Investigating Earnings Management on the Readability of Financially Troubled Indian Firms

Sweta Tiwari and Chanchal Chatterjee*

ABSTRACT

Manuscript type: Research paper
Research aims: The present study explores the impact of earnings management and ownership concentration on readability of annual reports of the financial statement of distressed Indian firms.
Design/Methodology/Approach: The study uses multiple regression for analysis on a sample of 545 Management Discussion and Analysis sections of the annual report of 208 Indian financially distressed publicly traded firms for the period 2014 - 2021.
Research findings: The present study reports that highly distressed Indian firms produce less readable financial disclosure.
Theoretical contribution/Originality: To the best of the authors' knowledge, this is the first study to examine the effect of earnings management and ownership pattern on the readability of financial disclosures of financially distressed Indian firms.
Practitioner/Policy implication: The findings of the study have significant implications for investors, regulators and policymakers.

Keywords: Earnings Management, Financial Distress, Indian stock market, Ownership concentration, Readability
JEL Classification: M4, M40, M41, M48

* Corresponding author. Chanchal Chatterjee is a Professor (Finance) at the International Management Institute, Kolkata 2/4c Judges Court Road, Kolkata-700027, India. E-mail: c.chatterjee@imi-k.edu.in.
Sweta Tiwari is an Assistant Professor (Finance and Accountancy) at Praxis Business School, Bakrahat Road, P.O. Rasapunja South 24 Parganas, West Bengal Kolkata-700104, India. E-mail: sweta.tiwari@imi-k.edu.in

https://doi.org/10.22452/ajba.vol17no2.1

"Without proper disclosure, investors would be unable to make informed decisions. They would not know about the financial condition of the company they are investing in. Nor would they know about how the company operates, who its board members are or what business, operational or financial risks the company faces, let alone may face in the future."

Mary Jo White (31st US Securities and Exchange Commission Chairperson)[1]

1. Introduction

The extant literature highlights that managers' financial reporting can be influenced by various incentives and circumstances, such as meeting earnings forecasts or avoiding debt covenant violations (Charitou et al., 2011). Especially in times of financial distress, managers face pressure to enhance firm earnings to mitigate negative outcomes like increased capital costs and bankruptcy risks (Habib et al., 2020; Su, 2016). Consequently, managers of troubled firms may resort to earnings management (EM) tactics to navigate challenges and prevent adverse repercussions from stakeholders (Campa & Camacho-Miñano, 2015; Zang, 2011). Earnings management (EM) in troubled firms is mainly driven by managers' efforts to help failing firms survive (Graham et al., 2005). Incidence of corporate failure is pervasive worldwide, such as Enron, Adelphia in the US or the Satyam computer scam in India. This phenomenon is particularly notable in emerging economies with distinct institutional structures, characterised by lower levels of shareholder monitoring (Viana Junior et al., 2019) and higher concentrations of family-based ownership. This is also to note that there is an information perspective associated with EM, too. This perspective, brought in by Holthausen and Leftwich (1983), suggests that managers manage earnings to evince investors on their private expectations about firms' future cash flows. Hence, not all actions pertaining to EM are bad or illegal/unethical.

Financial statements serve as crucial communication tools for corporations, whether they are in good health or facing distress, allowing them to engage with various stakeholders such as lenders, suppliers, investors, and regulators (Davern et al., 2019). While annual reports facilitate activities like borrowing from banks or negotiating credit terms with suppliers, managers often strategically manipulate textual narratives to present information in a favourable light, potentially compromising accuracy. Even prior research suggests that the information percolating from the statement of disclosure might not be completely credible (Hutton et al., 2003). Consequently, regulators and investors should pay close attention to

linguistic features, such as the readability of financial statements, to ensure a more accurate understanding of the disclosed information.

In assessing the readability of financial disclosure, previous research has utilised various readability measures, focusing on the reader's ability to accurately understand the communicated message. The readability of text refers to the ability of a reader to accurately comprehend the message communicated via text. Higher readability is essential as it facilitates comprehension for layperson readers, aiding in the interpretation of textual content (Strampelli, 2018). Additionally, textual data can effectively convey future expectations, strategies, risks, and other possibilities for a firm (Kloptchenko et al., 2004; Magnusson et al., 2005), complementing quantitative information in bankruptcy prediction studies as emphasised by researchers in the field.

In this study, we aim to explore whether financially distressed Indian firms engaged in earnings management tend to produce financial statements that are either complex or less readable. Additionally, we seek to determine if there is a variance in the readability of financial statements between highly distressed and less distressed firms. Given the prevalent concentrated ownership structure in Indian firms, predominantly controlled by family business houses, we also intend to investigate whether ownership patterns exert any influence on the readability of the sampled firms' financial statements.

In our study, we examine 545 Management Discussion and Analysis (MDA) sections extracted from the annual reports of 208 financially distressed Indian firms listed on the NSE.[2] Our analysis reveals a significant correlation between the readability of MDAs and the level of financial distress experienced by these firms. We utilise two readability measures, *FOG* and *SMOG*, which serve as inverse proxies of readability. While *FOG* has been extensively employed in previous earnings management studies, we introduce *SMOG* as an alternative measure to ensure robustness in our findings. To assess financial distress, we employ both accounting-based measures such as Z-Score (Altman, 1968) and market-based measures like Merton's Distance to default (DD) as proposed by Byström (2006). Using multiple measures of financial distress allows us to explore whether choice of accounting or market-based measure of distress explains earnings management differently. Further, it also checks the robustness of our results. We hypothesise that managers and controlling shareholders of financially distressed firms are motivated to manipulate reported earnings to obscure the true financial

condition from external stakeholders. Our study aligns with the findings of Li (2008), supporting the notion that underperforming firms tend to present less readable financial reports.

This study contributes significantly by extending the current understanding of readability within the context of financially distressed firms in India. While prior research on narrative disclosure and financial distress has predominantly focused on firms from the US, UK, and Australia (e.g., Smith et al., 2011), the examination of the impact of earnings management and financial distress levels on the readability of annual reports remains largely unexplored in the Indian context, characterised by unique institutional settings. Notably, a recent study by Arora and Chauhan (2021) touched upon this aspect, employing the FOG index as a readability measure and highlighting that financially distressed firms engaging in earnings management tend to produce complex financial disclosures. However, our study builds upon this by incorporating both market-based and accounting-based distress measures (DD and Z-score) and introducing an additional readability measure (SMOG) to ensure the robustness of our findings. There is a clear need for further empirical investigations to elucidate how financial distress influences the readability of financial disclosure within the framework of an emerging economy like India.

In addition to the expanding knowledge on readability in the context of distressed Indian firms, our study offers novel insights for regulators by examining the relationship between textual readability and ownership structures prevalent in Indian companies, notably characterised by concentrated family ownership. This aspect holds significant relevance given prior findings suggesting that concentrated ownership may foster earnings management activities (Halioui & Jerbi, 2012). Moreover, evidence indicates that minority shareholders within family-owned firms may have limited influence in compelling management to provide necessary information, potentially leading to poorer quality disclosures (Anderson et al., 2017). Therefore, our study delves into the influence of ownership patterns on the readability of the MDA sections of financially distressed Indian firms, shedding light on an important aspect for regulatory consideration.

Our study further contributes by examining both accrual (AEM) and real activity-earnings management (REM), thus providing a comprehensive view of earnings management practices. While AEM deals with managing earnings by managing accruals of a firm, REM focuses on managing earnings by manipulating its operating activities. Particularly, in AEM, discretionary accruals are computed

as a proxy of earnings management. Here, we adopt Raman and Shahrur's (2008) model of discretionary accrual to measure the extent of EM. On the other hand, REM is measured as discretionary expenses based on firm-level research and development (R&D) and advertising expenses. By incorporating REM alongside AEM, we aim to bolster the reliability and depth of our analysis. Our results indicate that financially distressed firms engage in earnings management through both AEM and REM strategies, resulting in the production of less readable MDA sections in their financial reports. This insight underscores the multifaceted nature of earnings management tactics employed by troubled firms and their implications for the readability of financial disclosures.

