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RESEARCH ARTICLE

The impact of chief executive officer narcissism on environmental, social, and governance reporting

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Abstract

We analyze the effect of chief executive officer (CEO) narcissism on environmental, social, and governance (ESG) reporting. The study relies partly on hand-collected, visual data and covers 57 German DAX 40 and MDAX companies from 2016 to 2020 (266 company-year observations, Bloomberg database). Looking into the sub-scores of ESG, CEO narcissism has a negative and linear relationship with environment and governance reporting but there is no significant relationship between narcissism and social reporting. Regression analyses further suggest a U-shaped (quadratic) relation between CEO narcissism and ESG reporting: while low to moderate degrees of narcissism affect overall ESG reporting negatively, as CEO levels of narcissism increase so does the level of reporting. Moreover, further analysis has shown that the quantity of reporting is additionally positively related to ESG performance. The study applies and validates a relatively new but easily applicable measure of narcissism and extends narcissism research in the area of curvilinear relationships. We offer several further implications for human resource managers, regulators, auditors, and (non-)financial analysts.

KEYWORDS

corporate social responsibility, environmental policy, stakeholder engagement, strategic decisions, sustainable development, upper echelons theory

1 | INTRODUCTION

Upper echelons theory proposes that, among various other factors, top executives' personal traits influence companies' strategic decisions. Therefore, outcomes may differ between companies, even if all other conditions were equal in the decision-making situation (Hambrick & Mason, 1984). Recent publications have focused on the determinants of corporate social responsibility (CSR) decisions as

societal pressures have increased the importance of socially responsible actions for companies (Beji et al., 2021; Kang et al., 2019; Martínez-Ferrero et al., 2021). We define CSR in this study as the integration of environmental, social, and governance (ESG) aspects into a company's stakeholder management (Carroll, 1999). Companies have a general vested interest in ESG reporting because it secures legitimacy in the eyes of stakeholders (Caputo et al., 2021; Schaltegger et al., 2017) and creates transparency for shareholders, which translates into higher stock valuations (Lueg et al., 2019; Lueg & Pesheva, 2021). Such external, institutional pressures have been identified as important determinants of ESG reporting and performance (Delmas & Toffel, 2004; Grewatsch & Kleindienst, 2017;

List of Abbreviations/Acronyms: CEO, chief executive officer; CFO, chief financial officer; CSO, chief sustainability officer; CSR, corporate social responsibility; DAX, Deutscher Aktienindex; ESG, environmental, social, and governance; EU, European Union; LME, linear mixed-effects; MDAX, Midcap-DAX; NPI, narcissistic personality inventory.

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Preghenella & Battistella, 2021). However, although internal factors, such as top executives' characteristics, are equally likely to affect this, they have not yet been satisfactorily explored (Al-Shammari et al., 2019; Petrenko et al., 2016). Out of all possible governance mechanisms, the board of directors is the most powerful decision-maker and has a pivotal role in meeting the social and environmental commitment to stakeholders (Kang et al., 2019; Martínez-Ferrero et al., 2021; Shahbaz et al., 2020). Upper echelons theory proposes that top executives tend to incorporate their personal values and personality traits into their company's decisions (Chin et al., 2013; Hambrick & Mason, 1984), and this is particularly true for the chief executive officer (CEO) as the single most influential person (Chen et al., 2009). The current literature focuses on their *narcissism* as an influencing personality trait, which is commonly characterized by three traits: grandiose behavior (such as superior rating of oneself), a need for admiration (such as constant craving for attention), and lack of empathy (such as strong egocentrism) (Chatterjee & Hambrick, 2007; Cragun et al., 2020).

At present, only a few papers analyze the relationship between CEO narcissism and ESG performance (e.g., Al-Shammari et al., 2019, 2022; Kim et al., 2018; Petrenko et al., 2016; Tang et al., 2018), and there is, as yet, no evidence regarding the relationship between CEO narcissism and ESG reporting. While ESG performance measures the outcomes of a company's ESG activities, ESG reporting communicates those activities to stakeholders, ensuring transparency and improving stakeholder engagement (Lungu et al., 2011). ESG reporting is even better at revealing CEO narcissism than ESG performance, since one of its explicit purposes is to draw attention to a company and its executives. We engage in the debate on narcissism by posing the research question: *How does CEO narcissism influence ESG reporting?*

We address this question by empirically testing the relationship between CEO narcissism and ESG reporting with mixed-effects regressions. We use hand-collected, visual data for the narcissism variable and archival data of ESG reporting from the German DAX 40 and MDAX. In total, we cover a sample of 57 companies with 266 company-year observations for the business years 2016–2020. In line with previous studies, we use CEOs' signature size as a proxy for narcissism (e.g., Ham et al., 2017, 2018) and the Bloomberg ESG reporting score for ESG reporting (e.g., Li et al., 2018; McBrayer, 2018; Tamimi & Sebastianelli, 2017).

