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Narcissism and Earnings Management

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Abstract

Purpose – This research aims to investigate the relationship between Chief Executive Officer (CEO) narcissism and earnings management practices in Brazilian listed companies.

Theoretical framework – Support for the Upper Echelons Theory (UET).

Design/methodology/approach – Using a panel data regression approach, we analyze a sample of 106 companies listed on the B3 from 2010 to 2019. To assess CEO narcissism, we rely on their statements during quarterly conference calls, while earnings management is measured by estimating discretionary accruals based on the Collins model (2017).

Findings – The study uncovers a significant positive correlation between CEO narcissism and earnings management, suggesting that narcissistic CEOs manipulate accounting practices for personal gain, driven by their desire for attention and admiration. Furthermore, the analysis reveals that CEO tenure, board presence, company size, and profitability positively influence earnings management, while the Brazilian economic recession negatively impacts it. The research also innovates by introducing a unique method for measuring narcissism.

Practical & social implications of research – This study contributes to the literature by shedding light on the influence of managers' narcissism, underscoring the importance of considering personality traits when recruiting and supervising executives.

Originality/value – In terms of originality, this research measures the level of narcissism among CEOs using secondary data, adopting a methodology considered more reliable for the study of personality (Mehl et al., 2006). Additionally, it stands out for incorporating factors that have previously been identified in the international literature, but not yet explored in national studies, and that influence earnings management. These factors include CEOs' demographic characteristics, macroeconomic factors, and CEO duality. Thus, this study contributes to the earnings management and behavioral finance literatures and fills an important research gap regarding elements that may influence unethical practices that are harmful to stakeholders in emerging markets.

Keywords: CEO, earnings management, narcissism, accruals.

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1 Introduction

The psychological attributes associated with subclinical narcissism include traits such as excessive self-love, preoccupation with being the focal point of attention, lack of compassion, arrogance, self-confidence, and sensitivity to criticism (Amernic & Craig, 2010). Judge et al. (2009) also correlated this trait with fragile self-esteem, underlining that narcissists are driven by a relentless need for approval and admiration.

Given narcissists' focus on power, prestige and superiority, they often assume leadership roles within organizations (Kets de Vries, 2004). This self-absorption can lead to incongruence between goals and ethical perspectives, causing them to prioritize personal admiration over organizational goals (Hornett & Fredericks, 2005). Consequently, when narcissistic individuals attain CEO positions, they may engage in unethical behaviors such as corporate fraud (Rajgopal & Venkatachalam, 2011), less precise management outcome guidance (Marquez-Illescas & Zhou, 2023) and earnings management (Ahmadi et al., 2023).

For Ahmadi et al. (2023), Capalbo et al. (2018), Buchholz et al. (2020), Kontesa et al. (2021) and Capalbo et al. (2018), managers' narcissism can positively influence earnings management. Earnings management, although within legal boundaries, obscures an organization's true financial situation. This practice reduces the quality of earnings, increases uncertainty, and reduces the precision of accounting results (Rajgopal & Venkatachalam, 2011).

Ahmadi et al. (2023) emphasize that environmental dimensions can influence the financial strategies and levels of earnings management of companies. Studies on the topic have been conducted in countries such as the United States, Indonesia, Malaysia, Iraq and Syria (Capalbo et al., 2018; Buchholz et al., 2020; Kontesa et al., 2021; Ahmadi et al., 2023), which do not necessarily reflect the reality of countries with a high incidence of financial crimes and a national culture that promotes normative violations. In these countries, issues are resolved through informality and bending the rules for personal gain (Barbosa, 2005). Given these factors, there is a gap in the literature to understand whether the personality of CEOs in this context is a significant factor in explaining unethical behaviors, such as earnings management.

In light of these factors, further research is necessary to elucidate how CEO personality traits may influence strategies to promote personal interests. Previous studies have presented inconclusive evidence regarding the influence of dark triad personality traits (narcissism, Machiavellianism, and psychopathy) on earnings management levels in Brazilian companies (D'Souza et al., 2019).

Recently, Brazil has gained significant notoriety due to several corruption cases involving companies from various sectors and Brazilian politicians. This context in which the country finds itself has since sparked interest among researchers who seek to explain possible political, cultural, and social factors linked to this scenario. The driving force behind such research is based on the premise that in an environment characterized by illicit practices, it is necessary to investigate ways to reduce potential misconduct.

To contribute to the literature on this topic, the current study aims to determine whether Brazilian companies with narcissistic CEOs engage in earnings management through accruals. This personality trait affects a company's strategic choices, and insights into its effects can guide stakeholders in their decision making.

