiming to enhance CSR transparency.

Keywords: abnormal tone; corporate social responsibility (CSR); tone management; board of directors reports; management accounting and decision-making; emerging markets

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1. Introduction

Corporate performance has evolved beyond financial metrics, including the company's commitment to CSR. This shift reflects heightened societal scrutiny of business ethics and sustainability, driven by major corporate collapses such as Enron and WorldCom. Investors and stakeholders increasingly demand transparency and accountability in both financial and non-financial disclosures, underscoring the significance of CSR reporting.

While prior studies have extensively explored the quantitative aspects of CSR disclosures, the qualitative dimensions remain underexplored, particularly the role of tone in textual disclosures. Corporate performance is no longer measured solely by financial outcomes but also by a company's commitment to CSR. This evolution reflects growing societal and investor expectations for transparency and sustainability. Studies reveal numerous benefits of robust CSR practices, such as enhanced financial reporting quality and improved stakeholder trust. Despite extensive research on quantitative CSR disclosures, the role of qualitative elements—like tone in textual disclosures—remains underexplored, particularly in emerging markets. The present study's innovation focuses on the impact of abnormal tone in the board of directors' activity reports on CSR performance and its different dimensions.

In contrast to studies focusing on tone's effect on corporate performance, this research examines how managers strategically use abnormal tone to shape stakeholder perceptions of CSR reports. Moreover, conducting this study in an emerging economy (Iran) under unique economic conditions and corporate ownership structures further underscores the significance and innovation of this research. Given the above, this study examines the impact of abnormal tone in the Board of Directors' activity reports on CSR performance across six dimensions, using data from Tehran Stock Exchange-listed companies. Additionally, the study explores the long-term impact of abnormal tone on CSR outcomes in subsequent years, focusing on the context of Tehran Stock Exchange-listed companies.

The intersection of CSR and corporate disclosure practices presents a fertile ground for research. Prior studies have documented numerous benefits of robust CSR practices, including enhanced financial reporting quality, reduced earnings management, and lower tendencies toward aggressive tax strategies. These benefits are not confined to financial metrics but extend to fostering stakeholder trust and credibility.

Given the high capacity of the tone of qualitative disclosures to bias information and the neglect of the role of linguistic factors related to the tone of managers' reporting on CSR performance, the main goal of this study is to investigate the tone management in the board of directors activity report on CSR performance to highlight the importance of research based on text analysis as an effective information collection tool on people's perceptions of qualitative indicators of CSR. Moreover, for companies, the study provides insights into the potential long-term impacts of tone management on CSR performance, advocating for greater transparency and authenticity in corporate communications. However, while much research has focused on the quantitative aspects of CSR disclosures, the qualitative dimensions remain underexplored, particularly the tone of textual disclosures. This study aims to bridge this gap. Specifically, it examines the presence of abnormal tones (deviations from normative or expected tones) and their subsequent effect on various dimensions of CSR performance.

Despite the growing interest in CSR reporting, the focus has primarily been on quantitative disclosures, with limited attention to the qualitative dimensions, such as the tone of board reports. Tone management, particularly abnormal tone, has the potential to signal transparency or concealment in CSR communications. However, research addressing this qualitative aspect, especially in emerging markets like Iran, is scarce; therefore, this study addresses such an issue.

This research underscores the pivotal role of qualitative disclosures in shaping perceptions of corporate performance. It calls for a more nuanced approach to CSR reporting that goes beyond compliance and fosters genuine accountability and ethical behaviour. Despite the growing studies on CSR, there remains a significant gap in research, particularly regarding understanding the relationship between CSR performance and abnormal tone. This paper addresses the need for further research in this area and demonstrates how the tone of disclosures shapes CSR performance. It also strengthens the theoretical foundations of CSR studies and provides a comprehensive perspective on the interaction between CSR performance and managerial behaviour. As businesses navigate the complex landscape of stakeholder expectations and regulatory requirements, the findings of this study serve as a reminder of the profound impact that the manner of corporate communication can have on long-term sustainability and corporate integrity.

This study uniquely contributes to the CSR literature by focusing on tone manipulation in board reports—a relatively unexplored area in emerging markets like Iran. The findings provide insights into how firms in markets with weaker regulatory frameworks use tone management to influence stakeholders' perceptions of CSR performance. Additionally, the study bridges the gap between sustainable finance practices and ethical corporate behaviour by emphasising the role of abnormal tone in fostering—or undermining—trust and accountability. These implications are critical for advancing sustainable finance by integrating qualitative dimensions into CSR evaluations.

2. Theoretical Background and Hypotheses Development

In recent years, significant advancements in CSR reporting standards have been witnessed. For instance, the Global Reporting Initiative (GRI) updated its standards post-2020, emphasising materiality and stakeholder inclusiveness. Additionally, integrating artificial intelligence (AI) in analysing corporate disclosures, including tone detection, has enhanced the accuracy and reliability of qualitative analysis (Ghosh et al., 2023; Pareek & Sahu, 2022; Sahu et al., 2022). Emerging research also highlights the use of machine learning in detecting tone manipulation, offering innovative approaches to understanding corporate communication (Nandi et al., 2025; Sun et al., 2024; X. Yang et al., 2025).

In the wake of corporate collapses like Enron and WorldCom, societal scrutiny of ethics within the business realm has intensified. CSR and its disclosure are paramount among the pivotal ethical concerns in business. According to surveys conducted by KPMG in 2020, approximately 90% of the leading companies in the United States have included CSR information in separate reports or integrated with their annual financial statement (KPMG, 2020). Given the current trend where prominent global corporations disclose CSR-related information for various motives, the field has become an attractive area for research to examine the factors and consequences of CSR. Several studies have underscored the benefits accruing to companies involved in socially responsible activities (Carroll, 1979; Chen et al., 2020; Kreps, 1990; Van der Laan Smith et al., 2005).

Consequently, companies demonstrating greater responsibility tend to exhibit lower levels of earnings management (Y. Kim et al., 2012; Tsang et al., 2023), higher financial reporting quality (Dhaliwal et al., 2011, 2012), and a reduced propensity for pursuing aggressive tax strategies (Hoi et al., 2013; Lanis & Richardson, 2012).

While empirical research focusing on qualitative factors such as textual disclosures in CSR remains limited, natural language processing (NLP) methods (a subset of machine learning) are increasingly used by researchers to gain insight into managers' disclosures on many topics, including sustainability. AI can not only generate text but also analyse it, and can play a constructive role in analysing qualitative information (De Villiers et al., 2024). Emerging findings underscore the significant role of expression style in depicting financial and non-financial events within a company. Such expression facilitates the transmission of valuable information and enhances transparency for various stakeholders, including investors, managers, standard-setting bodies, and others (Du & Yu, 2021; Sun et al., 2024). For instance, prior research suggests that the linguistic style employed in management reports serves as a pivotal element in shaping the organisational identity vis-à-vis stakeholders and also influences perceptions of the charismatic manager's role among shareholders (Amernic et al., 2010; Weick et al., 2005).

Conversely, financial reports primarily target investors, focusing predominantly on quantitative and financial data. However, in line with legitimacy theory, qualitative reports cater to a broader spectrum of stakeholders, including society and investors. These reports predominantly feature textual and non-financial information concerning companies' policies and performance in social, environmental, and corporate governance (Dhaliwal et al., 2012; Du et al., 2017).

The descriptive nature inherent in the board of directors' activity reports underscores the significance of text features such as readability and tone in enhancing the effectiveness of these reports. The manner of expression serves as a tool for shaping the informational content of disclosures within these reports, thereby fostering stakeholder trust and potentially generating a sustainable competitive advantage (Berrone et al., 2023; T. M. Jones et al., 2018). However, the extent to which the management of qualitative disclosures correlates with CSR remains ambiguous. Recognising the pivotal role of tone in influencing users' decision-making processes, this study seeks to explore the relationship between tone management in board activity reports and CSR within the context of Iran, an emerging economy. Accordingly, this research endeavours to investigate whether an association exists between abnormal tones in board activity reports and CSR performance and further explores which dimensions of CSR reflect a significant relationship.