In addition to the aforementioned contributions, our study reveals a noteworthy finding regarding the impact of financial distress intensity on the readability of financial disclosure. Specifically, we observe that low-distressed firms employing both AEM and REM strategies tend to produce financial disclosures that are less readable. This insight highlights the nuanced relationship between financial distress levels and the readability of financial disclosure, offering valuable implications for understanding the dynamics of disclosure practices in the context of distressed firms.

The rest of the paper is organised as follows: Section 2 reviews the relevant literature and develops testable hypotheses. Section 3 outlines the research design. Section 4 presents the empirical findings, Section 5 tests the robustness of the findings, and finally, Section 6 offers the conclusion.

2. Literature Review and Hypothesis Development

2.1 Financial Distress and earnings management

Financial distress, defined as a company's inability to meet its debt obligations, poses significant concerns for stakeholders including investors, creditors, managers, accountants, and employees (Howe & Houston, 2016). While a considerable body of research has explored the influence of financial distress on earnings management in both emerging (e.g., Li et al., 2020; Du & Lai, 2018; Agrawal & Chatterjee, 2015) and developed economies (e.g., Campa, 2019; Campa & Camacho-Miñano, 2015; Rosner, 2003), the focus has predominantly been on the latter. Existing studies focusing on financially distressed firms, highlight the incentive of managers to manage earnings (Boateng, 2011) as well as the cash flow (Lee, 2012). Moreover, they underscore the incentives for managers to manipulate earnings, including mitigating financing difficulties, thwarting

takeover attempts (Frost, 1997), and averting insolvency risks. Firms often manipulate earnings to avoid violation of debt covenants (DeFond & Jiambalvo, 1994; Dichev & Skinner, 2002; Jaggi & Lee, 2002). Moreover, managers may manipulate earnings to project an optimistic outlook during challenging times (Rogers & Stocken, 2005), aiming to secure their positions and restore the firm's financial health. The complexities arising from financial troubles may lead managers to resort to earnings management as a means to navigate challenges with creditors, suppliers, labour, and customers.

The literature on the relationship between financial distress and earnings management offers diverse insights. While Jaggi and Lee (2002) propose that the severity of financial distress influences managers' choice between income-decreasing and income-increasing discretionary accruals, Habib et al. (2013) find that distressed firms tend to engage more in income-decreasing earnings management activities compared to healthy firms. Similarly, Jacoby et al. (2019) focusing on Chinese listed firms in financial distress note an inclination towards small positive earnings management to mitigate the adverse effects of distress. Sweeney (1994) provides evidence of income-increasing earnings management among firms approaching default, while DeAngelo et al. (1994) identify income-decreasing earnings management techniques employed by agents of financially troubled firms to streamline performance. More recently, Habib et al. (2020) highlights that financial reports from distressed firms tend to exhibit poor quality, underscoring the complexities and nuances of earnings management practices in the context of financial distress.

2.2 *Readability and earnings management*

Earnings management may result in the manipulation of financial reporting, which in turn could mislead the users of financial reports. Earnings management as per (Schipper, 1989) refers to the management's action to gain private benefits by interfering in the corporate financial statements. Earlier studies on earnings management suggest that when firms perform well, management tends to readily and willingly disclose information (Lang & Lundholm, 1996; Schrand & Walther, 2000). However, recent findings by Lo et al. (2017) focusing on the MDA section of annual reports provide evidence in favour of management obfuscation, which contributes to the complexity of disclosures. Managers utilise this medium not only to inform stakeholders, such as investors, about business performance and financial standing but also to communicate uncertainties and foreseeable developments faced by the business.

Several theories and hypotheses shed light on managers' motivations and strategies for employing complex reporting procedures. Courtis (2004) argues that management often resorts to strategic writing to obscure the intended message, a phenomenon he terms "obfuscation," which serves as a barrier to effective communication between management and investors. This supports the "management obfuscation hypothesis," suggesting that complex readability tactics make it difficult for investors to process negative news, thereby dampening negative reactions in the financial market. Similarly, Bloomfield (2002) finds that more complex and lengthy disclosures result in reduced trading activity, as the high cost of extracting information from such disclosures dissuades investors. Thus, managers may be incentivised to obfuscate information, especially when the firm performs poorly. Li (2008) corroborates the "incomplete revelation hypothesis" by demonstrating that loss-making companies with less persistent earnings tend to use complex narratives in the MDA section to conceal poor performance, indicating a negative relationship between readability and earnings level. Building upon Li's findings, Bloomfield (2008) proposes two potential explanations supported by obfuscation and ontological reasoning. Obfuscation suggests that managers use complex text to mask negative performance, while ontology suggests that conveying negative news inherently poses challenges.

Exploring the MDA segment of annual reports, Lo et al. (2017) demonstrate that obfuscation contributes to the increased complexity of financial disclosures, particularly for firms engaged in earnings management. Employing the primary measure of readability established by Li (2008), the authors reveal that firms with a stronger incentive to manage results to surpass previous year earnings tend to disclose information that is less readable. It's worth noting that both of these empirical studies concentrate on the US market, examining narrative accounting disclosures presented in English.

Studies on earnings management of financially distressed firms and the readability of annual reports in an emerging nation like India are few. It is also a fact that emerging nations have issues which are different from their developed counterparts.

2.3 Ownership concentration and earnings management

Family-held businesses are often guided by a unique set of aspirations and goals that extend beyond economic objectives, such as a commitment to long-term continuity and succession planning (Berrone et al., 2012). The emotional attachment of family members

to the business tends to be strong, leading to a preference for long-term investment strategies over short-term gains (Gomez-Mejia et al., 2011). However, studies also caution that an excessive presence of family members within the business can potentially hinder its survival prospects (Le Breton-Miller et al., 2011). With promoters holding significant stakes in ownership, decision-making power is concentrated, influencing the governance dynamics of family businesses (Muttakin and Subramaniam, 2015). In Indian family businesses, marginal stockholders often lack the influence to demand relevant information from managers, enabling family managers to potentially provide low-quality disclosure reports (Anderson et al., 2017). Moreover, studies indicate that firms with highly concentrated ownership tend to exhibit lower levels of voluntary disclosure (Mohd Ghazali, 2007), with controlling owners having little incentive to disclose information as they can access necessary details and effectively monitor managerial actions (Khan et al., 2013). Consequently, there may be limited pressure to disclose information voluntarily in such firms.

Indeed, emerging nations like India face distinct challenges, largely stemming from differences in ownership patterns. With the majority of Indian companies owned and controlled by family business houses, where promoters often hold top management positions, the dynamics of agency conflicts are unique (Chakrabarty et al., 2018). The primary agency conflict in India typically arises between majority shareholders, who wield significant influence over management decisions, and minority shareholders who may have limited legal protection (La Porta et al., 2000). This ownership structure can impede efficient functioning and potentially lead to the expropriation of minority stakeholders by controlling majority shareholders (Sarkar, 2010). Given the prevalence of agency conflicts, it is expected that controlling majority shareholders would engage in earnings management practices. Bhattacharya et al. (2003) suggests that earnings manipulation, termed as earnings opacity, is more pronounced in emerging nations compared to developed ones, with Indian corporate financial disclosures exhibiting higher levels of opacity relative to their American counterparts.