We contribute novel insights into the relationship between CEO narcissism and ESG reporting. Specifically, we disaggregated the individual ESG sub-scores. We find that the overall effect is the product of different sub-effects: CEO narcissism has negative, linear effects on environment and governance reporting, but no distinct effect on social reporting. In contrast, we suggest that the relationship between CEO narcissism and ESG reporting is quadratic (i.e., a U-shape): a low degree of narcissism negatively affects overall ESG reporting, while the effect turns positive as narcissism increases. ESG reporting is also dependent on the ESG performance of the company. The better the ESG performance, the higher the quantity of ESG reporting. Furthermore, we contribute methodologically to measuring narcissism by using the relatively novel, unobtrusive method of signature size. Our

findings support the call for reporting regulations to incorporate these personality-related effects in practice.

The remainder of this study is structured as follows. Section 2 contains our theoretical foundation and develops hypotheses on how CEO narcissism influences ESG reporting. Our research design is explained in Section 3 while Section 4 reports our results. A discussion including main limitations and recommendations concludes the work.

2 | THEORETICAL FOUNDATION

2.1 | ESG reporting

Growing awareness of ESG issues has become a decisive factor in the transformation of corporate purpose over the last decade (Business Roundtable, 2019; Guping et al., 2020; Homroy & Slechten, 2019) and has made ESG an integral component of corporate strategies (Pucheta-Martínez & Chiva-Ortells, 2018). Stakeholders demand that companies behave more sustainably, reduce their environmental footprint, and provide a detailed account of their sustainability activities (Raimo et al., 2021). Companies need to implement both ESG performance measurement and ESG reporting to satisfy their stakeholders' requirements. ESG performance builds on the ESG activities of the company to determine the outcome of CSR, while reporting consists of providing stakeholders with information about these activities (Lungu et al., 2011). In general, non-financial reporting in the form of environmental, social, sustainability, and integrated reports is becoming increasingly relevant (Raimo et al., 2021) resulting in companies not only facing financial but also non-financial business risks if they do not incorporate ESG reporting (García-Sánchez et al., 2019). Non-financial reporting in this context refers to information on, for example, environmental pollution, emissions, waste, human rights, gender equality policy, labor standards, and corporate governance. Compared to financial reporting, non-financial reporting addresses a broader audience, ranging from governments to investors, customers, suppliers, employees, and creditors (Spence, 2009; Vitolla et al., 2019). Although ESG reporting is voluntary for most companies, some already publish information regarding their ESG activities. In this regard, scholars have started to analyze the antecedents of ESG reporting to explain the varying information included in the reports (e.g., de Oliveira et al., 2021; Wang et al., 2022).

2.2 | Upper echelons theory

Hambrick and Mason's (1984) upper echelons theory proposes that top executives' decisions are influenced by their personal values, inclinations, and past experiences. Individual executives will choose organizational strategies that match their leadership schemas and preferences. These decisions affect the company's performance, such as profitability, growth, survival, or ESG (including ESG reporting), so that companies mirror their executives' decisions. However, they add

that both the characteristics and strategic decisions of top executives can also be influenced by their external environment or situational company characteristics, which are thus antecedents of the characteristics of the top executives and/or company outcomes. The combination of situational conditions and executives' characteristics will further enforce certain strategic decisions. Executives' characteristics comprise observable and psychological characteristics. While characteristics such as education or age are observable, cultural aspects, knowledge, and experience are often based on a psychosocial level and are therefore considered unobservable (Hambrick, 2007). Following upper echelons theory, the characteristics of top executives, such as narcissism, can therefore indirectly affect both ESG performance and reporting. Ellis (1898) introduced the term narcissism to psychology as a mental disorder, and it was not until the 1980s that narcissism was no longer considered a disorder but a personality trait (Emmons, 1987; Raskin & Terry, 1988). Thus, narcissism as a personality trait is a relatively new research area, which is the main reason for the limited amount of research studies. Narcissism is rather complex, so numerous definitions exist (Cragun et al., 2020; Pulver, 1970). However, the three major characteristics, according to psychology, can be summarized as: grandiose behavior, need for admiration, and lack of empathy (American Psychiatric Association, 2013). Grandiosity refers to "entitlement, self-centeredness, and a belief that one is better than others," while the need for admiration explains narcissists' demand to be the center of attention (Cragun et al., 2020, p. 909). Furthermore, narcissists tend to have a "lack of empathy toward others and a tendency to exploit situations and persons for personal gain" (Cragun et al., 2020, p. 909). A narcissist tends to be objectively overconfident (Campbell et al., 2004) and denigrates others (Morf & Rhodewalt, 2001), while still craving continuous admiration or having their 'narcissistic supply' needs satisfied (Kernberg, 1975).

