



The Effect of Emotional Analysis of Financial Statements on Auditor's Opinion: Emphasizing the Role of Accounting Behavior and Auditor Feedback

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Abstract

The present study aims to examine the impact of emotional sentiment analysis of accounting financial statements on the type of auditor's opinion, as well as the mediating role of accounting behavior and auditor feedback in this relationship. The main motivation for this research stems from the fact that the tone and emotional content of financial reports can distort stakeholders' perceptions, conceal financial realities, and increase the likelihood of corporate scandals. The statistical population of the study included all companies listed on the Tehran Stock Exchange during the period 2014–2024, and a sample of 150 audited financial statements from private companies was selected through stratified random sampling. Research data were collected using a standardized questionnaire and content analysis of financial statement texts, and analyzed using structural equation modeling and EViews software. The findings indicate that the emotional tone of financial statements has a positive and significant effect on the auditor's opinion ($\beta = 0.64$, 99% confidence level). In other words, a stronger emotional tone increases the likelihood of a qualified or adverse audit report. Accounting behavior ($\beta = 0.41$) and auditor feedback ($\beta = 0.37$) both showed significant effects on the auditor's opinion. The interactive effect of emotional tone and auditor feedback was also positive and significant ($\beta = 0.22$), suggesting that auditor feedback moderates the intensity of the relationship between emotional tone and audit outcome and tends to amplify the main effect rather than reduce it. These results highlight the importance of controlling emotional biases in financial reporting and fostering a critical and professional interaction between accountants and auditors. Regulatory and professional bodies are recommended to enhance neutrality in preparing financial statements and strengthen effective dialogue between the parties involved in the auditing process through guidelines and educational programs.

Keywords: Sentiment Analysis, Accounting Financial Statements, Auditor's Opinion, Accounting Behavior, Auditor Feedback

JEL Classification: M41, M42, C88.

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INTRODUCTION

Financial statements are not merely a set of numerical data; they are also narrative documents that communicate a company's financial position, performance, and strategic intent through carefully chosen language. Tone, sentiment, and linguistic nuances embedded within these reports can subtly influence stakeholders' interpretations, sometimes even distorting perceptions of corporate health or concealing unfavorable realities. In accounting theory, financial reporting is presumed to be neutral, unbiased, and grounded entirely in verifiable evidence. However, in practice, human factors, managerial pressure, communication styles, and regulatory complexities often shape how these reports are composed. Recent developments in the intersection of behavioral accounting and natural language processing (NLP) have given rise to sentiment analysis methods that measure the positivity, negativity, or neutrality of financial narratives. International studies, mainly in English-speaking contexts, have demonstrated that sentiment-laden language in management commentary or footnotes correlates with market reactions, risk assessments, and even audit outcomes. Yet, research on sentiment effects in Persian-language financial reporting remains scarce, partly due to the complexity of Persian grammar, the frequent use of figurative language, and the absence of specialized lexical resources. Simultaneously, the role of auditors — professionals tasked with delivering an independent opinion on the fairness and accuracy of financial reporting — creates a unique point of interaction between linguistic presentation and professional judgment. While standards insist on objectivity, research in decision psychology confirms that even expert judgments may be influenced by non-numerical cues, including the tone of the text they evaluate. This study is motivated by the need to explore whether emotional tone in Persian-language financial statements influences the type of auditor's opinion issued, and whether this relationship is moderated or mediated by two key variables: accounting behavior and auditor feedback. The primary aim of this research is to investigate the causal and moderating dynamics between financial statement tone, auditor opinion type, and behavioral factors in the Iranian capital market context. The core research questions are:

1. Does the emotional tone — whether positive, negative, or neutral — of financial statements significantly influence the auditor's opinion?
2. Does accounting behavior (including earnings management practices and disclosure styles) alter the strength or direction of this effect?
3. Does auditor feedback during the audit process mediate or moderate the influence of tone on the audit opinion?

The study integrates concepts from Tone in Communication Theory (positioning language as a carrier of implicit bias), Cognitive Bias Theory (explaining potential subconscious influences on professional judgment), and Agency Theory (framing accounting behavior in the context of incentives and conflicts of interest). Emotional tone is positioned as the independent variable, auditor's opinion as the dependent variable, and accounting behavior and auditor feedback as mediators/moderators.

METHODOLOGY

The research is applied in purpose and descriptive–correlational in nature, conducted within a quantitative framework. A Structural Equation Modeling (SEM) approach was used to simultaneously estimate direct, indirect, and interaction effects. The statistical population encompassed all companies listed on the Tehran Stock Exchange between 2014 and 2024. From this, a sample of 150 privately-owned companies audited annual financial statements was selected using stratified random sampling. Selection criteria included consistent operation over at least five years, unaltered fiscal year-ends, and availability of complete Persian-language financial statements and audit reports.

1. Emotional Tone (LASM): Measured through customized sentiment analysis based on a hybrid Persian lexicon adapted from Loughran–McDonald, capturing frequencies and proportions of positive, negative, and neutral terms in both the management report and explanatory notes.