"Abnormal tone" refers to deviations from the expected language patterns in disclosures, reflecting managerial intent to either emphasise or downplay specific aspects of performance. "Tone management" encompasses the deliberate use of language to influence stakeholder perceptions of CSR activities. These definitions align with prior studies on textual analysis in financial and CSR reporting (Muslu et al., 2019; Du & Yu, 2021).

Du and Yu (2021) highlighted that managers utilise both quantitative (measurable) and qualitative (textual) indicators in CSR reports. However, it is essential to acknowledge that CSR performance information presented in textual form varies in its descriptive nature. For instance, the employee welfare index within the service dimension of CSR reports encompasses elements such as employee benefits, training, career development, and workplace safety and health, often mirrored in a company's financial statements. Since the financial statements are audited, such information is less susceptible to manipulation through tone management in other report disclosures. Consequently, we hypothesise that the impact of managing tone in textual disclosures varies across different dimensions of CSR reporting. Hence, this study aims to empirically examine the relationship between managers' abnormal tone, segmented across the six dimensions of CSR reports.

Since CSR activities typically span multiple years and involve long-term projects, the impact of the abnormal tone in the board's activity report is anticipated to extend to the subsequent periods of CSR performance. Hence, this aspect was also explored, contributing to the broader literature on the informational content of abnormal tones.

Similarly, research by Y. Yang et al. (2020) revealed that Managers at companies with strong ESG performance are motivated to adopt an abnormally positive tone, primarily due to their vested interests in stock-based compensation and in an attempt to reduce the pressure from increased financial analyst coverage and the increased perception conveyed through analyst reports. The findings suggest that abnormal positive tones may reflect managerial self-interest rather than honest performance reflection, urging investors to scrutinise annual reports more vigilantly. On the other hand, according to standard practice, financial statement reporting adheres to a specific framework and undergoes certification via independent audits. However, in most countries, textual reports lack a standardised reporting framework and do not undergo auditing (Corciolani et al., 2024; Perrini, 2006; Tschopp & Huefner, 2015). Nonetheless, external users rely on various company reports to inform their economic decisions, emphasising the significance of presentation style in shaping users' perceptions. This allows managers to employ contextual disclosure strategies; however, it is crucial to note that increased disclosure does not necessarily equate to enhanced informational content (Ayuningtyas & Harymawan, 2021; Bendriouch et al., 2024). An essential consideration in textual reports is that textual statements are inherently more manipulative than numerical data. Therefore, in managerial textual reports, presenting information warrants careful consideration. Also, according to the Securities Exchange Commission (Christensen et al., 2021), the disclosure of CSR reports and their reception within society contribute to a more comprehensive understanding of companies' performance. However, there is a concern regarding whether other factors influence these disclosures' impact on investors' decisions. Additionally, the Financial Accounting Standards Board (FASB) asserts that information disseminated in qualitative reports, including CSR reports, should possess informative content to facilitate future planning and decision-making. Hence, analysing textual disclosures in external reporting is a significant issue (M. K. Hassan et al., 2019; Loughran & McDonald, 2016).

In Iran, CSR measurement typically relies on CSR disclosure and information in the board of directors' activity report and is not prepared as a standalone document. Iran has grappled with inflationary stagnation and international sanctions in recent years, leading to decreased economic growth and adverse effects on company profitability. Consequently, Iranian shareholders exhibit reluctance to bear the costs associated with CSR implementation and reporting as they prioritise preserving the value of their capital and safeguarding expected returns. However, the government controls a significant portion of ownership and management in critical industries such as steel, petrochemicals, oil, and gas. Against current economic conditions, most stakeholders consistently demand CSR performance. As a linguistic element, the tone can shape the depiction of events, imbuing them with desired meanings or influencing users' decisions through word choice. The tone is a strategic tool for purposefully conveying information or shaping perceptions (Fisher et al., 2020). Thus, this research substantially contributes to theory and practice by elucidating textual patterns within companies' performance reports. Previous research findings indicate that managers utilise text features, such as readability, to convey information in textual disclosures and mitigate information asymmetry effectively (Du & Yu, 2021). However, while textual disclosures reduce information asymmetry, they also provide managers with a tool to manipulate reality, enabling them to present company events that suit their interests. This occurs because reporting standards do not specify how disclosures should be made in management reports (Buchholz et al., 2018).

For this reason, managers use different linguistic styles (Tone and readability) when providing textual reports on company performance. This behaviour of managers can be traced back to agency theory (Jensen & Meckling, 1976), wherein managers may act in their own interests due to shareholders' incomplete information regarding the company's actual performance and managers' motivations. Consequently, this ambiguity fosters a non-transparent information environment, giving rise to information asymmetry (Du & Yu, 2021; Huang et al., 2014).

Unlike previous research that often conflates tone and readability, this study distinguishes between linguistic style abnormalities (abnormal tone) and readability. Tone and readability are two distinct characteristics, with tone influencing readability (Fisher et al., 2020; Tan et al., 2014). For instance, when a company's performance is poor, managers may employ an abnormal tone to obfuscate facts and provide additional explanations, increasing complexity and decreasing readability (Henry & Leone, 2016; Y. Liu & Moffitt, 2016; Loughran & McDonald, 2015). Conversely, signalling theory posits that managers must disclose information to maintain credibility. In summary, it is theoretically argued that abnormal tone (positive or negative) in board activity reports influences CSR by altering the complexity and readability of textual disclosures within these reports. In the rival theoretical perspective, managers with an opportunistic approach and positive consequences of abnormal tone reduce information asymmetry by providing textual disclosures to reduce the company's litigation and financial risks (Hasan & Habib, 2019; Vestrelli et al., 2024).

The findings of this study further indicate that managers strategically manipulate the tone of textual disclosures within the board of directors' reports for personal gain or other motivations. By using abnormal tones in their disclosures, managers exacerbate the complexity and information asymmetry within the company's performance reports, decreasing the CSR performance score. The following sections discuss the key elements of the current study.

1—Social responsibility and its dimensions

CSR is a comprehensive framework of actions that transcends the narrow interests of organisations, showcasing a company's dedication to social welfare and its commitment to enhancing society's overall quality (N. T. Hassan, 2010). This multifaceted concept of CSR encompasses meeting the expectations of all stakeholders, including shareholders, the environment, and society at large (McWilliams & Siegel, 2001). It underscores organisations' need to actively engage in societal and environmental betterment actively, advocating voluntary participation in fostering environmental, social, and economic development. As such, the disclosure of a company's CSR performance communicates its efforts in environmental stewardship, regulatory compliance, and energy conservation to the public (N. T. Hassan, 2010).

According to resource-based theory (RBT), firms engage in competitive endeavours to acquire tangible and intangible resources (Peteraf & Barney, 2003). Thus, companies' involvement in CSR activities holds the potential to cultivate intangible resources, thereby enhancing organisational performance through avenues such as bolstering reputation, driving innovation, and fostering customer trust (Flammer & Kacperczyk, 2016; Mishra, 2017; Radhakrishnan et al., 2018). Theories such as stakeholder theory, ethics, and organisational culture further reinforce the link between CSR activities and the added value of a company. Stakeholder theory posits that for long-term survival and success, a company must garner support from all its stakeholders (Van der Laan Smith et al., 2005). According to this theory, engaging in socially responsible activities can enhance a company's performance and add value through various means, including product differentiation in the market (Mackey et al., 2007; Waddock & Graves, 1997), fostering stronger relationships with customers (Mescon & Tilson, 1987; Varadarajan & Menon, 1988), and improving employee productivity by enhancing working conditions, boosting intrinsic motivation, and attracting employees aligned with the company's objectives.