2.3 | Hypotheses development

When combined with Hambrick and Mason's (1984) upper echelons theory, narcissism can have a significant impact on CEO organizational performance. As the most influential decisionmakers (Chen et al., 2009), narcissistic CEOs tend to incorporate personal values and preferences into their company's decisions in order to gain praise and attention (Chin et al., 2013). They make decisions that, first, are consistent with their ideology and, second, satisfy their narcissistic supply. However, this chiefly holds for top executives. Mid-level executives only have an internal, not an external, audience from which they could receive praise and attention for their company's socially responsible behavior (Pelster & Schaltegger, 2022). In recent years, reporting of ESG-related information has experienced tremendous growth (Martinez-Ferrero et al., 2021) as sustainability has gained in relevance (Raimo et al., 2021). Hence, CEOs might consider non-financial reports as an extension of themselves to attract the attention of shareholders and other stakeholders. However, due to different levels of prominence, the effects on the individual ESG pillars might vary. For example, if climate change engagement is above average and

reported on, but reporting on social or governance issues is poor, the combined ESG score would detract from a good environmental reporting score. An aggregated ESG score therefore does not necessarily provide an accurate picture of a company's ESG commitment (Aguinis & Glavas, 2012, 2019). In order to identify potential tradeoffs (Wang et al., 2016), we develop three separate hypotheses, one for each pillar.

Al-Shammari et al. (2019) differentiate between internal and external ESG activities in their study. External activities mostly contain environmental aspects allocated to the environment pillar, and internal activities assign social factors to the social pillar, such as responding to employee concerns, or gender in all regards, such as promotions, hiring, equal pay, and training opportunities. They find a positive and significant relationship between external activities and narcissism but no significant effect for internal activities. They reason that external or environmental activities have greater visibility in the public eye and thus satisfy the narcissistic supply. Internal social activities receive little attention because they are not usually visible to the public. Similarly, Homroy and Slechten (2019) underline the importance of the environmental pillar. The environmental performance of companies is subject to strong public and institutional pressure. Extensive environmental reporting is one way to get the attention of numerous stakeholders, and so narcissistic CEOs prefer to engage with or to report from the environmental area as it gets more public attention. However, narcissistic CEOs will tend to be less engaged in social activities, including social reporting, since they are less salient to the public. This is also backed by Lueg and Radlach (2016), who find that companies mainly incorporate environmental controls into their management control systems, while neglecting social ones. A CEO might face constraints to living out their narcissistic personality trait when the governance mechanisms in a company are strong, such as board monitoring of investment strategies (Al-Shammari et al., 2022). Taleatu et al. (2020) found a moderating effect of strong governance mechanisms on chief financial officer (CFO) narcissism and earnings management, that is, the stronger the governance mechanisms, the less a narcissist is able to live out their personality. A narcissistic CEO is less inclined to externally highlight comprehensive governance mechanisms as this further restricts the expression of their personality. Since there is less engagement with this pillar, there is also less information to report. This results in the following hypotheses:

Hypothesis 1a. CEO narcissism positively affects environmental reporting.

Hypothesis 1b. CEO narcissism does not affect social reporting.

Hypothesis 1c. CEO narcissism negatively affects governance reporting.