Prior studies present mixed findings regarding the relationship between ownership concentration and earnings management. Halioui and Jerbi (2012) and Aharony et al. (2000) observe a positive association between ownership concentration and earnings management, suggesting that firms with higher ownership concentration are more likely to engage in earnings management

practices. On the other hand, ownership concentration has been found to be positively associated with the risk of financial distress (Donker et al., 2009; Mangena & Chamisa, 2008). However, there are also studies suggesting a negative relationship between concentrated ownership and financial distress (AlHares, 2020; Claessens et al., 2002), implying that firms with higher ownership concentration may have lower likelihoods of experiencing financial distress. These conflicting findings underscore the complex nature of the relationship between ownership concentration, earnings management, and financial distress, suggesting that additional factors may influence these dynamics in different contexts.

2.4 Readability and financial distress

Indeed, the relationship between readability and financial distress is relatively understudied in the literature. While some studies have examined specific sections of annual reports such as the letter to shareholders (Hadro et al., 2017) or the Chairman's narrative (e.g., Smith et al., 2011), there remains a limited understanding of how overall readability of financial disclosures relates to financial distress. Prior research suggests that companies experiencing poor performance may attempt to conceal or downplay negative information while emphasising positive news, potentially conveying misleading content to users of annual reports (Brennan et al., 2009). This indicates a need for further exploration into the association between readability and financial distress, considering the broader context of corporate disclosure practices and their implications for stakeholders.

Indeed, the MDA section has received relatively limited attention in prior studies, despite being a crucial source of information for stakeholders. According to Beller (2003), MDA serves as the primary reference point for stakeholders seeking to understand the causes of financial distress and the strategies firms intend to pursue for recovery. In the context of financially troubled firms, management may be more inclined to provide positive forward-looking news in disclosures to mitigate potential negative impacts on investors. Recent findings by Gianfelici et al. (2021), examining distressed Italian companies, suggest that the readability of disclosure from defaulting firms tends to be low. Moreover, evidence suggests that the health of an entity influences the reliability and clarity of financial statements (e.g., Merkl-Davies and Brennan, 2007), emphasising the importance of considering the readability of financial disclosures in assessing the financial condition of firms, particularly those facing distress.

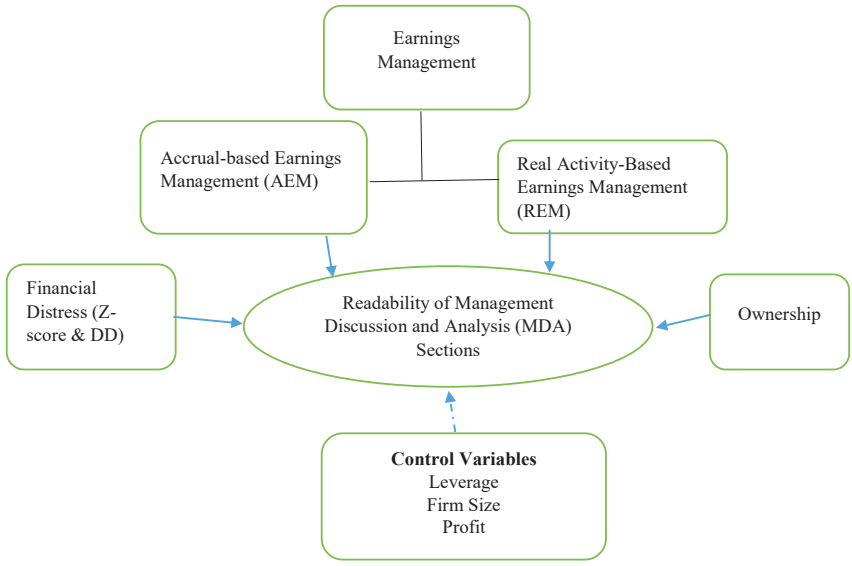
Based on the above discussions, we form the following hypothesis:

H_1: Indian distressed firms, if they manage their earnings, provide complex MDA.
H_2: Indian distressed firms, with concentrated ownership, disclose less readable text.
H_3: Indian distressed firms, with higher level of distress, disclose less readable text.

3. Research Design

Figure 1 provides the schematic framework of our study. This section first describes the data used to create the supportive variables mentioned in the framework. Next, we proceed with the methodology used in the study.

Figure 1: Framework of Study



3.1 Data and methodology

3.1.1 Data

This paper investigates the impact of earnings management on the readability of financially distressed firms in India. Data on distressed firms were collected using ratings provided by four major credit rating agencies in India: CRISIL Limited, ICRA Limited, Fitch Ratings India Pvt Limited, and CARE Limited.[3] Firms with a default on repaying debt obligations were assigned a "D" rating by these

agencies and were considered financially distressed (Agarwal and Chatterjee, 2015). Financial firms such as utilities, insurance, banks, and investment funds were excluded from the sample due to their specialized accounting and operating structures. The study included 208 non-financial firms across 20 industry sectors, identified using the 2-digit NIC industry classification, for the period 2014 to 2021. Each firm was included in the sample for the years in which they were rated as "D", allowing for the possibility of firms appearing in multiple years within the study period. Cross-sectional regression analysis was conducted for each default occurrence, following the methodology of Tiwari and Chatterjee (2022). Data on credit ratings and MDA reports were sourced from the Prowess database maintained by the Centre for Monitoring Indian Economy (CMIE), while financial data were obtained from WRDS and Compustat. Definitions of variables used in the analysis are provided in Appendix 1.

3.2 Methodology

3.2.1 Readability Measures

We employ the Fog Index and Smog Index to compute readability.

1) The Gunning Fog Index (Gunning, 1952) is computed as:

$$FOG = 0.4 \times (\textit{average number of words per sentence} + \textit{percentage of complex words})$$

Where the words containing three or more syllables are identified as complex words. Based on the reading ease, the index identifies the readability of text as follows: 8-10 (very easy); 10-12 (acceptable); 12-14 (ideal); 14-18 (difficult); Fog ≥ 18 (unreadable).

2) The Smog index (McLaughlin, 1969) is derived as:

$$SMOG = 3.1291 + (1.043 \times \sqrt{number\ of\ complex\ words\ \times \frac{30}{number\ of\ sentences}})$$

Where the words containing three or more syllables are identified as complex words. The following score range in this index represents the level of education required to comprehend a text: 13-16 (college); 17-18 (graduate training level); Smog ≥ 19 (post-graduate level) (DuBay, 2007).

3.2.2 Earnings management proxies:

3.2.2.1 Accrual earnings management

Discretionary accrual (DA) is a widely used measure of earnings management (Dechow et al., 1995). We measure earnings management using the discretionary accrual model proposed by Raman and Shahrur (2008). The study includes the absolute value of DA to comprehend the magnitude of firms' earnings management (Bergstresser & Philippon, 2006). The model is expressed as

$$TotAccr_t/TA_{t-1} = \alpha_0 + \alpha_1\,(1/TA_{t-1}) + \alpha_2(\Delta\, Re\, v_t/TA_{t-1}) + \alpha_3(PPE_t/TA_{t-1}) + \alpha_4(ROA_{t-1}) + \alpha_5(MTB_t) + e_t$$

where $TotAccr_t$ is total operating accruals, $\Delta\ Rev_t$ is the change in revenues from the previous year, PPE_t refers to the gross value of property, plant, and equipment. $TA_{t\text{-}1}$ refers to total assets at the end *t*-1 year, $ROA_{t\text{-}1}$ is the return on assets at the end of year *t*-1 and MTB_t is the market-to-book ratio. The residual from the regression result, e_t is the proxy for discretionary earnings management.

3.2.3 Financial distress measures

In our analysis of financial distress, we utilise both accounting-based and market-based measures. The accounting-based measure is Altman's "Z-score",[4] originally developed by Altman (1968), which incorporates five weighted financial ratios. This measure has been widely employed in previous studies as a reliable indicator of financial distress (Bugeja, 2015). Additionally, we incorporate the market-based model of distance-to-default (DD) proposed by Merton (1974),[5] which provides a volatility-adjusted measure of leverage. By integrating these measures, we aim to comprehensively assess the financial distress levels of the firms in our sample, leveraging both accounting and market perspectives.