In terms of originality, this research uses secondary data to measure the level of narcissism among CEOs. In Brazil, narcissism has been mainly assessed through self-reporting and photograph size in many studies (D'Souza et al., 2019; Araújo et al., 2021). According to Chatterjee and Hambrick (2007) and Engelen et al. (2016), self-reporting is biased because CEOs' responses can be influenced by social desirability bias. Chung and Pennebaker (2007) showed that certain aspects of language are impossible to control in speech, even under experimental manipulation. Therefore, the literature in social psychology suggests that the use of language can be a reliable and revealing way to study personality (Mehl et al., 2006). This research also brings originality by incorporating factors previously identified in the international literature but not yet explored in national studies that influence earnings management: (i) CEOs' demographic characteristics, such as tenure and age; (ii) macroeconomic factors, such as economic recessions; and (iii) corporate governance, including CEO duality. Thus, this study contributes to the earnings management literature by introducing factors that may explain such unethical practices that are harmful to stakeholders in emerging markets.

2 Literature review and hypothesis development

The Upper Echelons Theory (UET) was developed based on the work of Hambrick and Mason (1984), which posits that the personal characteristics of executives are reflected in the decisions made in companies due to their limited rationality. The main idea of the UET has two interconnected parts: (i) executives act based on their interpretations of the strategic situations they face, and (ii) these interpretations are a function of the experiences, values, and personalities of the executives (Chatterjee & Hambrick, 2007).

According to Dechow and Skinner (2000), there is a true profit value within a firm, and management can choose to either report this value honestly or engage in data manipulation tactics. Such tactics can be divided into three main categories: (i) generating "conservative" results, which means deflating profits relative to their true value; (ii) generating "aggressive" results, or inflating profits; and (iii) generating fraudulent reports in violation of accounting standards (Ronen & Yaari, 2008). In the context of aggressive earnings management, firms might use accounting choices to accelerate revenues or delay expenses, thus anticipating profits for future periods. These choices are manifested in discretionary accruals, which are subject to reversal over time, implying that profit increases in one year due to aggressive management will subsequently be offset (Bowen et al., 2002).

Conversely, in conservative earnings management, companies "save" current profits for future periods. Specifically, firms might employ tactics that reduce current profits so that future periods will see a reversal (an increase in profit) (Mulford & Comiskey, 2002). Thus, conservative earnings management involves accounting choices that lead to reduced revenues or increased expenses, thereby negatively affecting current profit (Bishop & Eccher, 2000; Bowen et al., 2002).

The possibility of earnings management through accruals arises because accounting principles and standards allow for choices and judgments by professionals engaged in preparing financial statements. Among various alternatives, managers may intentionally present an accounting event in a manner that misleads stakeholders regarding (i) the achievement of financial reporting goals, (ii) the variability of results, and (iii) current and future accounting results (Healy & Wahlen, 1999; Siregar & Utama, 2008). Though earnings management does not qualify as fraudulent, it is a significant problem because it obscures the true financial position of organizations and thereby hides information that is relevant to financial statement users (Loomis, 1999).

Given this framework, managers may engage in management for personal motivations, such as to maintain remuneration, status, or employment, even while recognizing the potential detriment to the firm and its stakeholders (Harris & Bromiley, 2007). In this vein, the narcissistic personality of a CEO may correlate with earnings management. According to Brunell et al. (2008), narcissistic CEOs are often more motivated by rewards than by potential harm. Recent findings support the connection between earnings management and narcissistic CEOs (Capalbo et al., 2018; Putri & Rusmanto, 2019; Buchholz et al., 2020; Kontesa et al., 2021).

While Putri and Rusmanto (2019) and Kontesa et al. (2021) gauged narcissism using the CEO's photograph in the annual report, D'Souza et al. (2019) used self-reporting by managers. With respect to earnings management, all of the studies reviewed employed modified Jones models. Buchholz et al. (2020) examined narcissism using fifteen indicators reflecting five determinants: (i) media exposure, (ii) use of corporate jets, (iii) compensation, (iv) power, and (v) acquisitions. Capalbo et al. (2018) measured it through the ratio of first-person singular personal and possessive pronouns used by CEOs in earnings conference calls to the total number of pronouns.

Regarding narcissism, it is noteworthy that measurement varies depending on the data available in the specific country analyzed. Although the variables were measured using different metrics and samples, the findings across the studies were congruent, indicating a positive effect of CEO narcissism on the level of earnings management through accruals. Buchholz et al. (2020) also find that narcissism correlates with both aggressive and conservative management.

Recent studies also contribute to understanding the interaction between narcissism and earnings management in organizations by shedding light on various factors and mechanisms that influence these relationships. Azevedo et al. (2024) suggest that the separation of the CEO and the board chair roles plays a moderating role in how CEO narcissism influences earnings management. Lotfiju et al. (2024) propose that financial performance may influence how CEO narcissism and free cash flow affect earnings management practices. Faghekarimi et al. (2024) show that managers' narcissism has a significant effect on several dimensions of earnings quality, such as the stability, predictability, relevance, and timeliness of the company's earnings.