Cragun et al. (2020) examine the existing literature regarding CEO narcissism and identify five major areas of research in their

meta-analysis which are narcissism and: company performance, innovation and growth, policies and risk, financial leverage, and questionable behavior. The last topic in particular yields a wide range of results showing the significant positive relationship between CEO narcissism and bullying (Regnaud, 2014), the usage of corporate tax shelters (Olsen & Stekelberg, 2016), distorting of financial information (Capalbo et al., 2017), fraud in general, and fraudulent financial reporting (Rijssenbilt & Commandeur, 2013). Narcissists tend to act questionably, as in the above cases, to portray themselves in a way that draws attention and satisfies their narcissistic supply. Pressure and emerging opportunities reinforce CEO misconduct (Schnatterly et al., 2018). This behavior might be amplified by the fact that narcissists tend to be risk-takers (Campbell et al., 2004; Zhu & Chen, 2015b). Thus, narcissists tend to make riskier decisions to gain recognition (Chatterjee & Hambrick, 2011), manipulate policies to obtain the desired outcomes (Buyl et al., 2019; Olsen et al., 2014), or be involved in fraudulent reporting (Rijssenbilt & Commandeur, 2013). Since narcissistic CEOs are more likely to perpetrate financial reporting to prompt admiration from investors (Rijssenbilt & Commandeur, 2013), they might also encourage non-financial reporting to get attention not only from investors, but also from other stakeholders or the public in general. Growing consumer awareness and demand for information about ESG has been one of the most pressing drivers of reporting in the recent decade (Martínez-Ferrero et al., 2021). In contrast to the hypothesized positive influence of CEO narcissism on environmental reporting, the general effect of this personality trait might be a negative one due to fraudulent behavior. However, since CEO narcissism is a rather new research topic, the direction of the actual impact remains unclear. Thus, the second part of this study explores if CEO narcissism influences the overall ESG reporting. We explore these opposing sub-effects by proposing a null hypothesis.

Hypothesis 2. CEO narcissism does not affect overall ESG reporting.

3 | RESEARCH DESIGN

3.1 | Sample and data collection

Our study sample started with 90 companies from the DAX 40 and MDAX as of December 6, 2021, for the period between 2016 and 2020. We measured narcissism through signature size (see Section 3.2) and thus excluded companies for which CEO signatures in the annual reports were not available. We also excluded companies for which Bloomberg ESG scores were unavailable for the entire period, for instance, due to initial public offerings. As usual (Petrenko et al., 2016), we excluded financial and insurance companies due to regulatory differences. We found that signatures in some years had obviously been scaled in the reports and replaced these outliers with the average size of the same executive's signature over the remaining years. We identified that signature sizes generally appear stable over time, meaning that measuring the signature size for one person during

our sample period only has minor variances. Our final sample consisted of 57 companies with 266 company-year observations.

We focused on large, listed companies due to the availability of historical data and publicly available reports. Large companies are more visible and attract the attention and scrutiny of a greater number of stakeholders (Gallo & Christensen, 2011). A CEO who is more in the public eye could be acting out narcissistic traits to a greater extent (Pelster & Schaltegger, 2022). We chose a German setting for data availability. As we measured CEO narcissism by CEO signature size, signed annual reports needed to be available. US companies, for instance, tend to only publish SEC filings with electronic confirmed signatures from which signature size (as a proxy for narcissism) cannot be determined. We did not examine other markets to avoid interference from different environments as business environment can influence CEO discretion (Hambrick, 2007), as well as the relationship between CEO narcissism and ESG (Hambrick & Mason, 1984; Lueg & Borisov, 2014; Pelster & Schaltegger, 2022). Pelster and Schaltegger (2022) propose that the business environment moderates the relationship between personality traits and ESG activities and observe that the influence of middle managers' negative personality traits on their environmental and social preferences is larger for European than for US companies. This is attributed to the fact that European companies operate in a more strictly regulated environment regarding ESG activities. Regional differences may affect the extent of ESG activities, including reporting (Matten & Moon, 2008).

All data were collected from archival and publicly available sources. Company data, such as financial data, and the ESG reporting scores were extracted from the Bloomberg database. ESG performance scores were extracted from the Eikon database. Data concerning narcissism was hand-collected by analyzing the companies' annual reports.