[For more expositions on accounting-based and market-based models, see, among other sources, (Agarwal & Taffler, 2008; Pozzoli & Paolone, 2017)]. Firms with a Z-score greater than 2.99 signifies "*non-bankrupt*" while firms with a Z-score below 1.81 implies that the firm is likely to go "*bankrupt*" in the following two years and we use the estimate as the financial distress score. For Z-scores lying between the values of 1.81 and 2.99, that indicates that the firm lies in a grey zone. Regression equation (1) to (4) adopts the actual Altman's Z-score (Z-score) and distance-to-default (DD) values. Further,

following Agrawal and Chatterjee (2015), we form two dummy variables for gauging the level of distress in equations (7) to (10). A firm is considered to be low on financial distress when their Z-score and distance-to-default value is higher than their corresponding median values for the sample. These firms which scores are over the median score are assigned values 1 and 0 otherwise.

3.2.4 Estimation models

To test whether financially distressed firms that manage earnings are likely to provide complex MDA, we use the following regression equations (1-4)

Model 1

$$FOG = \beta_0 + \beta_1.EM + \beta_2.DD + \sum \beta_j.Control_j + \varepsilon \quad (1)$$

Model 2

$$SMOG = \beta_0 + \beta_1.EM + \beta_2.DD + \sum \beta_j.Control_j + \varepsilon \quad (2)$$

Model 3

$$FOG = \beta_0 + \beta_1.EM + \beta_2.Z - score + \sum \beta_j.Control_j + \varepsilon \quad (3)$$

Model 4

$$SMOG = \beta_0 + \beta_1.EM + \beta_2.Z - score + \sum \beta_j.Control_j + \varepsilon \quad (4)$$

Further, to determine whether *financially distressed firms with concentrated ownership are likely to provide less readable text*, we employ the regression equations (5-6).

Model 5

$$FOG = \beta_0 + \beta_1.EM + \beta_2.Ownership + \sum \beta_j.Control_j + \varepsilon \quad (5)$$

Model 6

$$SMOG = \beta_0 + \beta_1.EM + \beta_2.Ownership + \sum \beta_j.Control_j + \varepsilon \quad (6)$$

Lastly, to test whether *high-distressed firms are more likely to have less readable disclosure compared to low-distressed firms*, we include equations (7-10).

Model 7

$$FOG = \beta_0 + \beta_1.EM + \beta_2.Z - score(Dummy) + \beta_3.Ownership + \sum \beta_j.Control_j + \varepsilon \quad (7)$$

Model 8

$$SMOG = \beta_0 + \beta_1.EM + \beta_2.Z - score(Dummy) + \beta_3.Ownership + \sum \beta_j.Control_j + \varepsilon \quad (8)$$

Model 9

$$FOG = \beta_0 + \beta_1.EM + \beta_2.DD\ (Dummy) + \beta_3.Ownership + \sum \beta_j.Control_j + \varepsilon \quad (9)$$

Model 10

$$SMOG = \beta_0 + \beta_1.EM + \beta_2.DD\ (Dummy) + \beta_3.Ownership + \sum \beta_j.Control_j + \varepsilon \quad (10)$$

where *EM* is the proxy measure for earnings management. "FOG" and "SMOG" as the "readability" proxy. FOG and SMOG. Financial distress measures include Z-score and DD. In models 7 and 8 we consider the Z-score dummy and in models 9 and 10, we use the DD dummy to capture the intensity of financial distress.

3.2.5 Control variables and the moderator

We include a set of control variables in our regression equation.

A firm's financial distress can be well explained by its financial leverage (Kim and Yoon, 2008). It is computed as the ratio of total borrowings to total assets. Leverage is likely to impact the degree of earnings management. Prior studies find that a highly leveraged firm is more likely to provide complex annual statements and engage in a high level of earnings management to cover up for debt covenant violations (DeFond & Park, 1997). We also control for firm size (Size). Larger firms are likely to indulge in a high level of earnings management (Gong et al., 2013). It is calculated as the natural log of total assets. Ghazali et al. (2015) suggest that profit is a proxy for opportunistic behaviour. Profitability is measured as Net Income scaled by total assets. Hence, Profitability is included to capture the fact that the default risk is relatively high for negative or low-profit firms. We also include ownership as a moderating variable, as it could influence the relation between earnings management and readability in financially troubled firms. Following (Gul et al., 2010), we calculate ownership concentration (Ownership). It is a dummy binary variable, where a promoter holding higher than 50% is given a value of 1 and 0 otherwise. The definitions of all the variables are listed in Appendix 1.

4. Results and Analysis

4.1 Descriptive statistics

Table 1 presents the sample statistics of the variables. The mean (median) of the Fog index and Smog index is 16.422 (16.015) and 14.343 (14.400), respectively, with standard deviations of 4.1 and 1.432, indicating the reading difficulty associated with the readability of the Management Discussion and Analysis (MDA) segment of the financial report. The financial distress score (measured by Z-score and DD) has an average of 0.280 and 2.08, respectively. The mean (median) value of discretionary accruals (DA) is 0.086 (0.048), suggesting that, on average, sample firms engage in upward-biased earnings management. A notable variance is observed in profitability, with the maximum value reported as 3.535 and the minimum as -56.985, alongside a high standard deviation of 10.078. The maximum leverage reported is 1.313, while the minimum leverage is 0.001, indicating a wide range of debt levels across the sample. Furthermore, firm size exhibits significant variance, with the minimum value reported as 6.259 and the maximum value indicating the inclusion of firms of various sizes. On average, promoter holding stands at 60%, suggesting that the sample firms are characterized by concentrated ownership dominated by promoters.

Table 1: Sample statistics summary

Variable	Mean	Median	Std. Dev	Min	Max
FOG	16.422	16.015	4.1	11.11	24.25
SMOG	14.343	14.400	1.432	10.76	18.11
DD	2.08	1.76	1.68	0.249	12.12
Z-score	0.280	0.431	1.290	-2.877	1.776
DA	0.086	0.048	0.113	0.001	0.822
Leverage	0.368	0.250	0.321	0.001	1.313
Firm size	8.258	8.075	1.076	6.259	11.333
Profitability	-8.778	-2.878	10.078	-56.985	3.535
Ownership	0.6	1	0.489	0	1

The table summarises the mean, median, percentile 25th, percentile 75th and standard deviation for the entire sample.
Source: Authors'.

Table 2 presents the correlation matrix. A significant correlation coefficient of 0.949 between FOG and SMOG persists, indicating a high level of correlation between these two measures of readability. Consequently, they are used separately in the regression models to

avoid multicollinearity issues. The correlation coefficients among other pairs of variables are lower than 0.50, suggesting no serious multicollinearity problem among the variables included in the analysis.

Table 2: Correlation matrix

	1	2	3	4	5	6	7	8	9
FOG	1								
SMOG	0.949*	1							
DA	0.194**	0.204***	1						
Z-score	-0.190*	-0.181*	-0.169	1					
DD	-0.204*	-0.195*	-0.026	0.343***	1				
Leverage	0.076	0.038	-0.054	-0.421***	-0.145	1			
Firm size	-0.113	-0.168	-0.123	-0.039	-0.051	0.137	1		
Profitability	0.062	0.100	0.044	0.432***	0.118	-0.448***	0.067	1	
Ownership	-0.173*	-0.133	-0.01	-0.011	-0.008	0.159	-0.037	0.039	1

*, **, *** denote a two-tailed p-value of < 0.10, 0.05, and 0.01, respectively.
Source: Authors'.

Table 3 reports the Variance Inflation Factors (VIF) for the independent variables included in the study. The VIF values range from 1.080 to 2.25, all of which are lower than the benchmark value of 4 suggested by O'Brien (2007). This indicates that the variables do not exhibit serious multicollinearity issues, as none of the VIF values exceed the threshold. Therefore, the regression analysis is not significantly impacted by multicollinearity concerns.