2. Accounting Behavior (BA): Assessed through discretionary accruals (Modified Jones Model) combined with qualitative disclosure indicators, enabling a dual coverage of quantitative and qualitative manipulation.
3. Auditor Feedback (FHA): Derived from audit report content, number of explanatory paragraphs, explicit recommendations, and documented correspondence where accessible.
4. Auditor's Opinion Type (NOH): Coded ordinally (1 = Unqualified, 2 = Qualified, 3 = Adverse, 4 = Disclaimer).

Financial reports were retrieved from the official Codal system, converted to UTF-8 text for preprocessing, cleaned of non-textual noise, and standardized for analysis. Numerical financial and auditing data were merged with sentiment analysis metrics and encoded variables. The combined dataset formed the input for SEM and auxiliary statistical tests, conducted using EViews for preliminary analysis and SmartPLS for model estimation. Descriptive statistics were computed to establish baseline characteristics. Normality was confirmed through Kolmogorov–Smirnov tests (all p-values > 0.05), supporting subsequent parametric modeling. Reliability was validated with Cronbach's alpha ($\alpha = 0.88$ for sentiment index) and test–retest stability for accounting behavior measures.

RESULTS

- The mean emotional tone score was 3.42/5, indicating a moderate-to-high tendency toward sentiment-rich language in reports.
- The mean auditor opinion score (coded ordinally) was 1.87, reflecting a prevalence of Qualified opinions.
- Accounting behavior averaged 3.55, suggesting significant use of flexible or opportunistic accounting practices.
- Auditor feedback averaged 3.28, showing moderate but inconsistent interaction between auditors and preparers.

The structural model exhibited excellent fit indices: CFI = 0.94, GFI = 0.92, RMSEA = 0.045, $\chi^2/df = 1.87$ — all within or exceeding accepted thresholds.

Hypothesis Testing

- Emotional tone significantly and positively influenced auditor opinion type ($\beta = 0.64$, $p < 0.01$), with stronger tone predicting more qualified/adverse outcomes.
- Accounting behavior exerted a positive, significant effect ($\beta = 0.41$, $p = 0.002$).
- Auditor feedback also had a positive effect ($\beta = 0.37$, $p = 0.004$).
- The interaction term LASM \times FHA was significant ($\beta = 0.22$, $p = 0.017$), indicating that auditor feedback moderated but did not fully neutralize the tone effect.

These findings confirm that linguistic framing in financial statements is not merely stylistic — it carries measurable consequences for audit outcomes. Excessively positive or negative tones act as implicit signals, potentially alerting auditors to heightened risk, thereby nudging their opinions toward greater qualification. Furthermore, behavioral and interactive factors either amplify or buffer this effect.

CONCLUSION

The results parallel international studies in English contexts (e.g., [Repenning et al.](#), [Li et al.](#), [Xiao et al.](#)), confirming cross-linguistic consistency in tone–judgment effects while highlighting unique challenges in Persian NLP applications — such as morphological complexity and polysemy. Accounting behavior can moderate the informational impact of tone. When strong, objective evidence (either of manipulation or quality) is present, tone signals lose relative weight. Conversely, in ambiguous cases, tone salience increases. Regular, explicit auditor feedback appears to counteract emotional tone bias, suggesting a procedural safeguard for objectivity. However, this effect is partial, implying combined strategies are needed.

Practical Implications

- For Regulators: Introduce disclosure guidelines that set boundaries for tonal exaggeration in narrative sections.
- For Audit Firms: Integrate tone analysis into risk assessment and staff training, enhancing sensitivity to linguistic cues.
- For Investors/Analysts: Employ sentiment analysis tools to detect narrative bias, supplementing financial ratio analysis.

Limitations

- Complexity and cultural specificity of Persian language sentiment detection.
- Partial access to audit correspondence.
- Time-bound to a single decade; economic shifts beyond this period are unexamined.
- Uncontrolled macroeconomic shocks possibly influencing tone or opinion.

Directions for Future Research

- Extend to sector-specific analyses (e.g., banking, insurance).
- Integrate multimodal sentiment (text, speech, body language).
- Develop deep learning models adapted to Persian semantics.
- Study organizational culture as a determinant of reporting tone.

The study establishes that the emotional tone of Persian financial statements influences auditor opinions in Iran's capital market, even after accounting for behavioral and feedback factors. Tone operates as a latent qualitative signal within the audit process, reinforcing the need for a balanced, neutral reporting style and enhanced auditor preparedness to recognize and adjust for linguistic bias.

Contribution of Authors

All stages of the research, from ideation and design to data collection, analysis, and final writing of the article, were carried out by the author.

Ethical Approval

This research was conducted in full compliance with the principles and standards of ethical research. All data used were extracted from reliable sources and published financial reports of companies and were used solely for scientific and research purposes. The identities of companies and individuals involved in the data collection process remained completely confidential and the results were presented without any manipulation or bias. In the research process, all participants (including managers and experts who were present in the interviews) were aware of the purpose of the research and participated in the study with informed consent.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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