3.2 | Independent variable: CEO narcissism

A prevalent instrument in measuring CEO narcissism is the *narcissistic personality inventory* (NPI) (Al-Shammari et al., 2019; Cragun et al., 2020; Raskin & Terry, 1988; Zhu & Chen, 2015a) in which CEOs provide data for psychometric measures by completing a psychological assessment. However, most CEOs are reluctant to respond to questionnaires about such sensitive traits, which makes it difficult to obtain data (Cycyota & Harrison, 2002; Hambrick et al., 1993; Van Scotter, 2020; Zhu & Chen, 2015a). An alternative is to hire third parties to rate CEOs with regard to their personality by monitoring the CEO through direct observation or watching and reading speeches: However, it is also difficult to get access to qualified observers (Cragun et al., 2020). Thus, most of the existing literature measures CEO narcissism with an unobtrusive indicator of personality approach as developed by Chatterjee and Hambrick (2007, 2011) (e.g., Al-Shammari et al., 2019, 2022; Kim et al., 2018; Zhu & Chen, 2015a, 2015b). These measure narcissism through, for instance, the size of the CEO's picture in the annual report or their pay relative to that of the next highest paid executive, although it should be noted

that recent publications have questioned the reliability and validity of the unobtrusive approach (Cragun et al., 2020; Van Scotter, 2020). Ham et al. (2017, 2018) have introduced a further unobtrusive approach of measuring CEOs' signature size as a proxy for narcissism. They propose that a larger signature represents the exploitative nature of narcissism and test for the reliability of their conjecture: However, they do not specify the threshold at which someone can be considered a narcissist. This is a little surprising since narcissism exists, to some degree, in all people (Jordan et al., 2014). Therefore, the narcissistic measure is relative among different peer groups.

The signature approach is based on the assumptions of graphology, the research field of handwriting, in which researchers assign underlying personality traits based on people's writing (McNeal, 1967). Graphologists typically suppose that handwriting is not simply a manual movement, but the expression of personality, as even if it bears traces of writing training, handwriting creates graphic products with distinctive individuality (Bell, 1948). Frith (1980) argues that if our handwriting were not dependent on our cognitive abilities and thus our personality, handwriting across the world would be almost identical: In fact, experiments have shown that whenever a person has lost the use of the dominant hand with which they normally write and sign, individual characters in the handwriting can still be found if the person has learned to write with the other hand, the feet, or the mouth (Saudek, 2018). Melcher (1920) even reveals that the handwriting of persons with dual personalities changes according to the current dominating personality. The individuality of the handwriting is thus an expression of the personality that generates the writing, so that the characteristics of the handwriting give clues to the personality that produced it (Bell, 1948). In the late 1900s, graphology as a science was widely applied in disciplines such as psychology, law, education, and business (McNeal, 1967). There are mixed opinions about whether graphology can predict a person's character traits (Beyerstein & Beyerstein, 1992; Fluckiger et al., 1961). Yet Mailhos et al. (2016) argue that critics mainly focus on the theory as a whole, rather than analyzing its specific hypotheses and particular methods for determining personality traits. Thus, graphology methods differ according to the researchers' goals and research design (McNeal, 1967). For example, measurement methods could be the size of handwriting, speed of writing, or the linking of words (Allport, 2016). As a result, graphology can only be considered successful if the correct measurement method is chosen for the purpose of the study as each method examines something different (McNeal, 1967). In general, narcissism research has focused on signature size as a specimen. This is mainly the result of research by Zweigenhaft and Marlowe (1973) who examine whether one's signature size increases with self-esteem. To increase their self-esteem, participants were told that they had done extremely well in an ability test, ranking among the top 10% of all students at the University of California. Comparing signature sizes before and after the experiment, the study shows that an increase in self-esteem correlates with an enlargement in signature size. As a proxy for self-esteem, Zweigenhaft (1970) also investigated the relationship between social status and signature size and found that signatures increased with the