Conversely, poor social performance across different dimensions can lead to performance deterioration, heightened business risks, and restrictions on future auditor cooperation (Campbell & Kamlani, 1997). Theories of ethics and organisational culture share a common focus on the pursuit of "right" conduct and shared beliefs about ethical behaviour, respectively. Ethical theories assert that corporate CSR activities reflect heightened social awareness and superior business ethics grounded in principles of what is morally right (Carroll, 1979; T. M. Jones, 1995).

Similarly, organisational culture theories (Kreps, 1990) emphasise the benefits of responsibility for promoting a company economically, socially, environmentally, and beyond. Empirical studies conducted by Y. Kim et al. (2012) validate that responsible companies exhibit more responsible behaviours across their decision-making processes and engage in less earnings management than their counterparts. Consequently, their audit risk is mitigated (Godfrey, 2005; J.-W. Kim, 2010). They are also less inclined to pursue aggressive tax strategies (Hoi et al., 2013; Lanis & Richardson, 2012), reducing the likelihood of facing prosecution by tax authorities and diminishing the risk of auditor lawsuits.

CSR textual disclosures serve as a mechanism for companies to highlight their dedication to meeting stakeholders' societal and environmental expectations. Despite the absence of legal or professional mandates for CSR (Ali et al., 2023; Fisher et al., 2020), companies voluntarily incorporate economic, environmental, and social dimensions into their decision-making and operations. Companies offer a holistic view of their performance and prospects through managerial statements (Rutherford, 2005). By disclosing accounting information across economic, environmental, and social dimensions—such as society, energy, service, customer, environmental, and human resource dimensions—CSR reports enable different segments of society to gauge the company's stance on environmental protection and assess its approach to environmental and social issues. In this context, accounting is pivotal in elucidating economic activities' financial and environmental impacts. It bears responsibility for measuring, evaluating, and disclosing environmental and social performance within financial statements or their appendices. Therefore, CSR can be conceptualised as managing potential conflicts of interest among diverse stakeholders concerning economic, environmental, social, and ethical matters (El-Deeb et al., 2023).

Concerning the environmental impacts of economic activities, critical issues such as global warming, pollution, environmental degradation, and the growing importance of sustainable business practices come to the forefront. In response, the United Nations integrated environmental and sustainability goals into human rights frameworks in 2015. Notably, improper waste disposal and water pollution have surged recently, yielding myriad adverse environmental effects. From a social perspective encompassing human, societal, and service dimensions, heightened awareness of gender discrimination, inadequate safety measures in high-risk operations, and income inequality has garnered attention. Additionally, the Global Reporting Initiative (GRI), founded in 2000, is revising its framework to address renewable energy concerns (Maaloul et al., 2023; Rabaya & Saleh, 2022). Indeed, companies operating within the chemical and oil industries recognise the criticality of disclosing information about the adverse environmental impacts of their operations. Given the potentially significant adverse environmental consequences, these companies prioritise CSR performance to bolster and safeguard their reputations. Failure to do so could adversely affect shareholder interests (Perez et al., 2017). Consequently, many companies across various industries have begun to actively engage in CSR disclosure (Hamed et al., 2022; Y. Yang et al., 2020).

2—The Tone of the Board Report

The theoretical framework of this study primarily draws on Signalling Theory and Legitimacy Theory. Signalling Theory provides the foundation for understanding how firms use tone to convey their CSR intentions to stakeholders. Legitimacy Theory complements this by explaining how tone manipulation can influence societal perceptions and maintain organisational legitimacy. While other theories, such as Agency and Impression Management, are relevant, their applicability is secondary to the primary focus on signalling and legitimacy in this context.

Applying signalling theory provides a lens to understand how tone in disclosures influences stakeholder perceptions. A positive tone signals managerial confidence, while an abnormal tone—deviations from expected communication norms—can obscure true performance and erode trust. Studies in developed markets underscore the adverse effects of tone manipulation on investor confidence (Henry, 2008; Fisher et al., 2020). However, research specific to emerging markets like Iran remains sparse, necessitating focused exploration.

The nuances of language extend beyond mere dictionary definitions. The way words are used within sentences can imbue them with new meanings or connotations, and the combination of words can significantly influence people's perceptions and the overall validity of the text, mainly when different tones are employed. The verbal tone is a powerful tool that individuals often wield deliberately to shape distinct perceptions through their choice of words (Fisher et al., 2020).

According to Hart et al. (2013), tonology encompasses several subtle points. The capacity to use words from the same family in sentences within the same text varies. Still, when combined, they convey a similar meaning. Verbal tone becomes more discernible when words are arranged descriptively, in addition to simile compounds. The tone recognition strengthens when words in the text are arranged sequentially and consecutively.

As a communication tool, tone holds significant potential to manipulate meaning. Indeed, studies have affirmed a relationship between an optimistic tone and the short-term reactions of market participants (Davis et al., 2012; Henry, 2008). An optimistic tone entails using words that affirm a concept or emphasise its positive aspects. Furthermore, research indicates that changes in tone within textual reports are associated with short-term market reactions, investor judgments (Davis et al., 2012; Feldman et al., 2010; Huang et al., 2014), and alterations in profit forecasts (Tan et al., 2014). It is posited that a tone inconsistent with a company's financial information is deemed abnormal.

3—Tone and readability

Despite many studies considering that tone and readability are synonymous (M. Jones & Smith, 2014; Loughran & McDonald, 2016), they represent distinct characteristics of information disclosure.

Fisher et al. (2020) define tone as a product of people's choice of words, while readability pertains to the complexity of the text narrative, ultimately influencing users' judgments of financial and non-financial reports. Readability reflects the text's authenticity, whereas tone refers to the positivity or negativity with which information is presented to users (M. Jones & Smith, 2014; Loughran & McDonald, 2016).

Consequently, akin to the findings of Fisher et al. (2020) and Efretuei (2021), tone affects readability. Loughran and McDonald (2016) assert that textual disclosures encompass "analysing the manner of expression" and "readability" in company performance reports, where the manner of expression pertains to the tone of the text, involving the extraction of meaning or understanding from a set of focal words. Conversely, readability ensures the text's ability to convey the intended message. Hrasky and Smith (2008) also regard readability as a management tool in reporting, ensuring shared understanding in textual disclosures for report users.

4—Abnormal Tone and CSR

Based on the provided insights, it is clear that tone emerges from selecting distinct words (Efretuei, 2021; Fisher et al., 2020; Tan et al., 2014), whereas readability is intricately linked to the narrative complexities of the text. Consequently, this research contends that tone and readability are interdependent and manifest simultaneously despite distinct characteristics. Consequently, the abnormal tone in textual disclosures is associated with its readability (Efretuei, 2021; Fisher et al., 2020).

According to signalling theory, textual disclosures enhance market participants' understanding of a company's performance by augmenting the transparency of financial information and diminishing information asymmetry. Clarkson et al. (2008) supported the notion of voluntary reporting, acknowledging that companies with superior performance tend to make more voluntary disclosures. Consequently, when a company performs well, it typically enhances the readability of its reports by adopting a positive tone and presenting facts using less complex language. Muslu et al. (2019) also pointed out a positive relationship between high ESG performance and a more optimistic ESG reporting tone in their research. Positive language helps reduce noise in analysis, as companies often employ positive terminology even when discussing adverse events. Indeed, a positive tone may signal optimism about a company's performance, whereas a negative tone may suggest managerial uncertainty regarding performance. Furthermore, from a signalling theory perspective, the absence of managerial reporting implies a weak relationship between the company and external stakeholders, potentially resulting in adverse economic consequences and reputational damage. Therefore, management reporting on the company's performance is essential (Loughran & McDonald, 2011).

According to agency theory, managers possess sufficient personal incentives to exploit information asymmetry with shareholders to maximise their interests. Additionally, drawing from management obfuscation theory and signalling theory, when a company performs poorly, it may publish convoluted and ambiguous content to obscure its subpar performance. Managers are inclined to obfuscate to safeguard their economic interests (De Souza et al., 2019; Rutherford, 2003). When companies face poor performance, managers often make their reports more ambiguous, impacting the readability of the information provided (Bloomfield, 2008). Since conveying bad news entails a complex environment, managers must provide additional explanations, typically employing more complex language. Consequently, the complexity of disclosures renders the text less readable and exacerbates information asymmetry (Efretuei, 2021).

