Research Article

Multimodal Readability, Linguistic Complexity, and Governance Signals in Corporate Financial Disclosures: An Integrated Theoretical and Empirical Analysis

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ABSTRACT

Corporate financial disclosures represent one of the most critical communication channels between firms and their diverse stakeholders. Over the past several decades, research has increasingly demonstrated that financial reporting is not merely a neutral transmission of numerical facts but a complex linguistic, strategic, and governance-driven process. This study develops a comprehensive, theory-driven examination of readability, linguistic complexity, multimodal sentiment, and corporate governance mechanisms in financial disclosures, with particular emphasis on annual reports, integrated reports, earnings calls, and regulatory filings. Drawing strictly on established literature in accounting, finance, communication, and corporate governance, this article synthesizes insights from textual readability research, agency theory, voluntary disclosure theory, and emerging multimodal deep learning approaches to sentiment analysis.

Methodologically, the study adopts a qualitative, theory-anchored synthesis approach, explaining in detail how prior empirical strategies measure readability, sentiment, and disclosure quality, and how these methods conceptually align with governance and performance outcomes. The findings synthesized from prior studies consistently suggest that more readable and linguistically accessible disclosures are associated with lower agency costs, stronger governance mechanisms, more persistent earnings, and improved investor decision-making, particularly among less sophisticated investors. Conversely, excessive complexity, obfuscation, or strategic ambiguity often signals managerial opportunism, weak monitoring, or heightened information asymmetry.

The discussion elaborates theoretical implications for agency theory, signaling theory, and behavioral

finance, while also addressing counterarguments regarding managerial discretion and proprietary costs. Limitations of existing research are critically examined, including contextual dependencies, cross-country institutional differences, and the evolving nature of multimodal disclosures. The article concludes by outlining a forward-looking research agenda that emphasizes integrated governance–language models, cross-linguistic disclosure environments, and ethically grounded applications of artificial intelligence in financial communication analysis.

KEYWORDS

Financial disclosure readability, multimodal sentiment analysis, corporate governance, linguistic complexity, agency theory, investor behavior

INTRODUCTION

Corporate financial reporting occupies a central position in modern capital markets, serving as the primary mechanism through which firms communicate their economic performance, strategic intentions, and governance quality to investors and other stakeholders. Traditionally, accounting research treated disclosures as largely numerical representations of firm performance, assuming that rational market participants would process this information efficiently regardless of its linguistic form. However, an extensive body of research has increasingly challenged this assumption by demonstrating that the language, structure, and readability of disclosures significantly shape how information is interpreted, processed, and acted upon by users (Courtis &

Hassan, 2002; Li, 2008; Davis & Tama-Sweet, 2012).

The growing emphasis on narrative sections of annual reports, management discussion and analysis (MD&A), integrated reports, earnings press releases, and earnings calls has further highlighted the strategic role of language in financial communication. These narratives are not merely supplementary explanations of numbers; they are carefully crafted texts that reflect managerial incentives, governance constraints, and broader institutional contexts (Dyer et al., 2016; du Toit, 2017). At the same time, advances in computational linguistics and deep learning have enabled scholars to analyze sentiment, tone, and complexity across both written and spoken disclosures, ushering in a new era of multimodal disclosure analysis (Tailor & Kale, 2025).

Despite these advances, the literature remains fragmented. Readability studies often focus narrowly on textual complexity without fully integrating governance mechanisms or multimodal communication channels. Governance research, conversely, tends to emphasize structural mechanisms such as board composition, ownership structure, and audit quality while paying limited attention to how these mechanisms manifest in disclosure language (Fama & Jensen, 1983; Coles et al., 2001; Erhardt et al., 2003). Multimodal sentiment analysis, while methodologically sophisticated, is frequently disconnected from foundational theories of agency, disclosure, and investor behavior.

This article addresses these gaps by offering an integrated, theory-driven analysis of readability, linguistic complexity, multimodal sentiment, and

corporate governance in financial disclosures. By synthesizing insights from established empirical studies and theoretical frameworks, the article seeks to explain not only whether language matters, but why it matters, for whom it matters, and under what governance conditions it matters most.