participants' education level, ranging from undergraduate to post-graduate. Swanson and Price (1972) support these findings by examining signatures on job applications and find that the size of signatures increases according to social status, for example, superintendent, pupil personnel director, or secretary. Zweigenhaft and Marlowe (1973) assume that larger signatures reflect the expansive, satisfied, or enthusiastic mood usually evoked by successful achievement in a personally significant and important task. Self-esteem can be generally defined as a "global, affective evaluation of the self that can range anywhere from very negative to very positive" (Bosson et al., 2008, p. 1418). Since narcissists are generally considered to be overly self-absorbed, it is expected that narcissism results in high levels of self-regard (Bosson et al., 2008) and thus in larger signatures. Mahoney (1973) was unable to replicate Zweigenhaft and Marlowe's (1973) results when presenting participants with a questionnaire as a different measure of self-esteem. Therefore, Jorgenson (1977) further developed Zweigenhaft and Marlowe's (1973) hypothesis by examining the correlation between dominance and signature size. Thus, he assumes that the relationship between self-esteem and signature size found by Zweigenhaft and Marlowe (1973) is rather driven by a sense of control or influence over others, for example, by dominance. Dominance in general can be described as an individual's drive and energy to pursue power over others. Thereby, dominant individuals will strive to obtain the admiration and social attention of individuals (Johnson et al., 2012). Jorgenson (1977) analyzed students' signature size as well as a dominance measure assessed from a Personality Research Form and found that dominance is reflected in one's signature size. The personality trait of dominance, however, is included in the American Psychiatric Association's (2013) definition of narcissism, which identifies the need for admiration as one of the three main characteristics of narcissism. Like the impact of dominance, Karami (2017) finds that extroverts have larger signatures than introverts. He suggests that people leave their individual mark in signatures and that large signatures are a way to attract attention. Extroverts are characterized, among other factors, by strong engagement with the outside world, enjoyment in interacting with people, enthusiasm, action orientation, high group visibility, talkativeness, and assertiveness (Rubinstein, 2016). O'Boyle et al. (2014) mention that being extroverted is a necessity for narcissists to satisfy their narcissistic supply. This is justified by the fact that narcissists can only achieve their desired goal of being admired and obeyed by sharing their own positive self-image with others. In addition, Snyder and Fromkin (1977) have studied whether a person who has a strong need to be unique expresses this in a larger signature. They hypothesize that a person who aims to be perceived as unique may use their signature as an instrument to reflect individualism. To support their assumptions, they analyzed the signatures of students who ranked particularly high or low on the Uniqueness Scale and were able to show that signatures of high-uniqueness students are larger than those of low-uniqueness students. In general, the need for uniqueness is defined as a positive striving for abnormality in comparison to others (Ronningstam & Gunderson, 1990; Snyder & Fromkin, 1977). Transferring this concept to narcissists, who have a strong need for achievement and a low

need for affiliation, they therefore often differentiate themselves from others in a competitive manner (Ohmann & Burgmer, 2016). This is driven by their grandiose personality and therefore the desire to be better than others. Thus, striving for uniqueness comes with various benefits for narcissists such as more attention (Taylor et al., 1978), increasing self-esteem (Ditto & Griffin, 1993), and enhancement of their social status (Bellezza et al., 2014) which satisfy their narcissistic supply. Uniqueness can therefore be considered as a necessity condition for narcissists.

These assumptions are supported by various scholars who have tested whether narcissism measured by the NPI correlates with dimensions of personality including self-esteem (e.g., Barry et al., 2007; Bradlee & Emmons, 1992; Brown & Zeigler-Hill, 2004; Emmons, 1984), dominance (e.g., Bradlee & Emmons, 1992; Buss & Chiodo, 1991; Emmons, 1984; Gurtman, 1992; Raskin & Terry, 1988), uniqueness (e.g., Emmons, 1984; Ham et al., 2017), and extroversion (e.g., Buss & Chiodo, 1991; Emmons, 1984; Paulhus & Williams, 2002; Raskin & Terry, 1988; Vernon et al., 2008). These studies show that all these variables correlate positively with narcissism. Researchers take advantage of the relationship between self-esteem, dominance, uniqueness, extroversion, and narcissism in practice by using questions attributable to these personality dimensions in the measurement of narcissism (Emmons, 1984; Paulhus, 2001). These results indicate that researchers have consistently identified several personality traits that comprise narcissism. Since several variables related to narcissism are positively correlated with signature size, the question arises as to whether narcissism can also be measured directly by signature size. To confirm the relationship between signature size and narcissism, Dillon (1988) examined the relationship between students' embellishment of signatures on birthday cards and their scores on the Narcissism Scale of the Millon Clinical Multiaxial Inventory. She found that individuals who embellish their signatures have significantly higher narcissism scores than ones who do not. Since the study by Dillon (1988) focused on embellishments of signatures, further validation was required. Thus, Ham et al. (2017) set up an experiment analyzing the relationship between signature size quartiles and the NPI narcissism score of students. They find a positive and significant correlation between signatures and the NPI, implying that individuals with larger signatures are more likely to exhibit narcissistic traits. These findings have been further validated by O'Reilly et al. (2018) who test the relationship between CEOs' signature sizes and the NPI completed by CEOs' employees, revealing a significant positive correlation.

These theoretically presented findings can be mirrored in practice by analyzing Donald Trump's personality and signature. Thus, Visser et al. (2017) and Nai and Maier (2018) analyzed whether Donald Trump can be considered a narcissist by approaching professional personality psychologists. After analyzing Trump's speeches and appearances in the campaign for the office of the 45th president of the United States, both studies conclude that Trump can be considered highly narcissistic. Fittingly, Donald Trump's signature appears oversized compared to others (Figure 1).