The study by Araújo et al. (2021) analyzed the association between CEO narcissism and tax avoidance in Brazilian publicly traded companies. The results reveal a positive correlation between CEO narcissism and tax avoidance. Executives with this personality trait appear bold or aggressive, making them more inclined to adopt unethical strategies. Ahmadi et al. (2023) aimed to analyze the relationship between both economic complexity and the green economy and the real earnings management and accruals of companies listed on the Iranian stock exchange. The authors used a multiple regression model based on panel data and a fixed effects model. The sample studied comprises 1,351 companies listed on the Tehran Stock Exchange for the years 2014 to 2021. The results show a positive and significant relationship between both economic complexity and the green economy and real earnings management and accruals.

Hypothesis 1 (H1): CEO narcissism positively influences the level of earnings management through accruals.

3 Methodological procedures

3.1 Sample

The population under investigation in this study consists of companies listed on the B3 from 2010 to 2019. From this population, a selection was made of companies that had the necessary data to calculate measures of narcissism and earnings management through accruals. Following this selection process, companies in the financial sector were excluded. In financial institutions, the managerial focus is often concentrated on specific accounts, such as bad debt losses. Given these unique characteristics, discretionary accruals models are not applicable to companies in this sector (Cheng et al., 2011; El Diri et al., 2020).

In line with the existing literature, companies were removed from the sample if the sectors in question had fewer than ten observations for each year under analysis. This exclusion criterion was implemented to ensure the normality of the error term in the calculation of the earnings management variables (Gounopoulos & Pham, 2018). Moreover, to prevent any potential bias in the analysis of individual CEO actions, companies that experienced CEO "rotation" within the observed period were also omitted from the sample. Turnover (rotation) during the year indicates that the company had more than one CEO. Therefore, the exclusion was made with the aim of associating earnings management practices with the personality of a single CEO.

Data were collected in the following manner: (i) financial data were retrieved from the Economática database; (ii) information on CEO demographic characteristics and corporate governance was extracted from the reference form; and (iii) narcissism-related data were gathered using quarterly earnings conference calls published on the companies' respective websites. After the exclusion process, the final sample consisted of 106 companies, with a total of 509 observations.

Given the high variability, the Bacon algorithm was employed to detect and address outliers, particularly in the earnings management model. To mitigate the effects of outliers on the estimation of regression residuals (which represent discretionary accruals), the winsorization technique was applied at the 1% and 99% levels, in accordance with the methods described by Gounopoulos and Pham (2018) and Li (2019).

3.2 Operational definition of variables

To achieve the objectives proposed in this study, panel data econometric Model 1 was estimated:

$$|DA|_{i,t} = \beta_0 + \beta_1 Narc_{i,t} + \beta_{2-6} Control_{i,t} + \varepsilon_t + v_i \qquad (1)$$

where:

- $\mathbf{DA_{i,t}}$'s is the modular variable of accruals;
- $\boldsymbol{Narc_{i,t}}$ is the CEO's level of narcissism;
- $\boldsymbol{Control_{i,t}}$ are the control variables.

The detailed methodology underlying the approach to the calculation, as well as the behavior of each of the variables, is explained in the sub-sections below. The variables have been categorized into three distinct groups: dependent variables of interest, independent variables of interest, and control variables (see Appendix A for Supplementary Data 3 – Variables and Description).

3.2.1 *Dependent variable of interest: earnings management*

To quantify earnings management, the model proposed by Collins et al. (2017) was used. This method modifies the earlier model developed by Kothari et al. (2005). Collins et al. (2017) demonstrated that the relationships between accruals and various factors – such as sales growth (SG), future company growth (market-to-book – MTB), and return on assets (ROA) – are nonlinear in nature. MTB stands for market expectations regarding the company's growth. Thus, high MTB ratios indicate that shareholders have high expectations for future results, meaning expectations beyond book value. Consequently, models that fail to account for the nonlinear effects of these variables may be poorly specified.

In response to this issue, Collins et al. (2017) put forth a linear method designed to control for the nonlinear effects associated with performance and growth. To capture this nonlinearity, the variables SG, MTB, and ROA are divided into quintiles, specifically characterized as very low, low, medium, high, and very high values. After this segmentation, dummy variables are employed to manage the distinctions between these quintiles. Equation 2 illustrates the model as formulated by Collins et al. (2017).

$$ACC_{i,t} = \beta_0 + +\beta_2 \frac{\left(\Delta Sales_{i,t}\right)}{A_{i,t-1}} + \beta_3 \frac{ACC_{i,t-1}}{A_{i,t-1}} + \sum_K \beta_{7,k} \frac{ROA\_Dum_{k,i,t}}{A_{i,t-1}} + \sum_K \beta_{8,k} \frac{SG\_Dum_{k,i,t-1}}{A_{i,t-1}} + \sum_K \beta_{9,k} \frac{MTB\_Dum_{k,i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} \quad (2)$$

Where:

- $ACC_{i,t}$ represents the total accruals of firm i in period t and is calculated from the sum of the following cash flow statement items: accounts receivable, inventories, accounts payable, taxes payable, and other assets and liabilities;
- A_{t-1} is the total assets of firm i at the beginning of period t;
- $\Delta Sales_{i,t}$ is the change in sales revenue from the beginning to the end of period t, $\Delta Sales_{i,t} = Sales_{i,t} - Sales_{i,t-1}$;
- $\Delta AccountRec_{i,t}$ is the change in accounts receivable from the beginning to the end of period t - $\Delta AccountRec_{i,t} = AccountRec_{i,t} - AccountRec_{i,t-1}$;
- $ACC_{i,t-1}$ are the total accruals of firm i at the beginning of period t;
- $ROA\_Dum_{k,i,t}$ takes a value of 1 if the ROA of firm i belongs to the k-th quintile in period t, and zero otherwise. Dummy variables were included for quintiles 1, 2, 4, and 5, representing very low, low, high, and very high values, respectively;
- $Sales\_Dum_{k,i,t-1}$ This variable takes a value of 1 if, at the beginning of period t, the sales revenues of firm i belong to the k-th quintile, and zero otherwise;
- $MTB\_Dum_{k,i,t-1}$ This variable takes a value of 1 if, at the beginning of period t, the MTB of firm i belongs to the k-th quintile, and zero otherwise;
- $\varepsilon_{i,t}$ is the regression error term and represents the earnings management variable discretionary accruals.

According to the study by Bouaziz et al. (2020), the model was applied to capture earnings management through accruals. This procedure was carried out to measure management through conservative and aggressive accounting. Thus, regardless of the direction, earnings management is considered a violation of ethical practices (Merchant & Rockness, 1994) (see Appendix A for Supplementary Data 1 – Database 1).

3.2.2 *Independent variable of interest: narcissism*

According to Mehl et al. (2006) and Fast and Funder (2008), the use of words is related to the personality traits of individuals. Thus, the linguistic pattern employed by CEOs can be an important source for understanding their mindset and personality (Pennebaker et al., 2003; Craig & Amernic, 2004).

Consistent with Aktas et al. (2016) and Capalbo et al. (2018), we use conference calls to capture CEO narcissism. Quarterly earnings conference calls are used to measure CEO narcissism. The narcissism score is measured by obtaining the ratio of first person singular possessive and personal pronouns in both English and Portuguese (*eu, me, mim, comigo, meu, minha, meus, minhas*, I, me, mine, my, myself) to the sum of first person pronouns (*eu, me, mim, comigo, meu, minha, meus, minhas, nós, conosco, nosso, nossa, nossos, nossas, a gente*, I, me, mine, my, myself, we, us, our, ours, ourselves) said by the CEO during the conference calls. Equation 3 shows the narcissism score:

$$\text{Narcisism} = \frac{\sum n_{(\text{eu,me,mim,comigo,meu, minha,meus minhas,I, me,mine,my,myself})}}{\sum n_{(\text{eu,me,mim,comigo,meu,minha, meus minhas,nós,conosco,nosso, nossa,nossos,nossas,a gente,I,me, mine,my,myself,we,us,our,ours,ourselves})}} \quad (3)$$

The earnings conference calls refer to the years 2010 to 2019 and were extracted from the websites of the companies in the sample. Of the quarterly conference calls analyzed, 299 were made available in transcribed form. In the remaining cases, where the companies provided only the audio files, they were transcribed for later content analysis. The Atlas.Ti program was used to extract from the transcripts the proportion of pronouns uttered by the CEOs.

3.2.3 *Control variables*

The control variables used in this study are age, duality, ownership, growth, ownership concentration, ROA, economic recession, size, and board size. The study variables, the metrics for their measurement, the source of the collections, and the expected signs are described in Table 1 (see Appendix A for Supplementary Data 2 – Database 2).

The variable "size" represents the size of the firm and is measured as the natural logarithm of total assets (Capalbo et al., 2018; Kontesa et al., 2021). The relationship between firm size and earnings management has been examined with varying results (Barton & Simko, 2002; Siregar & Utama, 2008; Capalbo et al., 2018; Bouaziz et al., 2020; Kontesa et al., 2021). Larger firms, equipped with more resources and superior technology, can produce financial information more efficiently and are subject to greater scrutiny by investors and regulators. Nevertheless, the expected relationship between size and earnings management is undefined due to conflicting incentives.

Firm performance as measured by return on assets (ROA, the ratio of net income to total assets) is commonly used to evaluate the quality of accounting information (Capalbo et al., 2018; Kontesa et al., 2021). Subpar financial performance may prompt earnings management to avert negative stakeholder perceptions. Conversely, some studies have found a positive association between ROA and earnings management, signaling higher discretionary accruals in firms with unusual performance (Kothari et al., 2005; Ali & Zhang, 2015; Capalbo et al., 2018; Gounopoulos & Pham, 2018).