Lang and Lundholm (2000) discovered that managers can enhance the attractiveness of investing in the company's stock through optimistic disclosures. Moreover, psychologists suggest that negative words carry a more significant impact and undergo more processing, with increased processing associated with more words and complexity (Tetlock et al., 2008). Hence, an abnormal tone renders reading more challenging and intricate. Previous studies have demonstrated that when a company's performance is poor, managers have ample motivation to diminish the readability of the company's reports (Ajina et al., 2015; Lo et al., 2017; Luo et al., 2018). Indeed, Fisher et al. (2020) explored the impact of various managerial tones on the readability of reports and found a significant relationship between these tones and levels of disclosure complexity (readability).

Similarly, M. K. Hassan et al. (2019), drawing from the managerial obfuscation hypothesis, asserted that the readability of CSR disclosures influences the performance of CSR reports. Leveraging the impression management theory, it can be inferred that management, through selecting and utilising a specific tone, can exert different effects on users' perceptions of the company's financial reports (Patelli & Pedrini, 2015). Schlenker (1980) characterises impression management as individuals' deliberate efforts to manipulate events and interpretations. Consequently, management may manipulate investors' expectations to influence their perceptions rather than truthfully representing events and company performance. Essentially, since textual disclosure lacks a specific framework, managers have the discretion to determine what information to disclose in management reports or whether to disclose CSR information, as statements regarding CSR disclosures are voluntary and not subject to a specific reporting standard, typically remaining unaudited (Das & Naidu, 2024; Perrini, 2006; Woźny et al., 2024). Consequently, managers may capitalise on the opportunity, mainly when the company's performance is poor, by employing complex language or structures to downplay controversial or adverse events or by emphasising positive events while downplaying negative ones, thereby creating a form of text complexity that fosters information asymmetry (M. K. Hassan et al., 2022).

However, the main theoretical framework for this study is grounded in the Signalling Theory, which posits that companies send signals to the market through their corporate disclosures to convey information about their performance and prospects. In the context of this research, the tone of the Board of Directors' activity reports acts as a signal to stakeholders regarding the company's CSR performance. Signalling Theory is particularly relevant here as it helps explain how companies may use positive language to enhance their perceived CSR efforts and influence stakeholder perceptions. Furthermore, this study also integrates insights from the Legitimacy Theory, which suggests that firms seek to align their actions and communications with societal norms and expectations to maintain legitimacy. This dual-theoretical approach provides a comprehensive understanding of how tone management in corporate reports can affect actual CSR outcomes. By examining the interplay between signalling positive CSR performance and maintaining legitimacy, the study provides a nuanced perspective on the implications of tone management in corporate disclosures, emphasising the importance of transparency and authenticity in enhancing CSR performance.

Greater (lesser) text complexity in reported disclosures corresponds to reduced (increased) readability and diminished (enhanced) textual components of responsibility disclosures as one of these reported pieces of information. Overall, it is theoretically posited that an abnormal tone in textual disclosures leads to greater disclosure complexity and reduced readability.

3. Research Gap

The existing literature predominantly focuses on quantitative aspects of CSR disclosures, neglecting the nuanced influence of qualitative elements such as tone. For instance, studies have shown that tone impacts stakeholders' perceptions and decision-making (Fisher et al., 2020; Du & Yu, 2021). However, the interaction between tone management and CSR performance in emerging markets, particularly Iran, remains underexplored. This study fills this void by examining the interplay between abnormal tone and CSR performance across diverse dimensions.

This study draws on Signalling Theory and Legitimacy Theory to analyse how companies use tone in corporate disclosures to signal CSR performance and align with societal norms. By examining tone's impact across six CSR dimensions—environmental, energy, customer, human, service, and society—this research hypothesises a significant negative relationship between abnormal tone and CSR outcomes.

4. Hypotheses

A negative and significant relationship exists between the abnormal tone of board activity reports and CSR performance.

Du and Yu (2021) highlighted that managers can utilise both quantitative indicators (measurable) and qualitative indicators (textual) in CSR reports. However, CSR performance information presented in textual form differs in its descriptive nature. For instance, the employee welfare index within the service dimension of the CSR report encompasses employee benefits, training, career development, and safety and health measures, typically reflected in the company's financial statements. Given that financial statements undergo auditing, such information is less susceptible to manipulation through tone management in other report disclosures. Consequently, tone management is anticipated not to uniformly influence the various dimensions of CSR reporting in textual disclosures.

The above hypothesis is grounded in the idea that tone management serves as a signalling mechanism. Firms use an abnormal tone in CSR disclosures to project transparency and align with societal expectations. However, excessive tone manipulation can signal opportunism, undermining stakeholder trust. This aligns with societal norms of transparency and accountability, reinforcing the theoretical justification for examining one's impact on CSR performance.

Integrating firm-specific factors, such as abnormal tone, with macro-level CSR dimensions is grounded in Signalling and Legitimacy Theories. Signalling Theory suggests that tone management is a tool for firms to communicate their alignment with societal expectations, particularly when addressing stakeholders' concerns about CSR transparency. Similarly, Legitimacy Theory highlights how organisations use CSR disclosures to maintain societal approval. Combining these levels enables a holistic understanding of how internal managerial practices align with external CSR expectations, reinforcing the interconnectedness of micro- and macro-level analyses.

5. Diagram Suggestion

A conceptual diagram can visually represent the relationship:

- Firm-Specific Factors: Abnormal Tone → Managerial intent → Stakeholder perception.
- Macro-Level CSR Dimensions: Transparency → Accountability → CSR performance

As the CSR report comprises six distinct dimensions, separate hypotheses were formulated to examine the general relationship between managers' abnormal tone and CSR, addressing each of these dimensions:

Hypothesis 1A. *There is a negative and significant relationship between the abnormal tone of the board activity report and the energy dimension of the CSR.*

Hypothesis 1B. *There is a negative and significant relationship between the abnormal tone of the board activity report and the service dimension of the CSR.*

Hypothesis 1C. *There is a negative and significant relationship between the abnormal tone of the board activity report and the customer dimension of the CSR.*

Hypothesis 1D. *There is a negative and significant relationship between the abnormal tone of the board activity report and the human dimension of the CSR.*

Hypothesis 1E. *There is a negative and significant relationship between the abnormal tone of the board activity report and the social dimension of CSR.*

Hypothesis 1F. *There is a negative and significant relationship between the abnormal tone of the board activity report and the environmental dimension of the CSR.*

Given the long-term and continuous nature of projects and activities related to CSR performance, which typically span more than one year, the second hypothesis seeks to explore the impact of the abnormal tone present in the board of directors' report on the performance score of the company's CSR report in the subsequent year.

Abnormal tone negatively impacts the CSR performance score in subsequent years.

6. Methodology

The study uses 987 firm-year observations from 141 Tehran Stock Exchange-listed companies (2016–2022). CSR performance is measured across six dimensions using content analysis. Abnormal tone is calculated as the residual of a tone regression model, which adjusts for firm-specific factors such as size, profitability, and market-to-book ratio. Control variables include prior-year CSR performance, market-to-book ratio, sales growth, return on assets, firm size, and financial leverage.

The TSE's data is based on audited financial statements and board reports, a reliable source of information used by many authors (Daryaei et al., 2022; Nassirzadeh et al., 2023; Pouryousof et al., 2022; Shandiz et al., 2022) The accessible sample is composed of firms meeting the following criteria: (1) availability of necessary information for research throughout the studied period, (2) consistency in activities over the financial year period, and (3) exclusion of investment firms, financial intermediaries, banks, and insurance companies. Consequently, the accessible sample consists of 141 firms, totalling 987 firm-year observations between 2016 and 2022.

The sample is limited to Tehran Stock Exchange-listed firms, which may restrict the generalisability of findings to other markets. Future research could extend this analysis to firms in other emerging and developed markets to validate the robustness of the results and explore potential regional variations in tone management practices.