Based on this research, argumentation, and validation, many researchers have followed the approach of using signature sizes as a



FIGURE 1 Donald Trump's signature on the tax overhaul plan

measurement of narcissism (e.g., Aabo et al., 2020; Chen et al., 2021; Chou et al., 2021; Ham et al., 2017, 2018; Takada et al., 2021; Zhou, 2017), showing that signature size has become a widely accepted unobtrusive indicator for narcissism research. Even though signature measurement cannot cover all facets of narcissism (Karami, 2017), a number of its traits correlate positively with signature sizes, resulting in a greater likelihood of discovering a narcissist truthfully via their signature.

Like Ham et al. (2017, 2018), we collected CEOs' signatures from annual reports available on companies' websites. To measure signature size, we drew a rectangle around each CEO's signature, whereby each side of the rectangle touches the endpoints of the signature. We determined its area by multiplying the length and width (in centimeters) of the rectangle. To account for the length of the participant's name, we divided the size of the area by the number of letters in the executive's name.

3.3 | Dependent variables: ESG reporting

We used the Bloomberg ESG reporting score (composite as well as those for each of the three ESG pillars) as a proxy for the extent of ESG reporting. The score measures transparency by using a multidimensional construct based on approximately 120 quantitative and qualitative measures to rate companies on their ESG reporting (Li et al., 2018; Tamimi & Sebastianelli, 2017). Thus, the more information disclosed, the higher the Bloomberg ESG score, ranging from 0 (no reporting) to 100 (complete reporting) (McBrayer, 2018; Tamimi & Sebastianelli, 2017). Therefore, the Bloomberg ESG reporting score solely measures reporting quantity and not quality. Additionally, the Bloomberg ESG reporting score is a relative score made up of ESG reporting elements related to the companies' industry (weighting relevance and importance for each industry) to ensure that companies are rated only on data relevant to their industry (Giannarakis et al., 2014; McBrayer, 2018) and can therefore be seen as a metric of the reporting's breadth (Manita et al., 2018).

3.4 | Control variables

We controlled for ESG performance by using the scores for the individual pillars since disclosure might be affected by the actual ESG performance. Narcissists might disclose less if ESG performance is poor to avoid tarnishing the positive attention they receive from others. This is in line with the management obfuscation hypothesis. The hypothesis states that directors have a greater incentive to conceal information when corporate performance is poor, but are willing to be candid in their disclosures when their companies are performing well (Li, 2008). Furthermore, we controlled for company size, measured by the natural logarithm of total assets (Dang et al., 2018; Läger et al., 2022). According to the slack resources conjecture, companies with more assets can utilize slack resources to tend to sustainability-related pressures and would thus provide more ESG reporting (Gallo & Christensen, 2011). Similarly, we controlled for company age, as older companies have more experience with ESG activities and thus have built up human capital to deal with them. In contrast, newer companies and their employees are less likely to have the same experience and expertise (D'Amato & Falivena, 2020). We controlled for the company's financial performance with Tobin's Q as a proxy (Al-Shammari et al., 2019; Petrenko et al., 2016). Companies with good performance have a higher interest in reporting on their success; at the same time, successful companies generate more slack resources that can be employed for ESG reporting (Campbell, 2007; Waddock & Graves, 1997). Finally, we controlled for leverage, as creditors are interested in the ESG activities of the companies to whom they lend capital. Companies with a high leverage ratio might disclose more information (Chan et al., 2014). We measure leverage as the debt-to-equity ratio (Ham et al., 2017). Additionally, we further considered control variables such as CEO age, CEO tenure, return on assets, return on equity, EBIT, and sales growth. However, none of them appeared to be significant for at least two of our four dependent variables. Therefore, we did not consider them in our analysis.

3.5 | Models

To test our hypotheses, we performed correlation and regression analysis between CEO narcissism and the ESG score, as well as its three individual pillars, based on a panel of 57 companies over a 5-year period for 266 company-year observations. We applied a multilevel linear mixed-effects (LME) regression, which is robust to violations of various statistical assumptions in the areas of parameter estimates and significance levels (Beck et al., 2018; Drempetic et al., 2020). We used the *linktest* to uncover the model specification (e.g., linear, quadratic, and cubic) that best explains the relationship between the dependent and independent variables. Our tests suggest that a quadratic rather than a linear model best describes the relationship between CEO narcissism and social/ESG reporting. Even before running the regressions, we could state that we had not yet found the *optimal* model to describe the relationship between CEO narcissism and *environmental* reporting, meaning that the *linktest* was not significant for any of the tested model specifications. However, we are

confident in alternatively applying a linear model for this relationship as the *Wald Chi2* is significant ($p < .05$) for this model. For governance reporting a linear model appears to be the best fit according to our tests. We only include control variables which have shown a significant relationship with the independent variables (see Table 1).