Table 3: Variance inflation factor

Z-score	DD	DA	Leverage	Firm size	Profitability	Ownership
2.25	1.36	1.259	1.328	1.080	1.230	1.090

Source: Authors'.

4.2 Regression Analysis

In Table 4, models 1 and 2 considers DD along with DA and control variables. FOG is the readability measure in model 1, whereas SMOG is included in model 2. We find that DD is negative and significantly influences both the readability measures. Thus, with an increase in financial distress, the text of financial disclosure becomes less readable or complex. Further, as the profitability for the current year

improves, the readability of the sample firm improves by exhibiting a more readable report (Arora and Chauhan, 2021).

Models 3 and 4 in Table 4, adopts the alternate distress measure Z-score along with DA and control variables. Model 3 and 4 includes FOG and SMOG respectively as the dependent variables. The results corroborate the findings that financially distressed firms have a higher incentive to obfuscate poor performance by publishing less readable texts for the stakeholders. Following (Bloomfield, 2008), we observe that defaulting firms are reportedly linked to less readable documents and are more likely to conceal relevant information (BenYoussef & Khan, 2017).

Thus, the result is also in tandem with prior findings suggesting financial reports of poor-performing firms are difficult to decipher (Li, 2008). Furthermore, distressed firms incentivise managers to manage earnings (Li et al., 2020; Saleh & Ahmed, 2005). Thus, it fully supports hypothesis H_1 of our study.

Table 4: Effect of earnings management (DA) on the readability of financial distressed firms

Variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*
	FOG	**SMOG**	**FOG**	**SMOG**
Intercept	15.462***	16.029***	15.322***	16.003***
	(13.502)	(12.110)	(12.656)	(12.500)
DA	2.341*	3.053*	2.200*	1.721*
	(1.922)	(1.664)	(1.829)	(1.832)
Leverage	0.522	1.124	0.870	0.477
	(1.006)	(1.033)	(1.042)	(0.914)
Firm size	-0.206*	-0.252	-0.256	-0.242*
	(-1.813)	(-1.400)	(-1.242)	(-1.917)
Profitability	0.012*	0.014	0.029*	0.020*
	(1.766)	(1.466)	(1.762)	(1.888)
DD	-0.614*	-0.689*	–	–
	(-1.880)	(-1.808)		
Z-score	–	–	-0.796*	-0.631*
			(-1.742)	(-1.900)
Adj R-square	0.042	0.040	0.065	0.053

Note: The level of significance has been measured using t-statistics which are reported in parentheses. ***/**/* implies significance at 0.01, 0.05, and 0.10 levels, respectively.
Source: Authors'.

Models 5 and 6 in Table 5 indicates the impact of DA and Ownership on readability. A significant positive association between DA and readability indexes (FOG and SMOG), indicates that

distressed firms which have managed their earnings, make the MDA section of the annual report less readable.

Table 5: Effect Earnings Management (DA) on Readability of Financial Distressed firms-Ownership Moderation

Variables	*Model 5* FOG	*Model 6* SMOG
Intercept	17.077*** (11.330)	10.505*** (15.110)
DA	3.324* (1.885)	2.217* (1.847)
Leverage	1.106* (1.669)	0.666* (1.778)
Firm size	-0.162 (-0.919)	-0.157 (-1.312)
Profit	0.014 (1.325)	0.012 (1.585)
Ownership	-0.770** (-2.006)	-0.434* (-1.661)
Adj R-square	0.048	0.047

Note: The level of significance has been measured using t-statistics which are reported in parentheses. ***/**/* implies significance at 0.01, 0.05, and 0.10 levels, respectively.
Source: Authors'.

In models 5 and 6, Leverage is positive and significantly related to the readability indexes. It indicates that financially troubled firms with high leverage try to hide the causes of debt enhancement from their investors by publishing obscure reports. Further, the above models, report a negative but significant association between ownership and readability. Studies in the Indian context also refer to the concentration of ownership by family-owned business houses (Khanna & Palepu, 2000). Furthermore, there exists an agency conflict primarily between majority shareholding promoters and the marginal shareholders.[6] Promoters with a majority share have the power to influence the management (La Porta et al., 2000) and as a result companies with concentrated ownership have greater motivation to publish a less readable report. The finding responds to our hypothesis H_2.

To determine whether the intensity of financial distress is impacting the readability of the sample firms, we use Z-score and DD dummy measures, where Z-score and DD value higher than the corresponding median value is classified as low distress. These firms over median are assigned values 1 and 0 otherwise. Table 6

represents regression results for models 7, 8, 9 and 10. The coefficient of DD (dummy) and Z-score (dummy) is negatively associated with the readability measures across both models. The result indicates that high financial distressed firms provide less readable financial reports. The result responds to hypothesis H_3. Further, Ownership has a negative coefficient across the models, suggesting that distressed firms with ownership concentration have a higher incentive to exhibit complex MDA reports.

Table 6: Effect of earnings management (DA) on the readability of financially distressed firms based on the intensity of distress.

Variables	*Dependent variable: Readability Measures (FOG and SMOG)*			
	Model 7	*Model 8*	*Model 9*	*Model 10*
	FOG	**SMOG**	**FOG**	**SMOG**
Intercept	16.826*** (9.565)	16.115*** (11.054)	15.810*** (9.112)	15.212*** (10.001)
DA	1.968 (1.052)	1.297 (1.066)	2.920 (1.466)	1.744 (1.066)
Z-score (Dummy)	-0.654* (-1.661)	-0.502* (-1.767)	–	–
DD (Dummy)	–	–	-0.370* (1.731)	-0.412* (-1.800)
Firm Size	-0.204 (-1.003)	-0.246 (-1.489)	-0.077 (-0.287)	-0.104 (-0.989)
Leverage	0.754 (0.960)	0.363 (0.678)	1.147 (1.063)	0.624 (1.421)
Ownership	-0.753* (1.832)	-0.348* (1.622)	-0.744* (1.812)	-0.343* (-1.701)
Profit	0.016 (1.465)	0.013* (1.722)	0.007 (0.500)	0.005 (0.730)

Note: The level of significance has been measured using t-statistics which are reported in parentheses. ***/**/* implies significance at 0.01, 0.05, and 0.10 levels, respectively.
Source: Authors'.

4.3 Robustness tests: Using an alternate measure of EM

In this section, we conduct a robustness test to verify our main results, specifically examining whether they differ when considering REM as an alternate measure. We adopt one form of REM, specifically focusing on the abnormal reduction in discretionary expenses, as proposed by Roychowdhury (2006). Consistent with the methodology of Lo et al. (2017), we define REM as the negative sum of the change in R&D expenses and the change in advertising expenses, deflated by beginning total assets. We choose to focus on the abnormal reduction of discretionary expenses because it is a more prevalent and preferred form of REM that managers commonly employ to inflate earnings, as highlighted in prior research by Graham et al. (2005). By including REM as an alternative measure of earnings management, we aim

to ensure the robustness of our findings across different proxies for earnings management.

Anecdotal evidence supports the notion that firms resort to real activity-based earnings management (REM) as a means of misappropriating earnings. For instance, Zang (2012) offers evidence of financially distressed firms engaging in REM practices. Similarly, Campa and Camacho-Miñano (2015) observe that poor performance often drives financially troubled firms to adopt REM strategies. Additionally, Nagar and Sen (2016) document that distressed firms, particularly during the initial stages of financial stress, tend to manage earnings upwards through REM practices. They further note the absence of accrual-based earnings management practices among these firms, highlighting the prevalence and significance of REM in such contexts.