The central problem motivating this research is the persistent information asymmetry between managers and external stakeholders. Agency theory posits that managers, acting as agents, may have incentives to withhold, distort, or obfuscate information to protect private benefits or mask poor performance (Fama & Jensen, 1983; De Angelo, 1981). Language becomes a powerful tool in this context, capable of subtly shaping perceptions without overtly violating reporting standards. Readability, therefore, is not a neutral stylistic choice but a strategic variable influenced by agency costs, governance strength, and investor sophistication (Cui, 2016; Dalwai et al., 2021).

The literature gap lies in the lack of a comprehensive framework that connects linguistic features of disclosures with governance mechanisms and emerging multimodal analytical techniques. While individual studies have examined bilingual reporting (Courtis & Hassan, 2002), analyst report readability (De Franco et al., 2015), integrated reporting clarity (du Toit, 2017), and multimodal sentiment in earnings calls (Tailor & Kale, 2025), few have attempted to unify these strands into a coherent theoretical narrative. This article responds to that need by systematically elaborating the conceptual linkages among these domains.

METHODOLOGY

The methodological approach adopted in this study is a comprehensive qualitative synthesis grounded in established empirical and theoretical research. Rather than introducing new datasets or statistical models, the study explicates, in detailed descriptive terms, how prior research operationalizes key constructs such as readability, linguistic complexity, sentiment, governance quality, and firm performance. This approach is particularly appropriate given the study's objective of theoretical integration and conceptual elaboration.

Readability in financial disclosures has traditionally been measured using linguistic indices that capture sentence length, word complexity, and syntactic structure. Studies such as Courtis and Hassan (2002) and de Souza et al. (2019) rely on established readability formulas to assess how easily investors can process narrative disclosures. These measures, while quantitative in nature, are conceptually grounded in cognitive processing theory, which posits that more complex texts impose higher cognitive costs on readers, potentially impairing comprehension and judgment.

Investor sophistication is typically inferred from proxies such as institutional ownership, analyst following, or market experience, as demonstrated by Cui (2016). Methodologically, this allows researchers to examine interaction effects between readability and user characteristics, highlighting that the impact of linguistic complexity is not uniform across all investors. Less sophisticated investors are more sensitive to readability, while more sophisticated users may partially overcome

linguistic barriers through expertise or alternative information sources.

Agency costs and governance mechanisms are operationalized through structural indicators such as board independence, ownership concentration, audit quality, and disclosure policies (Coles et al., 2001; Fama & Jensen, 1983; De Angelo, 1981). Studies linking these variables to disclosure readability, such as Dalwai et al. (2021), adopt regression-based frameworks to infer associations between governance quality and linguistic clarity. In this article, these methodological choices are interpreted conceptually, emphasizing how governance structures constrain or enable managerial discretion in disclosure practices.

Multimodal sentiment analysis represents a methodological evolution that extends beyond text to include vocal tone, speech patterns, and cross-document sentiment consistency. Tailor and Kale (2025) demonstrate how deep learning architectures can integrate textual sentiment from SEC filings with acoustic and semantic cues from earnings calls. While the technical details of neural networks are not reproduced here, the methodological significance lies in the ability to capture richer communicative signals that more closely resemble how human investors process information in real-world settings.

By synthesizing these methodological traditions, the study constructs a conceptual map linking measurement approaches to theoretical constructs. This synthesis highlights complementarities rather than methodological competition, arguing that readability indices, sentiment analysis, and governance metrics each capture distinct but interrelated dimensions of disclosure quality.

RESULTS

The synthesized findings across the referenced literature reveal several consistent patterns that illuminate the role of language and governance in financial disclosures. One of the most robust findings is the negative association between linguistic complexity and investor comprehension. Studies consistently show that less readable disclosures are associated with poorer investor performance judgments, particularly among less sophisticated users (Cui, 2016; Courtis & Hassan, 2002). This suggests that complexity functions as a barrier to effective communication rather than as a signal of superior information content.

Another key finding concerns the relationship between readability and firm performance. Research indicates that firms with more readable annual reports tend to exhibit stronger performance metrics and lower agency costs (Dalwai et al., 2021). This relationship can be interpreted as evidence that transparent communication aligns with better internal governance and more disciplined managerial behavior. Conversely, firms with weaker performance or higher agency conflicts often exhibit more complex and opaque disclosures, consistent with strategic obfuscation theories.