"Growth" is another metric examined, calculated as the difference in EBIT between the beginning and end of the year divided by EBIT at the beginning. Firms with low growth may manipulate earnings to meet expectations, concealing alterations in stability and growth (Kontesa et al., 2021). The new market ensures highly differentiated corporate governance standards. The fact that companies listed in this segment adhere to high corporate governance standards is expected to have a negative relationship with earnings management, since corporate governance serves as a means to mitigate opportunistic practices by managers (Almeida-Santos et al., 2011)

Corporate governance is assessed through metrics such as board size, ownership concentration, and CEO duality. Larger boards may have greater technical expertise but encounter potential challenges in monitoring management (Dechow et al., 1996; Aygun et al., 2014; Talbi et al., 2015). Ownership concentration may curtail managerial opportunism, while CEO duality might contribute to increased earnings management (Roodposhti & Chashmi, 2010; Alhmood et al., 2020; Sarkar et al., 2008; Gumanti & Prasetiawati, 2012; Bouaziz et al., 2020).

Table 1
Control Variables

Variable	Metrics	Source of Collection	Expected Sign
Size	Natural logarithm of Total Assets$t$	Financial Statements	+/-
ROA	$\frac{Net\ Profit_t}{Total\ Asset_t}$	Financial Statements	+/-
Growth	$\frac{EBIT_t - EBIT_{t-1}}{EBIT_{t-1}}$	Financial Statements	-
Governance Level	Dummy variable equal to 1 if the company is part of the new market segment of the B3 and 0 (zero) otherwise.	B3 website	-
Ownership Concentration	Percentage of shares held by top 5 shareholders.	Financial Statements	-
Board Size	Natural logarithm of total number of board members.	Reference Form	+/-
Duality	Dummy variable equal to 1 if the CEO is a member of the board of directors and 0 (zero) otherwise.	Reference Form	+
Tenure	Numeric variable indicating the length of time in the CEO position.	Reference Form	-
Age of CEO	Numeric variable indicating the age of the CEO.	Reference Form	+/-
Economic Recession	Dummy variable equal to 1 in the years 2015 and 2016 and 0 (zero) otherwise.	-	-

Source: Research data.

Factors such as CEO age and tenure are also considered. Younger CEOs might exhibit either more risk aversion or aggression, while their older counterparts may be more conservative (Ting et al., 2015; Hambrick & Mason, 1984; Yim, 2013; Prendergast & Stole, 1996). CEOs with longer tenures often shun opportunistic behaviors because they have built a reputation over time (Hazarika et al., 2012; Ali & Zhang, 2015; Gibbons & Murphy, 1992).

Furthermore, a dummy variable is employed to control for the economic recession between 2015 and 2016, as periods of economic upheaval generally correspond to a reduction in earnings management practices (Filip & Raffournier, 2014; Dimitras et al., 2015). According to the Economic Cycle Dating Committee (Fundação Getulio Vargas, 2017), the fourth quarter of 2016 saw the end of a recession that lasted for 11 quarters – from the second quarter of 2014 to the fourth quarter of 2016 – and marked the country's entry into an expansionary phase starting from the first quarter of 2017. According to Cacciamali and Tatei (2016), the first signs of an economic recession in Brazil appeared in 2014, but it was only in the following year that the negative impacts on the labor market deepened, leading to the destruction of formal and informal wage employment. In this regard, the present study considered the economic recession to have occurred between 2015 and 2016, similar to the study by Cordeiro et al. (2018).

3.2.4 *Validation tests*

Models of discretionary accruals are widely used in the accounting literature to detect earnings management (Capalbo et al., 2018; Buchholz et al., 2020), despite certain criticisms (e.g., Ball, 2013; Jackson, 2018). It should be emphasized that this research does not attempt to quantify the precise level of earnings management within a specific company, but rather to assess the relative amount of discretion among firms within the industry. This approach addresses some of the criticisms of these models.

To strengthen the robustness of the study, alternative measures of managerial discretion are used, as suggested by McNichols and Stubben (2018). In this study, audit fees are also evaluated as an additional measure.

4 Analysis of results

4.1 Descriptive statistics

Table 2, below, presents the descriptive statistics and variability values for the variables examined in this study.

Table 2
Descriptive Statistics of the Research Variables

Panel A: Continuous Variable Statistics						
Variables	**Maximum**	**Minimum**	**Mean**	**Median**	**Standard Deviation**	**Coefficient of Variation**
Age of CEO	76.6959	30.0000	51.6527	51.6986	8.8216	17.08%
Size	27.5542	18.9716	22.2468	22.1355	1.3180	5.92%
ROA	0.3619	-0.5178	0.0322	0.0379	0.0916	284.54%
Growth	13.9627	-385.2826	-0.7520	0.0752	17.1711	2283.43%
Board Size	3.1781	1.3863	2.2333	2.1972	0.3723	16.67%
Ownership Concentration	99.3503	0.1389	53.0294	54.7840	18.7379	35.33%
Tenure	40.0657	0.5202	4.7223	3.6687	4.3803	92.76%
Narcissism	0.8333	0.0000	0.2071	0.1928	0.1279	60.95%
Earnings Management	0.3769	0.0000	0.0366	0.0250	0.0421	115.13%

Panel B: Dichotomous Variable Statistics			
Variables	**Modality**	**Frequency**	**(%)**
Duality	0	281	55.21%
	1	228	44.79%
Gender	0	3	0.59%
	1	506	99.41%
Governance Level	0	116	22.79%
	1	393	77.21%

Source: Research data.