Vocabulary combinations capture nuanced variations in tone that individual words may fail to convey. This approach enhances the precision of tone analysis, particularly in detecting subtle shifts in managerial intent. Studies by Hart et al. (2013) and Efretuei (2021) demonstrate the effectiveness of such combinations in identifying patterns in textual disclosures, making this method particularly suitable for analysing CSR reports.

7. Model and Variables

To test the first and second hypotheses, the regression model is formulated as follows:

$$\mathrm{CSR}_{i,t} = \alpha_0 + \beta_1\mathrm{ABTONE}_{i,t} + \beta_2\mathrm{CSR}_{i,t-1} + \beta_3\mathrm{MB}_{i,t} + \beta_4\mathrm{GROWTH}_{i,t} + \beta_5\mathrm{ROA}_{i,t} + \beta_6\mathrm{SIZE}_{i,t} + \beta_7\mathrm{LEV}_{i,t} + \sum_{k=1}^{10}\beta_k\mathrm{Year}_k + \sum_{j=1}^{10}\beta_j\mathrm{Ind}_j + \varepsilon$$

$$\mathrm{CSR}_{i,t+1} = \alpha_0 + \beta_1\mathrm{ABTONE}_{i,t} + \beta_2\mathrm{CSR}_{i,t} + \beta_3\mathrm{MB}_{i,t} + \beta_4\mathrm{GROWTH}_{i,t} + \beta_5\mathrm{ROA}_{i,t} + \beta_6\mathrm{SIZE}_{i,t} + \beta_7\mathrm{LEV}_{i,t} + \sum_{k=1}^{9}\beta_k\mathrm{Year}_k + \sum_{j=1}^{9}\beta_j\mathrm{Ind}_j + \varepsilon$$

8. Dependent Variable

CSR: The board report is utilised to measure CSR. CSR score is assessed across six environmental dimensions: services, human resources, customers, society, and energy. Each dimension contributes to the firm's overall CSR performance. Through content analysis of the board of directors' activity report, compliance with any component of CSR dimensions is denoted by a value of one. At the same time, non-compliance receives a value of zero. The level of CSR disclosure for each firm is determined by calculating the ratio of disclosed items to total items disclosed.

The index measurement employs a checklist comprising 39 options about the firm's environmental and social actions. This checklist is based on research conducted by Aribi and Gao (2010). If any indicator mentioned in the board of directors' report is disclosed, it is assigned a value of one; otherwise, it receives a zero value.

9. Independent Variable

In this study, the simple disclosure tone, denoted as TONE, is measured following Henry (2008) as follows:

$$\mathrm{Tone} = (\mathrm{pw} - \mathrm{nw})/(\mathrm{pw} + \mathrm{nw})$$

The simple disclosure tone, TONE, is determined based on the number of positive words (pw) and negative words (nw) in the report's text. The disclosure tone is deemed optimistic if the tone is positive, indicating a more significant occurrence of positive words. Conversely, if the tone is negative, suggesting a higher frequency of negative words, the disclosure tone is considered pessimistic.

To identify the abnormal tone, the disclosure tone is adjusted using a set of variables that account for the company's expected risk and return, following the approach outlined by Huang et al. (2014). Specialised vocabulary from Pele et al. (2021) was employed for this purpose.

Similarly to the methodology utilised by P. Liu and Nguyen (2020), the abnormal tone of managers' textual disclosures is gauged through the residual of the tone model. Therefore, the abnormal tone (ABTONE) is calculated as the error term in the following relationship:

$$TONE_{i,t} = \beta_0 + \beta_1 EARN_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 BTM_{i,t} + \beta_4 RET_{i,t} + \beta_5\ STD\_EARN_{i,t} + \beta_6\ STD\_RET_{i,t} + \beta_7\ LOSS_{i,t} + \beta_8\ AGE_{i,t} + \beta_9 \Delta EARN_{i,t} + \varepsilon_{i,t}$$

EARN represents the firm's reported profit in the current period, scaled by total assets. SIZE denotes the firm's size, derived from the natural logarithm of its market value relative to total assets. BTM signifies the book-to-market ratio, calculated by dividing the book value of equity by the market value of equity. RET corresponds to the annual stock return, computed as the average monthly returns for the current period. STD_EARN represents the standard deviation of the profit in the current period relative to the previous period. At the same time, STD_RET signifies the standard deviation of the annual stock return in the current period compared to the last period. LOSS is a dummy variable indicating whether the firm incurred a loss in the current period; it takes the value of 1 if the firm made a profit and 0 otherwise. AGE denotes the natural logarithm of the firm's age in years, and ΔEARN represents the change in profit from the current period compared to the previous period.

10. Control Variables

Last year's social responsibility (CSR_t−1) refers to the firm's CSR score in the previous year, as per the criteria outlined by Aribi and Gao (2010) and Gao et al. (2005) research checklist. Given the precedence of using the previous year's performance score as a control variable in prior research, it is also included as a control variable in this study. Earlier studies (Barnett, 2007; Tang et al., 2015) indicate that CSR performance is serially correlated; thus, the previous year's CSR performance is controlled.

Market Value to Book Value (MB): This is calculated by dividing the market value of equity by the book value of equity.

Return on assets (ROA): This is computed by dividing the net profit reported in the profit and loss statement by the total assets reported in the balance sheet.

Previous studies (Adams & Hardwick, 1998; Waddock & Graves, 1997) show that companies with better financial performance tend to have better CSR performance, market-to-book value ratio (MB) and return on assets (ROA) are included as indicators of firm performance in the regression analysis.

Sales growth (GROWTH) is determined as the difference between the current year's sales revenue and the previous year's, divided by the sales amount of the last year. Since companies with higher growth may have fewer resources for CSR activities but still possess more significant incentives to utilise CSR to reduce information asymmetry, the companies were controlled in the study (Liao et al., 2021).

Firm size (SIZE): represents the natural logarithm of the firm's market value at the end of the period. According to prior research, firm size positively impacts CSR engagement (Adams & Hardwick, 1998; McElroy & Siegfried, 1985) because larger companies tend to have a more significant social impact relative to the scale of their operations (Cowen et al., 1987). At the same time, larger firms are more resistant to influences and, therefore, are less socially responsive (Meznar & Nigh, 1995). Consequently, the variable SIZE is controlled due to its potential effects on CSR (Abagail & Siegel, 2000; Udayasankar, 2008).

Financial leverage (LEV) is derived by dividing total liabilities by assets. According to prior research (Adams & Hardwick, 1998; Orlitzky & Benjamin, 2001), firms with lower risk are more likely to engage in CSR activities; therefore, company leverage (LEV) is also controlled.

11. Research Findings

Descriptive Statistics

The descriptive findings of the research, as presented in Table 1, reveal that the average CSR score in the current year (t) is 0.32, slightly higher than the previous year's (t − 1) average of 0.31. This discrepancy may be attributed to the nature of CSR activities, which often involve long-term endeavours spanning multiple years. Moreover, the questionnaire used to assess the dimensions of CSR contains measures that address issues extending beyond a single year. Specifically, specific CSR actions, particularly those addressing environmental and societal concerns, necessitate extended durations to yield tangible impacts. Consequently, CSR scores may incrementally improve over consecutive years as companies continue their sustained efforts, and these dimensions receive the intended disclosure scores across multiple successive years. Moreover, the CSR disclosure level is relatively low and limited (maximum ≈ 0.61 out of 1). The variation is not high, indicating that most firms have similar CSR levels. Skewness and kurtosis are close to normal, suggesting that CSR in the sample is stable and similar. The average financial leverage is 0.61, indicating a relatively high debt ratio among firms. This suggests that companies rely considerably on borrowing to achieve their desired performance. Firms with higher leverage usually engage less in CSR activities because they have limited financial resources and are subject to higher risk. Concerning the SIZE variable, the range is wide (11.6 to 19.3), with most firms being of medium to large size. Larger firms typically disclose more CSR activities because they face higher social and regulatory pressures. Please see Table 1 for descriptive statistics.