Analyst-focused studies further demonstrate that readability influences not only investors but also professional intermediaries. De Franco et al. (2015) find that more readable analyst reports enhance forecast accuracy and reduce dispersion, suggesting that clarity facilitates information

aggregation even among experts. This challenges the notion that sophisticated users are immune to linguistic effects.

Multimodal sentiment analysis adds another layer of insight. Findings synthesized from Tailor and Kale (2025) indicate that inconsistencies between the tone of earnings calls and the sentiment of written filings can signal higher risk or managerial opportunism. Investors appear sensitive not only to what is said, but how it is said across different channels. This reinforces the view that disclosure quality is multidimensional and cannot be fully captured by text alone.

Governance-related findings consistently show that stronger monitoring mechanisms are associated with clearer, more consistent disclosures. Board independence, audit quality, and ownership structures play a moderating role in shaping disclosure language (Coles et al., 2001; De Angelo, 1981; Ferraz et al., 2011). These results collectively suggest that language serves as an observable manifestation of otherwise latent governance qualities.

DISCUSSION

The integrated findings of this study have profound theoretical implications for accounting, finance, and corporate governance research. From an agency theory perspective, readability and linguistic clarity can be interpreted as governance outcomes that reflect the balance of power between managers and principals. When governance mechanisms are strong, managers face greater constraints on opportunistic behavior, leading to more transparent and accessible disclosures (Fama & Jensen, 1983). Language, in

this sense, becomes an endogenous outcome of governance quality rather than a purely stylistic choice.

Signaling theory further enriches this interpretation by suggesting that readable disclosures may function as credible signals of firm quality. Because producing clear and consistent disclosures requires internal discipline and coordination, firms with superior governance and performance are better positioned to send such signals credibly (Davis & Tama-Sweet, 2012). Poor-quality firms, by contrast, may resort to complexity and obfuscation, although such strategies risk being detected by sophisticated users and multimodal analytical tools.

Behavioral finance perspectives highlight the cognitive mechanisms through which readability affects decision-making. Complex language increases processing costs, potentially leading investors to rely on heuristics or to underreact to information (Cui, 2016). Multimodal sentiment cues, such as vocal tone in earnings calls, can amplify or mitigate these effects by triggering affective responses that shape judgment beyond rational analysis (Tailor & Kale, 2025).

Counterarguments must also be considered. Some scholars argue that complexity may reflect genuine business intricacy or regulatory requirements rather than intentional obfuscation (Dyer et al., 2016). From this perspective, overly simplistic disclosures could risk misrepresentation or loss of nuance. This article acknowledges this tension, emphasizing that the relationship between complexity and opportunism is probabilistic rather than deterministic. Contextual factors such as industry, regulatory environment, and firm size

play critical roles in shaping disclosure language (Cooke, 1992; Craswell & Taylor, 1992).

Limitations of the existing literature include a heavy reliance on English-language disclosures and developed market contexts, potentially limiting generalizability. Cross-linguistic studies, such as those on bilingual reporting, reveal that language effects may vary significantly across institutional environments (Courtis & Hassan, 2002). Additionally, the rapid evolution of multimodal communication poses methodological challenges, as traditional readability metrics may struggle to capture dynamic, spoken, or interactive disclosures.

Future research should pursue integrated models that explicitly link governance structures, linguistic strategies, and multimodal sentiment dynamics. Such research would benefit from cross-country comparative designs, longitudinal analyses of disclosure evolution, and ethical considerations surrounding the use of advanced analytical technologies.

CONCLUSION

This article has presented an extensive, theory-driven synthesis of research on readability, linguistic complexity, multimodal sentiment analysis, and corporate governance in financial disclosures. By integrating insights from diverse but related literatures, the study demonstrates that language is a central, not peripheral, component of financial reporting quality. Readability and clarity are deeply intertwined with governance mechanisms, agency costs, and investor behavior, shaping how information is processed and valued in capital markets.

The analysis underscores that modern financial disclosure must be understood as a multimodal, strategically governed communication process. As disclosure channels continue to evolve, the importance of integrating linguistic analysis with governance theory will only grow. Ultimately, fostering clearer, more transparent financial communication is not merely a technical challenge but a governance imperative with far-reaching implications for market efficiency and stakeholder trust.

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