The mean narcissism score was found to be 0.2098. This score is consistent with the results of previous studies by Aktas et al. (2016) and Capalbo et al. (2018), who reported mean narcissism scores of 0.215 and 0.26, respectively. A coefficient of variation of 60.95% indicates high variability in the presence of narcissistic personality traits among the sampled CEOs.

Table 2 reveals that the financial variables studied show high variability in relation to their mean values. This variation can be attributed to the different sizes of the companies in the sample. However, such heterogeneity is not apparent for the age-related variables, which have small coefficient of variation values, indicating greater homogeneity of the sample with respect to these factors. The variables "size" and "board size" were subjected to a logarithmic transformation, which accounts for the low coefficient of variation.

The concentration of ownership among the five largest shareholders ranges from 0.13% to 99%, with a median value of 54.78%. It can be inferred that ownership is predominantly concentrated within the sampled companies. Regarding the return on assets (ROA) variable, the sampled companies appear to be profitable on average. Nevertheless, the presence of a minimum value of -51.78% reveals instances of companies with poor performance indices.

The average age of the CEOs in the sample is 53 years, with the youngest being 30 and the oldest being 76. The median age is 51.70 years, and the first and third quartiles are 45 and 58 years, respectively. These findings indicate that most of the CEOs in the sample fall into the middle-aged category (between 45 and 59 years old). With respect to tenure, the CEOs were found to have held their position for an average of 4.7 years, with the longest tenure being 40 years and the shortest being 0.52 years.

An initial analysis was conducted to discern the general pattern of behavior among narcissistic CEOs by comparing the extremes of the scores related to levels of narcissism. Figure 1 illustrates the frequency distributions of company performance, segregated according to the first quartile (lower 25% of narcissism scores) and the third quartile (higher 25% of narcissism scores) of the sampled CEOs. The first quartile represents the group of CEOs with the lowest levels of narcissism, while the third quartile highlights the CEOs with the highest narcissism scores.

Analysis of the graphs reveals a trend among these companies. Specifically, firms in the lower quartile, associated with lower levels of narcissism, are more inclined to report losses. Conversely, firms led by more narcissistic CEOs tend to report negative earnings less frequently than their less narcissistic counterparts. These histograms thus offer preliminary evidence of the reluctance of more narcissistic CEOs to report losses.

According to Burgstahler and Dichev (1997), the absence of earnings management would yield a symmetrical distribution in the histogram, resulting in a homogeneous distribution on both sides. However, the practice of earnings management may be employed to avoid disclosing losses. Consequently, the histogram would display a discontinuity in the frequency distribution, as losses would be converted into ranges of positive outcomes.

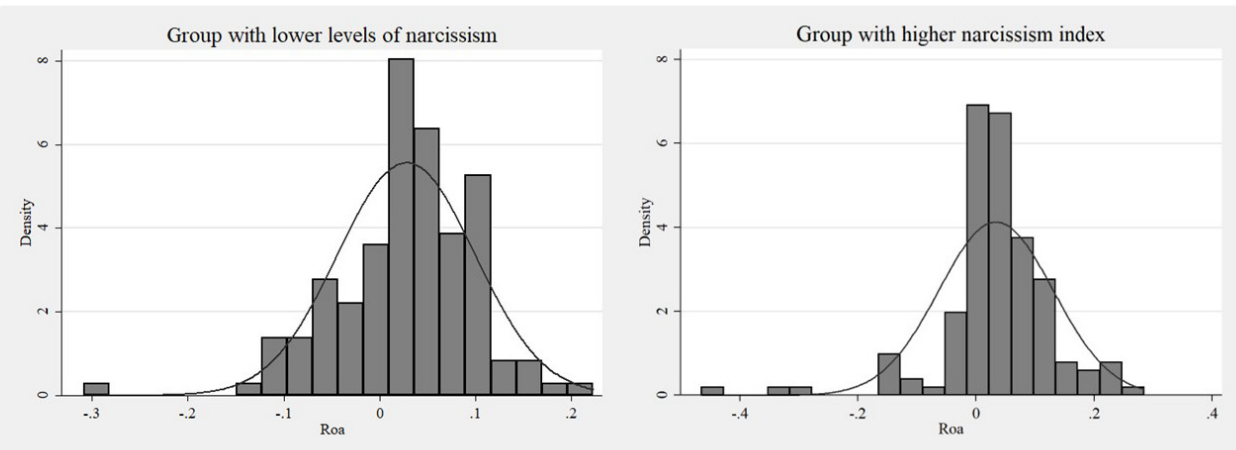

Figure 1. Histogram of ROA segregated by levels of narcissism.
Source: Research data.