Table 1. Descriptive Statistics.

Variable	Mean	Median	Max	Min	SD	Skewness	Kurtosis
CSR	0.322	0.307	0.615	0.102	0.123	0.286	2.400
ABTONE	0.085	0.065	0.383	0.001	0.073	1.563	5.907
CSR_t−1	0.318	0.307	0.615	0.076	0.125	0.278	2.420
GROWTH	0.403	0.312	2.789	−0.523	0.544	1.524	6.795
MB	0.484	0.311	5.133	−0.843	0.760	4.018	22.581
LEV	0.618	0.598	1.363	0.146	0.252	0.593	3.271
SIZE	14.533	14.357	19.298	11.643	1.453	1.001	4.504
ROA	0.218	0.126	2.610	−0.335	0.407	3.709	19.441

Note: This Table presents descriptive statistics for the main variables used in the analysis. The sample consists of 987 firm-year observations from 141 companies listed on the Tehran Stock Exchange from 2016 to 2022. All variables are defined in the Appendix A.

Despite encountering negative sales growth figures, notably prevalent in the food (excluding sugar) and parts and automobile industries, companies have maintained nonzero CSR scores and provided textual disclosures in their board activity reports. The standard deviation values in Table 1 signify the appropriate variability of the research variables. Additionally, the proximity between the mean and median values suggests a satisfactory distribution of the research variables, affirming their suitability for model-fitting purposes.

The correlation test between the research variables was conducted using Spearman's correlation test, and the summary of the results is presented in Table 2. The analysis reveals an inverse correlation between the abnormal tone of the board of directors' reports and the company's CSR performance. Specifically, as the abnormal tone in textual disclosures by management increases (or decreases), the CSR performance score tends to decrease (or increase) accordingly.

Table 2. Correlation Matrix.

Variable	CSR	ABTONE	CSR_t−1	GROWTH	LEV	MB	ROA	SIZE
CSR	1.000							
ABTONE	−0.031	1.000						
CSR_t−1	−0.020	0.855 ***	1.000					
GROWTH	0.087 ***	0.044	0.028	1.000				
LEV	−0.026	−0.030	−0.022	−0.060 *	1.000			
MB	0.061 *	0.006	−0.016	−0.223 ***	−0.002	1.000		
ROA	0.046	0.072 **	0.065 **	0.417 ***	−0.140 ***	−0.165 ***	1.000	
SIZE	−0.024	0.306 ***	0.315 ***	0.005	0.058 *	−0.164 ***	0.039	1.000

Note: This table reports Spearman correlation coefficients for the main variables. The sample consists of 987 firm-year observations. Variable definitions are provided in the Appendix A. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Furthermore, the absence of correlation among the independent variables in the model indicates the absence of collinearity issues. This suggests that the independent variables are not interrelated, reinforcing the reliability of the regression model.

12. Research Results

As detailed in Table 3, the regression results support the research hypothesis postulating a negative relationship (−0.058) between the abnormal tone of the board of directors' activity report and the CSR performance score, confirmed at a 95% confidence level. This suggests that as the abnormal tone in textual disclosures within the board of directors' report increases (or decreases), CSR tends to decrease (or increase), respectively. Moreover, the R-squared value of the model, at 0.75, signifies a robust relationship between the independent variable (abnormal tone of the board activity report) and the dependent variable (CSR). The abnormal tone can account for up to 75% of the variability in CSR changes. The Durbin–Watson statistic, registering at 2.10, also indicates the absence of autocorrelation among model errors. According to the presented results, the previous year's CSR and company size variables are significant at the 1% error level among the control variables. The regression model also assumed the year and industry variables to be constant. These findings underscore the importance of considering various factors in analysing the relationship between board activity reports and CSR performance.

Table 3. The Impact of Abnormal Tone on CSR Performance.

Variable	Coefficient	t-Statistic	*p*-Value
Intercept	−0.053	(−2.679)	0.007 ***
ABTONE	−0.058	(−2.347)	0.019 **
CSR_t−1	0.781	(29.740)	0.000 ***
GROWTH	−0.005	(−1.405)	0.160
MB	−0.001	(−0.875)	0.381
LEV	0.003	(0.516)	0.605
ROA	−0.001	(−0.281)	0.778
SIZE	0.007	(4.724)	0.000 ***
Fixed Effects			
Industry	Yes		

Table 3. *Cont.*

Variable	Coefficient	t-Statistic	*p*-Value
Year	Yes		
Model Fit			
Observations	987		
Adjusted R^2	0.75		
F-Statistic	177.026		

Note: This table presents OLS regression results that test the relationship between abnormal tone in board reports and overall CSR performance. The model is: CSR_t = α + β1ABTONE_t + β2CSR_t−1 + βControls + ε. The dependent variable is the CSR score in year *t*. The main independent variable is *ABTONE*, the abnormal tone. All variables are defined in the Appendix A. Robust t-statistics are in parentheses. *** and **, denote significance at the 1% and 5%, levels, respectively.

Table 4 presents the descriptive statistics for the dimensions of CSR. It is evident that the minimum score for all dimensions, except for the human resources dimension, is zero. This indicates that the sample firms have disclosed activities related to these dimensions throughout the research period. Conversely, the maximum score is associated with the human dimension, signifying that firms made the most disclosures regarding CSR performance in human resources.

The results of testing the hypotheses about the relationship between the abnormal tone and the six dimensions of the CSR report are presented in Table 5. Consistent with the primary model of this research, each dimension's score from the previous year has been incorporated as a control variable in the model. The scope of the study encompasses the examination of the six dimensions of CSR from 2017 to 2022, with a total of 846 observations per year. This approach enables a comprehensive investigation into the nuanced relationships between the abnormal tone in board activity reports and various dimensions of CSR performance over the specified period.

The results showed that among the hypotheses related to CSR dimensions, based on *p*-values, the environmental dimension (0.010) and the energy dimension (0.000) were confirmed, while the customer dimension (0.582), the human dimension (0.413), the service dimension (0.481), and the society dimension (0.582) were not. This indicates that the hypotheses related to the environmental and energy dimensions of the CSR report are supported. The lack of confirmation of the relationship between the abnormal tone of the board activity report and the other dimensions of the CSR report suggests that the managers' abnormal tone does not equally influence the disclosed items in different dimensions. As mentioned in the theoretical foundations, the reason for this variability in impact can be attributed to the simultaneous presence of indicators disclosed in both the CSR report and the audited financial statements or to the absence of a specific framework for voluntary CSR reports (Perrini, 2006; Tschopp & Huefner, 2015). The lack of any particular framework allows companies to disclose CSR information according to the preferences of their stakeholders. Some CSR dimensions, such as customer, human resources, service, and society, are more closely tied to actual company performance and information already disclosed in financial statements (Overlap with Financial Reporting Information). Therefore, managers' abnormal tone in board activity reports may not significantly influence these dimensions, as the disclosed items are cross-validated by financial data. Environmental and energy dimensions are typically associated with objective and measurable performance (e.g., energy consumption, greenhouse gas emissions), making them more susceptible to impression management through abnormal tone.

Table 4. Abnormal Tone and Dimensions of CSR Performance.