Table 7 repeats the same regression as performed in models 1, 2, 3 and 4 of Table 4, using REM as the proxy of earnings management. The impact of distress measures (DD and Z-score), profitability and ownership pattern on readability remains similar to what we found in Table 4. The EM measure i.e., the REM coefficient is positive and significant. Thus, our result shows that financially distressed firms engage in REM to influence the readability of annual reports.

Table 8 repeats the same regression as performed in models 5 and 6 of Table 4, using REM as the proxy of earnings management. The coefficient of REM is positive and significant, suggesting that financially distressed firms exhibit REM and issue less readable disclosure. The ownership variable is negative and significant which implies that firms with concentrated ownership promote less readable reports to hide the firms' financial troubles from the regulators or investors. Other results complement the findings from Table 5.

Table 7: Effect of Earnings Management (REM) on the Readability of Financial Distressed firms (Robustness check of Model 1 to 4)

Variables	*Model 1*	*Model 2*	*Model 3*	*Model 4*
	FOG	**SMOG**	**FOG**	**SMOG**
Intercept	14.440*** (12.991)	16.222*** (14.322)	18.433*** (13.262)	15.786*** (12.205)
REM	3.045* (1.714)	1.002* (1.689)	3.263* (1.790)	2.425* (1.761)
Leverage	0.849 (0.943)	1.044 (1.184)	1.010 (0.635)	0.091 (0.047)
Firm size	-0.602* (-1.977)	-0.267 (-1.302)	-0.293 (-1.365)	-0.368* (-2.061)
Profit	0.028* (1.875)	0.030 (1.050)	0.004* (1.766)	0.023* (2.100)
DD	-0.781* (-2.031)	-0.612* (-1.858)	–	–
Z-score	–	–	-0.750* (-1.904)	-0.400* (-1.796)
Adj R-square	0.039	0.036	0.050	0.069

Note: The level of significance has been measured using t-statistics which are reported in parentheses. ***/**/* implies significance at 0.01, 0.05, and 0.10 levels, respectively.
Source: Authors'.

Table 8: Effect of Earnings Management (REM) on the Readability of Financial Distressed firms (Robustness check of Model 5 to 6) – Ownership Moderation

Variables	*Model 5*	*Model 6*
	FOG	**SMOG**
Intercept	14.075*** (10.048)	11.785*** (15.110)
REM	2.950* (1.716)	2.178* (1.699)
Leverage	1.901* (1.711)	0.432 (1.614)
Firm size	-0.324 (-0.098)	-0.170 (-1.024)
Profit	0.185 (1.204)	0.085 (1.405)
Ownership	-0.590** (-2.068)	-0.604* (-1.697)
Adj R-square	0.048	0.047

Note: Note: The level of significance has been measured using t-statistics which are reported in parentheses. ***/**/* implies significance at 0.01, 0.05, and 0.10 levels, respectively.
Source: Authors'.

Table 9 repeats the similar regression as performed in models 7 to 10 of Table 6, using REM as the proxy of earnings management. The result from Table 9 provides a robustness check to the findings from Table 6. The impact of REM on the readability of the MDA report based on the intensity of financial distress is checked. Similar to Table 6, dummy variables of Z-score and DD measures are included in Models 7, 8, 9 and 10 of Table 9. Across both models presented in Table 9, distress measures are significant and negative. It implies that firms with high financial distress exhibit less readable text in their disclosure reports.

Table 9 Impact of REM on the readability of financially distressed firms based on the intensity of distress (Robustness check of Models 7 to 10)

Table 9: Impact of REM on the readability of financially distressed firms based on the intensity of distress (Robustness check of Models 7 to 10).

Variables	*Dependent variable: Readability Measure (FOG and SMOG)*			
	Model 7	*Model 8*	*Model 9*	*Model 10*
	FOG	**SMOG**	**FOG**	**SMOG**
Intercept	16.428*** (13.598)	18.126*** (10.194)	15.718*** (9.875)	15.811*** (10.963)
REM	3.082 (1.048)	2.090 (0.551)	2.154 (1.074)	1.491 (0.894)
Z-score (Dummy)	2.909 (0.972)	1.608 (0.366)	–	–
DD (Dummy)	–	–	0.642 (0.842)	0.913 (0.766)
Firm Size	-0.251* (-1.776)	-0.287* (-1.683)	-0.438* (-1.675)	-0.191* (-1.988)
Leverage	0.972* (1.855)	1.568* (2.032)	0.636 (0.689)	0.395 (0.647)
Ownership	-0.812* (2.000)	-1.132* (1.892)	-0.541* (1.746)	-0.674* (1.724)
Profit	0.012 (1.006)	0.004 (0.206)	0.006 (0.442)	0.017 (0.748)
Adj R-square	0.048	0.068	0.039	0.058

Note: The level of significance has been measured using t-statistics which are reported in parentheses. ***/**/* implies significance at 0.01, 0.05, and 0.10 levels, respectively.
Source: Authors'.

Thus, our study finds that financially troubled firms adopt REM and have a significant influence on the readability of such firms. This is consistent with the evidence provided by prior studies that firms undergoing financial distress adopt REM.

5. Conclusion

In our study, we explore the influence of earnings management on the readability of the financial statements of financially distressed firms. Anecdotal evidence suggests that periods of financial distress often entail heightened scrutiny of a firm's financial statements, creating incentives for managers to engage in earnings management practices. The increased level of monitoring during financial distress may compel managers to manipulate earnings in an attempt to present a more favourable financial picture to stakeholders. This phenomenon underscores the potential impact of financial distress on managerial behaviour and its implications for the readability of financial disclosures.

Utilising a sample of distressed firms identified through ratings from major credit rating agencies in India—CRISIL Ltd., ICRA Ltd., Fitch Ratings India Pvt Ltd, and CARE Ltd—our study examines the impact of financial distress on the readability of the Management Discussion and Analysis (MDA) section of annual reports. Analysing 545 MDA sections from 208 distressed Indian companies spanning the period from 2014 to 2021, we employ the FOG and SMOG Index as measures of readability and discretionary accruals as a proxy for earnings management. Our findings align with prior research, indicating that poorly performing firms tend to produce less readable text. Moreover, we observe that the intensity of distress correlates with decreased readability in financial disclosures, particularly among highly distressed firms. Additionally, our study sheds light on the impact of both AEM and REM on the readability of financial disclosures in distressed firms. The scarcity of research on text readability in the Indian context underscores the significance of our study, which offers unique insights compared to studies conducted in developed countries with dispersed ownership structures.

Our findings offer valuable insights for regulators, bankers, and investors, enabling them to make informed decisions when assessing distressed companies seeking financial relief. Earnings management practices allow managers of distressed firms to manipulate financial statements, potentially biasing the information presented. However, given the limited technical expertise of various stakeholders who rely on financial statements, they serve as critical tools for rational decision-making. In this context, our study provides guidance to stakeholders of financially troubled firms, aiding them in identifying and understanding any potential obfuscation present in financial disclosures. By enhancing transparency and awareness surrounding earnings management practices, our research empowers stakeholders

to navigate effectively through the complexities of distressed company evaluations. Moreover, our study generates new insights for regulators by exploring an association between textual readability and ownership of Indian firms. This is particularly important as Indian companies are highly categorised by the existence of concentrated family ownership.

Endnotes

1. An excerpt from Mary Jo White, 31st SEC Chairperson's speech, delivered at the 2013 Leadership Conference of the National Association of Corporate Directors in National Harbor, Maryland.

2. National Stock Exchange. It is India's first broad-based stock market index of the Indian stock market, covering the top 500 listed companies on the NSE.

3. Credit Rating Information Services of India Ltd (CRISIL), Investment Information and Credit Rating Agency (ICRA Ltd), Fitch Ratings India Pvt Ltd and Credit Analysis and Research Ltd (CARE Ltd). Firms which have defaulted on bank loan repayment, are assigned a "D" rating by the credit rating agencies.