4.2 Regression analysis

Table 3 presents the generalized least squares (GLS) model estimated for discretionary accruals. Examination of the table confirms the validation of the proposed model through the statistical tests of fit tailored for the precise application of the methodology adopted. Both the Chow and Breusch-Pagan tests lead to the rejection of their null hypotheses, which implies the appropriateness of the pooled approach to data treatment. Finally, the Hausman test confirms the suitability of the fixed effects approach for estimating the parameters of the proposed model.

The investigation of the presence of heteroscedasticity and autocorrelation of the residuals in the fixed effects model, conducted using the modified Wald and Wooldridge tests, respectively, identified the presence of heteroscedasticity using the modified Wald test. This result indicates the rejection of H0, which posits that the residuals are homoscedastic. To address the issue of heteroscedasticity, the GLS model was estimated with a correction for this problem and the variability structure of the fixed effects model was considered. The Wald test applied to the proposed GLS model confirms the overall significance of the proposed model (see Appendix A for Supplementary Data 4 – STATA Dofile).

Table 3
Regression Model

Generalized Least Squares (GLS) Model			
Variable	**Variable**		**Standard Error**
Narcissism	0.0036	*	0.0022
Tenure	0.0003	***	0.0001
Age of CEO	- 0.0000		0.0001
Duality	0.0027	**	0.0014
Economic Recession	- 0.0021	*	0.0012
ROA	0.0137	*	0.0075
Size	0.0017	*	0.0010
Board Size	0.0000		Omitted
Ownership Concentration	- 0.0001		0.0001
Growth	- 0.0002		0.0002
Governance Level	- 0.0207		0.0337
Chow	2.62***		
Breusch-Pagan	58.07***		
Hausman	44.26***		
Wooldridge	0.415		
Modified Wald	7.4e+34***		
Wald	2.98e+11***		

Note: The explained variable in the model is earnings management through accruals (EMA). The statistical significances of the tests are represented by the following symbols: *10%; **5%; ***1%.
Source: Research data.

The variable of interest, narcissism, shows statistical significance and a positive correlation in the model analyzed, illustrating that more narcissistic CEOs are more inclined to engage in earnings management. This observation suggests that earnings management may function as a self-regulatory strategy for narcissistic CEOs, employed to uphold a positive public image, satisfy a need for admiration, and shield themselves from their failures (Raskin et al., 1991; Morf & Rhodewalt, 1993; Amernic & Craig, 2010). These findings are consistent with previous research by Capalbo et al. (2018), Putri and Rusmanto (2019), Buchholz et al. (2020), and Kontesa et al. (2021).

Duality has a positive and significant relationship with discretionary accruals, consistent with the studies by Sarkar et al. (2008), Gumanti and Prasetiawati (2012), and Bouaziz et al. (2020). This can be interpreted to mean that the inclusion of the CEO on the board undermines the oversight role, thereby increasing the ability of these managers to extract personal benefits at the expense of shareholders. Regarding CEO tenure, the findings show a positive and significant association with earnings management. Contrary to the international literature (Hazarika et al., 2012; Ali & Zhang, 2015), this positive relationship implies that firms with CEOs who have held the position longer tend to engage in earnings management. This marks a discrepancy with Brazilian firms, where CEOs with longer tenures exhibit riskier behavior compared to CEOs of foreign entities, possibly due to concerns about reputation or perceptions of impunity (Soto, 2013).

The economic recession variable is statistically significant and negatively correlated with earnings management. This result, which is consistent with expectations, implies that firms are inclined to reduce earnings manipulation during economic downturns (Filip & Raffournier, 2014; Dimitras et al., 2015). This may be attributed to the lower performance expectations of shareholders during recessionary periods, which reduces the impetus for earnings management practices.

Regarding the ROA variable, it is statistically significant and positively correlated with earnings management, indicating that more profitable firms are more prone to earnings manipulation. As suggested by Capalbo et al. (2018), this may indicate an artificial increase in profitability through positive earnings manipulation. Similar to the findings of Kontesa et al. (2021), the size variable exhibits a statistically positive connection with earnings management. Hence, larger firms may exhibit higher levels of earnings management through accruals, possibly driven by external pressures for performance. To strengthen this evidence, alternative managerial measures and ex-post databases of audit schedules were assessed.

4.3 Robustness tests

Table 4 presents the estimated GLS model for audit fees. Consistent with the study by Hribar et al. (2014), audit fees can be used to provide an alternative measure of earnings management through accruals, as they reflect the unobservable private information that auditors have about the quality of firms' accounting data. Thus, higher audit fees may indicate that the company has weak internal controls and requires more audit hours.

Table 4 validates the model through statistical tests of fit, which is appropriate for the methodology applied. The estimation of the parameters is tested with the set of variables proposed in the studies by Martinez et al. (2013) and Nardi et al. (2018).

It was observed that both narcissism and company size have significant and positive parameters, suggesting that larger firms with narcissistic CEOs are likely to incur higher audit fees. Conversely, the concentration variable manifested a significant and negative parameter, suggesting that firms with a greater shareholder concentration tend to have lower fees. These results are consistent with the findings derived from the discretionary accruals model, illustrating that CEO narcissism is correlated with lower quality accounting information.