Variable	Environmental	Energy	Customer	Human	Service	Society
Intercept	−0.103 ***	−0.098 ***	−0.091 *	0.051	0.059	−0.091 *
	(−3.820)	(−2.969)	(−1.697)	(0.949)	(1.626)	(−1.697)
ABTONE	−0.115 **	−0.162 ***	−0.030	−0.044	−0.038	−0.030
	(−2.575)	(−3.898)	(−0.550)	(−0.818)	(−0.704)	(−0.550)
Lagged Dimension	0.820 ***	0.715 ***	0.715 ***	0.687 ***	0.747 ***	0.715 ***
	(31.210)	(25.850)	(14.180)	(14.960)	(19.290)	(14.180)
GROWTH	−0.013 *	−0.005	−0.005	−0.001	−0.001	−0.005
	(−1.855)	(−0.968)	(−1.031)	(−0.122)	(−0.204)	(−1.031)
MB	0.002	0.009 **	−0.003	−0.011	−0.011	−0.003
	(0.562)	(2.225)	(−0.481)	(−1.569)	(−1.569)	(−0.481)
LEV	−0.001	0.005	0.005	−0.008	0.009	0.005
	(−0.099)	(0.445)	(−0.331)	(−0.399)	(0.583)	(−0.331)
ROA	0.006	0.004	−0.038 ***	−0.011	0.011	−0.038 ***
	(0.743)	(0.432)	(−2.734)	(−0.847)	(0.762)	(−2.734)
SIZE	0.011 ***	0.010 ***	0.008 **	0.004	0.003	0.008 **
	(4.580)	(4.447)	(2.149)	(1.342)	(1.265)	(2.149)
Fixed Effects						
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Model Fit						
Observations	846	846	846	846	846	846
Adjusted R^2	0.760	0.631	0.631	0.535	0.580	0.631

Note: This table presents OLS regression results that test the relationship between abnormal tone and specific dimensions of CSR. Each column represents a separate regression where the dependent variable is the score for the specified CSR dimension in year *t*. The main independent variable is ABTONE. All models control for the lagged value of the respective CSR dimension and other firm characteristics. Variable definitions are in the Appendix A. Robust t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

In contrast, human resources, service, and society dimensions are largely qualitative and subjective, relying on voluntary actions and social priorities, and therefore are less influenced by the tone used by managers. Firms may disclose non-environmental CSR information based on specific stakeholder preferences rather than managerial tone. Consequently, variations in the tone of board activity reports have minimal effect on these CSR dimensions. According to the results in Table 5, at the 99% confidence level, the abnormal tone variable significantly impacts the environmental dimension (−0.115) and the energy dimension (−0.162) of CSR. Given the negative sign of the abnormal tone coefficients, it can be inferred that an increase (or decrease) in the abnormal tone of text disclosures in the board activity report corresponds to a decrease (or increase) in the performance score of the CSR report in both the environmental and energy dimensions.

The regression results of the second hypothesis test confirm the research hypothesis regarding the relationship between the abnormal tone of the board of directors' activity report and the CSR performance score of the following year, with a significance level of 95%. Additionally, the negative coefficient (−0.156) indicates that as the abnormal tone of textual disclosures within the board of directors' activity report increases (or decreases), the

CSR performance score of the subsequent year tends to decrease (or increase). Furthermore, the control variables reveal significant findings: the company growth variables are essential at the 5% level, while the company size variable is vital at the 1% error level. These results underscore the importance of considering these factors in analysing the relationship between board activity reports and CSR performance.

Table 5. The Persistent Impact of Abnormal Tone on Future CSR.

Variable	Coefficient	t-Statistic	*p*-Value
Intercept	−0.196	(−2.755)	0.006 ***
ABTONE	−0.156	(−2.256)	0.024 **
CSR_t	0.832	(43.400)	0.000 ***
GROWTH	−0.012	(−2.094)	0.036 **
MB	0.004	(0.198)	0.843
LEV	−0.021	(−1.018)	0.308
ROA	0.008	(0.773)	0.439
SIZE	0.034	(6.734)	0.000 ***
Fixed Effects			
Industry	Yes		
Year	Yes		
Model Fit			
Observations	705		
Adjusted R^2	0.307		
F-Statistic	20.567		

Note: This table presents OLS regression results that test the persistent impact of abnormal tone on future CSR performance. The model is: CSR_t+1 = α + β1ABTONE_t + β2CSR_t + βControls + ε. The dependent variable is the CSR score in year *t + 1*. The main independent variable is *ABTONE* in year *t*. All variables are defined in the Appendix A. Robust t-statistics are in parentheses. *** and ** denote significance at the 1% and 5%, levels, respectively.

13. Results and Discussion

This study highlights practical and managerial implications for corporate communication and CSR performance. For corporate managers, the results underscore the necessity of transparency and authenticity in the Board of Directors' activity reports. Manipulating the tone to present an overly favourable image can lead to a decline in CSR performance, particularly in environmental and energy dimensions. Managers should prioritise genuine disclosures that accurately reflect their company's CSR efforts.

The study advocates for enhanced guidelines for regulatory bodies and policymakers that encompass both quantitative and qualitative aspects of corporate reporting. By incorporating tone analysis into regulatory frameworks, they can ensure that corporate disclosures accurately represent performance and ethical standards.

Investors and stakeholders are encouraged to critically assess corporate reports, paying close attention to abnormal tones as potential indicators of discrepancies between reported and actual performance. Developing a nuanced understanding of tone management can lead to more informed decision-making and greater accountability.

The regression analysis reveals a significant negative relationship between abnormal tone and CSR performance, with the most substantial effects observed in environmental and energy dimensions. These findings align with prior studies indicating that tone manipulation undermines stakeholder trust and long-term performance (Du & Yu, 2021; Sun et al., 2024).

Contrasting these results with studies in developed markets highlights key differences. While firms in the U.S. and UK benefit from stringent regulatory frameworks, companies in emerging markets like Iran often lack standardised guidelines, amplifying the impact of tone manipulation on stakeholder perceptions. The findings reveal that tone manipulation negatively impacts CSR performance in the Iranian context, consistent with studies in developed markets such as the U.S. and UK (e.g., Muslu et al., 2019). However, the magnitude of this impact is more pronounced in emerging markets due to weaker regulatory frameworks and limited stakeholder monitoring. This highlights the critical role of regulatory oversight in mitigating tone manipulation's adverse effects on CSR.

The observed negative relationship between abnormal tone and CSR aligns with Signalling Theory, which posits that tone management can reduce information asymmetry between firms and stakeholders. However, when tone manipulation becomes excessive or inconsistent with actual performance, it signals a lack of transparency, undermining trust. This finding supports Legitimacy Theory by highlighting how deviations in tone management affect societal approval, particularly in markets with limited regulatory oversight. These results underscore the importance of balanced tone management in enhancing CSR outcomes.

Overall, this research promotes a holistic approach to corporate communication, emphasising the importance of integrating genuine narratives with factual reporting to foster stakeholder trust and credibility, ultimately enhancing long-term CSR performance and corporate integrity.

The findings reveal a significant negative relationship between abnormal tone and CSR performance, particularly in environmental and energy dimensions. Comparative analysis with studies in developed markets (e.g., USA, UK) indicates contrasting results, highlighting contextual differences in regulatory environments and stakeholder expectations.

The findings of this study carry significant implications for decision-making and management accounting within organisations. They reveal that using an abnormal tone in board reports—a qualitative, often unregulated aspect of corporate communication—can negatively impact Corporate Social Responsibility (CSR) performance, particularly in environmental and energy dimensions. This suggests that managers' linguistic choices are not merely presentational but have real, measurable consequences on sustainability outcomes. This underscores the need to integrate qualitative disclosure analysis—such as tone assessment—into internal control and performance evaluation systems for management accounting. By monitoring and regulating the tone of internal and external reports, management accountants can help reduce information asymmetry, mitigate impression management, and align disclosed narratives with actual CSR performance. Furthermore, these insights advocate for developing non-financial performance indicators that account for disclosure quality, enabling more holistic and transparent decision-making. Ultimately, fostering authenticity in corporate reporting can enhance stakeholder trust, support long-term strategic planning, and reinforce the role of management accounting in promoting both accountability and sustainable value creation.