4. Z-score = 3.3(X/TAA) + 1.2 (V/TA) + 1.4 (W/TAA) + 1.0 (Z/TAA) + 0.6 (Y/TAA)
   where, V = working capital (current assets – current liabilities); W = retained earnings; X= earnings before interest and tax
   Y = market value of equity; Z = book value of liabilities; TAA = total assets

5. $DD = \ln(Lev) / (Lev - 1) \times 1/\sigma_E$

   where Lev = leverage ratio measured as D/(VEq + Dt), VEq refers to the MV(market value) of equity and Dt is the book value of debt. σ_E = volatility of the firm's equity. We have adopted the simplified spreadsheet version of Merton's DD model as proposed by Bystrom (2006).

6. We have also interacted with ownership and DA and use that interaction term in our regression. However, we did not find any significant result of the interacting term. Hence, it is excluded from the model.

Appendix

A1. Definitions and Full Forms of Variables

Sl. No	Variables	Definitions
1	DA	Absolute value of Discretionary Accruals
2	Leverage	Total borrowing scaled by total assets
3	REM	Real activity-based earnings management
4	AEM	Accrual based earnings management
3	Firm size	Natural log of total assets
4	Ownership	Promoter holding higher than 50% is given value of 1 and 0 otherwise.
5	Profitability	Net Income scaled by total assets
6	Z-score	Altman's Z-score, an accounting-based measure of financial distress
7	DD	Market-based model of distance-to-default (DD) proposed by Merton (1974)
	Z-score dummy	Z-score value higher than the corresponding median values for the sample is low distressed firm assigned 1 and 0 otherwise
	DD dummy	DD value higher than the corresponding median values for the sample is low distressed firm assigned 1 and 0 otherwise
8	*TotAccr*	Total operating accruals
9	*TA*	Total assets
10	*Re*	Revenue
11	*PPE*	Gross property, plant, and equipment
12	*ROA*	Return on assets
13	*MTB*	Market-to-book ratio
14	FOG	The Gunning Fog Index (Gunning, 1952)
15	SMOG	The Smog index (Mc Laughlin, 1969)

References

Agarwal, V., & Taffler, R. (2008). Comparing the performance of market-based and accounting-based bankruptcy prediction models. *Journal of Banking & Finance*, *32*(8), 1541–1551.

Agrawal, K., & Chatterjee, C. (2015). Earnings management and financial distress: Evidence from India. *Global Business Review*, *16*(5_suppl), 140S-154S.

Aharony, J., Lee, C.-W. J., & Wong, T. J. (2000). Financial packaging of IPO firms in China. *Journal of Accounting Research*, *38*(1), 103–126.

Ajina, A., Laouiti, M., & Msolli, B. (2016). Guiding through the Fog: Does annual report readability reveal earnings management? *Research in International Business and Finance*, *38*, 509–516.

AlHares, A. (2020). Corporate governance and cost of capital in OECD countries. *International Journal of Accounting & Information Management*, *28*(1), 1-21.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, *23*(4), 589–609.

Anderson, R., Martin, G. S., & Reeb, D. (2017). *Financial misconduct and family firms*. Temple University, Working Paper.

Beller, A. L. (2003). Speech by SEC Staff: Remarks at the Bond Market Association. Corporate Credit Markets on April, 10.

BenYoussef, N., & Khan, S. (2017). Identifying fraud using restatement information. *Journal of Financial Crime*, *24*(4), 620-627.

Bergstresser, D., & Philippon, T. (2006). CEO incentives and earnings management. *Journal of Financial Economics*, *80*(3), 511–529. https://doi.org/10.1016/j.jfineco.2004.10.011

Berrone, P., Cruz, C., & Gomez-Mejia, L. R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family Business Review*, *25*(3), 258–279.

Bhattacharya, U., Daouk, H., & Welker, M. (2003). The world price of earnings opacity. *The Accounting Review*, *78*(3), 641–678.

Bloomfield, R. (2008). Discussion of "annual report readability, current earnings, and earnings persistence." *Journal of Accounting and Economics*, *45*(2–3), 248–252.

Boateng, D. A. (2011). A theoretical construct for explaining the impact of financial distress on unethical earnings management

decisions. *The Journal of American Academy of Business*, *16*(2), 89–95.
Brennan, N. M., Guillamon-Saorin, E., & Pierce, A. (2009). Methodological Insights: Impression management: developing and illustrating a scheme of analysis for narrative disclosures–a methodological note. *Accounting, Auditing & Accountability Journal*, *22*(5), 789-832.
Bugeja, M. (2015). The impact of target firm financial distress in Australian takeovers. *Accounting & Finance*, *55*(2), 361–396.
Byström, H. N. (2006). Merton unraveled: A flexible way of modeling default risk. *The Journal of Alternative Investments*, *8*(4), 39–47.
Campa, D. (2019). Earnings management strategies during financial difficulties: A comparison between listed and unlisted French companies. *Research in International Business and Finance*, *50*, 457–471.
Campa, D., & Camacho-Miñano, M.-M. (2015). The Impact of SME's Pre-Bankruptcy Financial Distress on Earnings Management Tools. *International Review of Financial Analysis*, *42*, 222–234.
Chakrabarty, B., Seetharaman, A., Swanson, Z., & Wang, X. (2018). Management risk incentives and the readability of corporate disclosures. *Financial Management*, *47*(3), 583–616.
Charitou, A., Lambertides, N., & Trigeorgis, L. (2011). Distress Risk, Growth and Earnings Quality. *Abacus*, *47*(2), 158–181. https://doi.org/10.1111/j.1467-6281.2011.00337.x
Claessens, S., Djankov, S., Fan, J. P., & Lang, L. H. (2002). Disentangling the incentive and entrenchment effects of large shareholdings. *The Journal of Finance*, *57*(6), 2741–2771.
Courtis, J. K. (2004). Corporate report obfuscation: Artefact or phenomenon? *The British Accounting Review*, *36*(3), 291–312.
Davern, M., Gyles, N., Hanlon, D., & Pinnuck, M. (2019). Is financial reporting still useful? Australian evidence. *Abacus*, *55*(1), 237–272.
DeAngelo, H., DeAngelo, L., & Skinner, D. J. (1994). Accounting choice in troubled companies. *Journal of Accounting and Economics*, *17*(1–2), 113–143.
Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting Review*, *70*, 193–225.
DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, *17*(1–2), 145–176.

DeFond, M. L., & Park, C. W. (1997). Smoothing income in anticipation of future earnings. *Journal of Accounting and Economics*, *23*(2), 115–139.

Dichev, I. D., & Skinner, D. J. (2002). Large–sample evidence on the debt covenant hypothesis. *Journal of Accounting Research*, *40*(4), 1091–1123.

Donker, H., Santen, B., & Zahir, S. (2009). Ownership structure and the likelihood of financial distress in the Netherlands. *Applied Financial Economics*, *19*(21), 1687–1696.

Du, X., & Lai, S. (2018). Financial distress, investment opportunity, and the contagion effect of low audit quality: Evidence from China. *Journal of Business Ethics*, *147*(3), 565–593.

DuBay, W. H. (2007). Smart Language: Readers, Readability, and the Grading of Text. ERIC.

Frost, C. A. (1997). Disclosure policy choices of UK firms receiving modified audit reports. *Journal of Accounting and Economics*, *23*(2), 163–187.

Ghazali, N. A. M. (2007). Ownership structure and corporate social responsibility disclosure: some Malaysian evidence. *Corporate Governance: The international journal of business in society*, *7*(3), 251-266.

Ghazali, A. W., Shafie, N. A., & Sanusi, Z. M. (2015). Earnings management: An analysis of opportunistic behaviour, monitoring mechanism and financial distress. *Procedia Economics and Finance*, *28*, 190-201.