Table 4
Earnings Management Model Using Audit Fees

Generalized Least Squares (GLS) Model			
LN Audit Fees			
Variable	**Coefficient**		**Standard Error**
Tenure	-0.00154		0.004105
Narcissism	0.185686	**	0.090894
Size	0.503009	***	0.019819
Economic Recession	0.002568		0.035062
ROA	0.021231		0.15305
Ownership Concentration	-0.00396	***	0.001057
Growth	0.005158		0.003839
Governance Level	-0.05736		0.070507
Constant	2.740495	***	0.406655
Chow	15.01***		
Breusch-Pagan	587.86***		
Hausman	6.52		
Wooldridge	0.773		
Likelihood	1269.12***		
Wald	1089.65***		

Note: The statistical significances of the tests are represented by the following symbols: *10%; **5%; ***1%.
Source: Research data.

5 Conclusion

The exploration of narcissism as an essential determinant in elucidating the management of accounting data is of vital importance, particularly in the Brazilian setting, which is notorious for corruption and impunity. Aiming to fill this gap in the literature, the current research sought to delineate the impact of CEO narcissism on earnings management through accruals, using a sample of 106 non-financial companies listed on the B3 from 2010 to 2019.

Among the variables influencing earnings management within the sampled firms, narcissism, tenure, duality, size, profitability, and the post-2015 economic recession emerged as statistically significant contributors. Managers with elevated levels of narcissism appear to be more inclined to manipulate accounting data to maintain a favorable image among stakeholders. This underscores the need to implement measures to mitigate the impact of narcissistic managers, a trait that undermines the relevance and trustworthiness of accounting information within a company.

The inclusion of a CEO on the board of directors has been identified as detrimental to shareholder interests, undermining the effectiveness of board oversight and increasing CEO discretion, thereby creating an environment conducive to earnings manipulation. Hence, a division of responsibilities between board members and CEOs is advocated as a more organizationally effective approach.

In this way, the findings of this research are consistent with the Expected Utility Theory (EUT), demonstrating that demographic factors and CEO personality traits play a significant role in explaining their financial decisions. These findings contribute valuable insights to the advancement of knowledge in corporate decision making. With respect to the earnings management literature, this study contributes by elucidating the relationship of an additional factor influencing the decisions of those responsible for constructing accounting information. It thus shows that, beyond the characteristics previously discussed in the literature, the psychological profile of managers influences the results presented by accounting.

Understanding these factors provides a deeper insight into the economic reality of the company, reduces assumed risks, and stimulates investment. This is because accounting, as the primary source of financial information about the company, makes it possible to reduce the informational noise that leads to inefficient resource allocations and interferes with the proper functioning of the market.

Additionally, this study underscores the relevance for stakeholders of considering the psychological characteristics of managers. In a practical sense, it signals the importance of monitoring the selection process for individuals who will comprise the board of directors.

The findings herein also serve to inform financial statement regulators that opportunistic behaviors persist, potentially reducing corporate transparency, even in the face of existing legislation and incentives for improved corporate governance. A comprehensive examination of the broader corporate governance context is thus imperative in the assessment of accounting data.

The Brazilian environment is characterized by ownership concentration, weak legislation protecting minority shareholders, a high incidence of financial crimes, and a national culture that encourages normative violations. Therefore, the findings of this research may be applicable to other geographical contexts with similar conditions. Thus, this study demonstrates how CEOs' personalities, combined with geographical contexts similar to the Brazilian environment, can impact the opportunistic strategies adopted.

However, it is prudent to acknowledge the study's limitations and propose future research directions to delve further into this subject. One limitation is the type of narcissism measured by the proxy employed, which pertains more to the social and cultural manifestations of narcissistic managers than to pathological behaviors. Alternative measures of narcissism, such as CEO photo prominence in annual reports, press releases, subscription size, CEO compensation, and media presence, warrant exploration in future studies.

The research had limitations due to the non-disclosure of earnings conference call audios or CEO non-participation, resulting in a limited observational sample. Additional studies using longer time periods or alternative measures of narcissism could serve to generalize the findings to publicly traded firms. Investigating the impact of CFO narcissism on earnings management might also be an interesting path to explore, given the CFO's significant role in conference calls and influence over accounting choices.

While most of the earnings management research has concentrated on aggregate accruals models, there is potential for further research to develop specific accruals models, such as tax expense and accounts receivable, and to conduct cross-sectoral analyses. Research on other dimensions of financial reporting, including the relationship between narcissism and financial fraud, financial statement error detection, and republication, could yield valuable insights. Assessing the degree of accounting conservatism, the readability of accounting information, and the extent of disclosure would also provide meaningful directions for future research.

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Supplementary Material

Supplementary Data 1 – Database 1

Supplementary Data 2 – Database 2

Supplementary Data 3 – Variables and Description

Supplementary Data 4 – STATA Dofile

Supplementary material to this article can be found online at https://doi.org/10.7910/DVN/RGWDUO

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