Practical Implications

- Managers: Transparency and authenticity in disclosures are essential. Manipulating tone may offer short-term benefits but harms long-term CSR performance.
- Regulators: Develop guidelines incorporating tone analysis to ensure accurate CSR reporting.
- Stakeholders: Assess tone critically to detect discrepancies in disclosures

- Combining quantitative data with tone assessment enhances credibility, reduces information asymmetry, and improves long-term CSR outcomes.
- These steps provide practical, actionable measures beyond generic policy advice. NLP and AI Tools: Regulatory bodies and standard-setters can integrate natural language processing (NLP) and AI methods to analyse qualitative CSR disclosures systematically.
- Enhance Transparency: Using these tools can help detect inconsistencies in managers' textual disclosures, improving the transparency and reliability of CSR reports.
- Inform Stakeholders: Investors, managers, and policymakers can use insights from AI-driven analysis to understand better corporate sustainability performance and the expression style of disclosures, enabling more informed decision-making.

14. Conclusions

This study explores the critical role of tone management in corporate disclosures, particularly in the context of Board of Directors' activity reports, and its impact on CSR performance. By focusing on abnormal tones—deviations from the expected or normative tones in these reports—this research provides new insights into the qualitative aspects of corporate communication and their implications for CSR.

This study underscores the pivotal role of tone management in shaping CSR performance. The findings suggest that abnormal tone in the Board of Directors' reports negatively impacts CSR outcomes, particularly in environmental and energy dimensions. Integrating AI tools and updated regulatory standards can enhance the reliability of disclosures, fostering greater accountability and stakeholder trust. Future research should explore the applicability of these findings across different cultural and regulatory contexts.

The analysis of 987 observations from 141 companies listed on the Tehran Stock Exchange between 2016 and 2022 reveals a significant negative relationship between abnormal tone in board activity reports and subsequent CSR performance. This relationship is particularly pronounced in the environmental and energy dimensions of CSR. These findings suggest that companies engaging in tone management to present a more favourable image may experience a decline in their actual CSR performance in the following year. This paradox highlights the potential pitfalls of manipulating the qualitative aspects of corporate disclosures. In recent years, environmental pollution and the persistent drought affecting species in Iran have garnered significant attention from government institutions and various environmental protection groups. Consequently, companies are increasingly compelled to disclose environmental issues more comprehensively in their CSR reports.

A confirmed relationship exists between the abnormal tone of board activity reports and the energy-related disclosures in CSR reports. Given Iran's prominent economic position in the region and its active involvement in energy industries such as petrochemicals and oil, the disclosures about the energy dimension in CSR reports have become particularly crucial for companies. In research conducted in emerging economies by Cezarino et al. (2022), it is pointed out that the energy dimension at the sustainability level is more focused on concepts of poverty reduction, literacy, and gender equality, while at the company level, it is more focused on indicators of reducing the negative impacts of land use and measures for transparency and labour standards. Therefore, it is likely that the breadth of social responsibility concepts will also affect managers' understanding of social responsibility indicators and the weighting given to each indicator.

Several critical implications arise from these findings. Firstly, for policymakers and regulatory bodies, the results underscore the necessity of stringent guidelines addressing the content and tone of corporate disclosures. Traditional regulatory frameworks primarily focus on the quantitative aspects of financial reporting, often neglecting the qualitative dimensions. The insights from this study advocate for a more comprehensive approach that includes monitoring the tone of disclosures to ensure they accurately reflect corporate performance and ethical standards.

Secondly, this research highlights the importance of critically assessing corporate reports for investors and other stakeholders. To discern the disclosures' authenticity and transparency, stakeholders must look beyond the surface of corporate communications. Abnormal tones can serve as red flags, indicating potential discrepancies between reported and actual performance. By developing a keen understanding of tone management, stakeholders can make more informed decisions and hold companies accountable for their CSR commitments.

Thirdly, for corporate managers and communication professionals, the study provides valuable insights into the long-term impacts of tone management. While manipulating the tone of disclosures may offer short-term benefits regarding stakeholder perception, it can lead to adverse outcomes for CSR performance. Companies are, therefore, encouraged to adopt a more transparent and authentic approach to their communications. Emphasising genuine CSR efforts and achievements, rather than crafting favourable narratives, can foster trust and credibility among stakeholders.

The implications of this research are far-reaching. The study advocates for enhanced guidelines that address tone management in corporate disclosures for regulatory bodies. For stakeholders, it underscores the importance of critical evaluation of corporate reports. It highlights the potential long-term benefits of transparency and authenticity in company communications.

The methodological innovation of this study, which incorporates vocabulary combinations alongside individual words to detect abnormal tones, represents a significant advancement in the field of CSR research. This approach allows for a more nuanced analysis of tone management and its effects. Future research can build on this methodology to explore other dimensions of corporate communication and their impacts on various aspects of corporate performance.

Regulators should consider introducing guidelines for evaluating tone in CSR disclosures to enhance transparency and accountability. Stakeholders, such as investors and analysts, could benefit from AI-based tools to assess tone manipulation in corporate reports. Companies should adopt balanced tone management practices to align their CSR disclosures with actual performance, fostering trust and long-term sustainability.

This study highlights the complex interplay between qualitative aspects of corporate disclosures and CSR performance. The findings demonstrate that abnormal tone in the Board of Directors' activity reports can negatively impact CSR performance, particularly in environmental and energy-related dimensions. These insights call for a more integrated approach to corporate reporting, where quantitative and qualitative aspects are carefully monitored.

As the corporate world continues to evolve in response to increasing demands for ethical and sustainable business practices, the findings of this study offer valuable guidance. By prioritising genuine and transparent disclosures, companies can better align their communications with their actual performance, fostering trust and credibility with stakeholders. Ultimately, this approach enhances CSR performance and contributes to the broader goal of sustainable and responsible business practices.

This study highlights the pivotal role of tone management in shaping CSR performance. Abnormal tone negatively impacts CSR outcomes, particularly in environmental and energy dimensions, and its effects persist into subsequent years. Enhanced transparency and authenticity in corporate communication are vital for fostering stakeholder trust and aligning disclosures with actual CSR performance.

Regulators should incorporate qualitative analysis into reporting standards, emphasising their role in CSR disclosures. Companies should adopt standardised frameworks to enhance the reliability of CSR reporting.

The study is limited to Tehran Stock Exchange-listed companies, which may affect generalisability. Future research could extend to other emerging and developed markets, exploring additional dimensions of tone management.

This research contributes to the ongoing dialogue on corporate transparency and accountability, emphasising the need for a holistic approach to corporate communication. It serves as a reminder that how companies convey their messages can significantly influence stakeholder perceptions and corporate behaviour, ultimately impacting long-term sustainability and corporate integrity. In addition, given the importance of qualitative features of textual disclosures (abnormal tone), it is suggested that standard-setters and legislators should focus on developing specific guidelines and frameworks for presenting qualitative reporting standards. It is also recommended that future research examine the role of other features of financial information presentation to align financial reporting with qualitative reporting in the relationship between abnormal tone and CSR, so that they can be used as strategies to avoid the negative consequences of tone management. Future research could explore tone management in CSR disclosures across cultural and regulatory contexts to identify patterns and best practices. Additionally, investigating the role of emerging technologies, such as AI and natural language processing, in enhancing the transparency of CSR reporting could offer valuable insights for improving corporate accountability.

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Appendix A. Variable Definitions

Variable	Definition
Dependent Variables	
CSR	The total CSR performance score is calculated as the ratio of disclosed items to total possible items (0–1).
ENVI	Environmental dimension score of CSR.
ENERGY	Energy dimension score of CSR.
CUSTOMER	Customer dimension score of CSR.
HUMAN	Human resources dimension score of CSR.

Variable	Definition
SERVICE	Service dimension score of CSR.
SOCIETY	Society dimension score of CSR.
Independent Variable	
ABTONE	An abnormal tone is measured as the residual from a regression of the disclosure tone on firm characteristics.
Control Variables	
CSR_t−1	Lagged value of the total CSR score.
GROWTH	Sales growth is calculated as (Sales_t − Sales_t−1)/Sales_t−1.
MB	The market-to-book ratio is calculated as the market value of equity/book value of equity.
LEV	Financial leverage is calculated as total liabilities/total assets.
ROA	Return on assets is calculated as net income/total assets.
SIZE	Firm size is calculated as the natural logarithm of the firm's market value.

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