Gianfelici, C., Benyoussef, N., & Savioli, G. (2021). Exploring the Going Concern Statement, Readability and Length Cues as Indicators of Distress at Italian Companies. *Accounting in Europe*, *18*(3), 325-352.

Gomez-Mejia, L. R., Cruz, C., Berrone, P., & De Castro, J. (2011). The bind that ties: Socioemotional wealth preservation in family firms. *Academy of Management Annals*, *5*(1), 653–707.

Gong, G., Li, L. Y., & Zhou, L. (2013). Earnings non-synchronicity and voluntary disclosure. *Contemporary Accounting Research*, *30*(4), 1560–1589.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, *40*(1–3), 3–73.

Gul, F. A., Kim, J.-B., & Qiu, A. A. (2010). Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: Evidence from China. *Journal of Financial Economics*, *95*(3), 425–442.

Gunning, R. (1952). *The technique of clear writing*.

Habib, A., Costa, M. D., Huang, H. J., Bhuiyan, M. B. U., & Sun, L. (2020). Determinants and consequences of financial distress: Review of the empirical literature. *Accounting & Finance*, *60*, 1023–1075.

Hadro, D., Klimczak, K. M., & Pauka, M. (2017). Impression management in letters to shareholders: Evidence from Poland. *Accounting in Europe*, *14*(3), 305-330.

Halioui, K., & Jerbi, A. (2012). The effect of blockholders on earnings management: The case of Tunisian listed firms. *International Journal of Multidisciplinary Research*, *2*(2), 37–49.

Holthausen, R. W., & Leftwich, R. W. (1983). The economic consequences of accounting choice implications of costly contracting and monitoring. *Journal of Accounting and Economics*, *5*, 77-117.

Howe, J. S., & Houston, R. (2016). Earnings management, earnings surprises, and distressed firms. *Accounting and Finance Research*, *5*(1), 64–87.

Hutton, A. P., Miller, G. S., & Skinner, D. J. (2003). The role of supplementary statements with management earnings forecasts. *Journal of Accounting Research*, *41*(5), 867–890.

Jacoby, G., Li, J., & Liu, M. (2019). Financial distress, political affiliation and earnings management: The case of politically affiliated private firms. *The European Journal of Finance*, *25*(6), 508–523.

Jaggi, B., & Lee, P. (2002). Earnings management response to debt covenant violations and debt restructuring. *Journal of Accounting, Auditing & Finance*, *17*(4), 295–324.

Khan, A., Muttakin, M. B., & Siddiqui, J. (2013). Corporate governance and corporate social responsibility disclosures: Evidence from an emerging economy. *Journal of business ethics*, *114*(2), 207-223.

Khanna, T., & Palepu, K. (2000). Is group affiliation profitable in emerging markets? An analysis of diversified Indian business groups. *The Journal of Finance*, *55*(2), 867–891.

Kloptchenko, A., Eklund, T., Karlsson, J., Back, B., Vanharanta, H., & Visa, A. (2004). Combining data and text mining techniques for analysing financial reports. *Intelligent Systems in Accounting, Finance & Management: International Journal*, *12*(1), 29–41.

Koch, A. S. (1999). *Financial distress and the credibility of management earnings forecasts*. The University of Texas at Austin.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Agency problems and dividend policies around the world. *The Journal of Finance*, *55*(1), 1–33.

Lang, M. H., & Lundholm, R. J. (1996). Corporate disclosure policy and analyst behavior. *Accounting Review*, *71*(4), 467–492.

Le Breton-Miller, I., Miller, D., & Lester, R. H. (2011). Stewardship or agency? A social embeddedness reconciliation of conduct and performance in public family businesses. *Organization Science*, *22*(3), 704–721.

Lee, L. F. (2012). Incentives to inflate reported cash from operations using classification and timing. *The Accounting Review*, *87*(1), 1–33.

Li, F. (2008). Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics*, *45*(2–3), 221–247.

Li, Y., Li, X., Xiang, E., & Geri Djajadikerta, H. (2020). Financial distress, internal control, and earnings management: Evidence from China. *Journal of Contemporary Accounting & Economics*, *16*(3), 100210. https://doi.org/10.1016/j.jcae.2020.100210

Lo, K., Ramos, F., & Rogo, R. (2017). Earnings management and annual report readability. *Journal of Accounting and Economics*, *63*(1), 1–25.

Magnusson, C., Arppe, A., Eklund, T., Back, B., Vanharanta, H., & Visa, A. (2005). The language of quarterly reports as an indicator of change in the company's financial status. *Information & Management*, *42*(4), 561–574.

Mangena, M., & Chamisa, E. (2008). Corporate governance and incidences of listing suspension by the JSE Securities Exchange of South Africa: An empirical analysis. *The International Journal of Accounting*, *43*(1), 28–44.

Mc Laughlin, G. H. (1969). SMOG Grading-a New Readability Formula. *Journal of Reading*, *12*(8), 639–646.

Merkl-Davies, D. M., & Brennan, N. M. (2007). Discretionary disclosure strategies in corporate narratives: incremental

information or impression management? *Journal of accounting literature*, *27*, 116-194.

Muttakin, M. B., & Subramaniam, N. (2015). Firm ownership and board characteristics: do they matter for corporate social responsibility disclosure of Indian companies?. *Sustainability Accounting, Management and Policy Journal*, *6*(2), 166-189.

Nagar, N., & Sen, K. (2016). Earnings management strategies during financial distress. *The IUP Journal of Accounting Research and Audit Practices*, *17*(3), 52–79.

O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & quantity*, *41*(5), 673-690.

Pozzoli, M., & Paolone, F. (2017). *Corporate financial distress: A study of the Italian manufacturing industry*. Springer.

Raman, K., & Shahrur, H. (2008). Relationship-specific investments and earnings management: Evidence on corporate suppliers and customers. *The Accounting Review*, *83*(4), 1041–1081.

Rogers, J. L., & Stocken, P. C. (2005). Credibility of management forecasts. *The Accounting Review*, *80*(4), 1233–1260.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, *42*(3), 335-370.

Rosner, R. L. (2003). Earnings manipulation in failing firms. *Contemporary Accounting Research*, *20*(2), 361–408.

Saleh, N. M., & Ahmed, K. (2005). Earnings management of distressed firms during debt renegotiation. *Accounting and Business Research*, *35*(1), 69–86.

Sarkar, J. (2010). Ownership and corporate governance in Indian firms. Corporate Governance: An Emerging Scenario, 217–267.

Schipper, K. (1989). Earnings management. *Accounting Horizons*, *3*(4), 91.

Schrand, C. M., & Walther, B. R. (2000). Strategic benchmarks in earnings announcements: The selective disclosure of prior-period earnings components. *The Accounting Review*, *75*(2), 151–177.

Smith, M., Dong, Y., & Ren, Y. (2011). The predictive ability of corporate narrative disclosures: Australian evidence. *Asian Review of Accounting*, *19*(2), 157-170.

Strampelli, G. (2018). The EU issuers' accounting disclosure regime and investors' information needs: The essential role of narrative

reporting. *European Business Organization Law Review*, *19*(3), 541–579.

Su, X.-Q. (2016). Does systematic distress risk drive the investment growth anomaly? *The Quarterly Review of Economics and Finance*, *61*, 240–248. https://doi.org/10.1016/j.qref.2016.02.011

Sweeney, A. P. (1994). Debt-covenant violations and managers' accounting responses. *Journal of Accounting and Economics*, *17*(3), 281–308.

Viana Junior, D. B. C., Lourenço, I., & Martins, O. S. (2019). The effect of macroeconomic instability on earnings management in developed versus emerging countries. *The Effect of Macroeconomic Instability on Earnings Management in Developed versus Emerging Countries*.

Zang, A. Y. (2011). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, *87*(2), 675–703.