We used the following models to test our hypotheses:

$$\begin{aligned} \text{Environmental} - \text{Score} = & \beta 0 + \beta 1 \text{CEONarcissism}_{i,t} \\ & + \beta 2 \text{EnvironmentalPerformance}_{i,t} \\ & + \beta 3 \text{FirmSize}_{i,t} + \beta 4 \text{FirmAge}_{i,t} \\ & + \beta 5 \text{Performance}_{i,t} + \beta 6 \text{Leverage}_{i,t} + \epsilon, \end{aligned}$$

TABLE 1 Variable definitions

Name	Definition
<i>ESG reporting</i>	Bloomberg's proprietary score based on the extent to which a company discloses environmental, social, and governance issues. The score ranges from 0 to 100. Higher scores reflect greater reporting of ESG aspects.
<i>Environmental reporting</i>	Bloomberg's proprietary score based on the extent of a company's environmental reporting. Higher scores reflect greater environmental reporting.
<i>Social reporting</i>	Bloomberg's proprietary score based on the extent of a company's social reporting. Higher scores reflect greater social reporting.
<i>Governance reporting</i>	Bloomberg's proprietary score based on the extent of a company's governance reporting. Higher scores reflect greater governance reporting.
<i>CEO narcissism</i>	Metric for the size of the area per letter of the signature. A rectangle is drawn around each executive's signature, with each side of the rectangle touching the outermost endpoint of the signature. The area occupied by the signature is determined by multiplying the length and width (in centimeters) of the rectangle. The square area of the rectangle is then divided by the number of letters in the executive's name.
<i>ESG performance</i>	Eikon's proprietary score based on the extent to which a company fulfills environmental, social and governance issues. The score ranges from 0 to 100. Higher scores reflect greater performance of ESG aspects.
<i>Environmental performance</i>	Eikon's proprietary score based on the extent of a company's environmental performance. Higher scores reflect greater environmental performance.
<i>Social performance</i>	Eikon's proprietary score based on the extent of a company's social performance. Higher scores reflect greater social performance.
<i>Governance performance</i>	Eikon's proprietary score based on the extent of a company's governance performance. Higher scores reflect greater governance performance.
<i>Company size</i>	Natural log of total assets.
<i>Company age</i>	Number of years since company formation.
<i>Leverage</i>	Debt-to-equity ratio.
<i>Performance</i>	Tobin's Q.

$$\begin{aligned} \text{Social - Score} = & \beta_0 + \beta_1 \text{CEONarcissism}_{i,t} + \beta_2 \text{CEONarcissim}_{i,t}^2 \\ & + \beta_3 \text{SocialPerformance}_{i,t} + \beta_4 \text{FirmSize}_{i,t} + \beta_5 \text{FirmAge}_{i,t} \\ & + \beta_6 \text{Performance}_{i,t} + \beta_7 \text{Leverage}_{i,t} + \varepsilon, \end{aligned}$$

$$\begin{aligned} \text{Governance - Score} = & \beta_0 - \beta_1 \text{CEONarcissim}_{i,t} \\ & + \beta_2 \text{GovernancePerformance}_{i,t} + \beta_3 \text{FirmSize}_{i,t} \\ & + \beta_4 \text{FirmAge}_{i,t} + \beta_5 \text{Performance}_{i,t} + \beta_6 \text{Leverage}_{i,t} \\ & + \varepsilon, \end{aligned}$$

$$\begin{aligned} \text{ESG - Score} = & \beta_0 \pm \beta_1 \text{CEONarcissim}_{i,t} \pm \beta_2 \text{CEONarcissim}_{i,t}^2 \\ & + \beta_3 \text{ESGPerformance}_{i,t} + \beta_4 \text{FirmSize}_{i,t} + \beta_5 \text{FirmAge}_{i,t} \\ & + \beta_6 \text{Performance}_{i,t} + \beta_7 \text{Leverage}_{i,t} + \varepsilon. \end{aligned}$$

4 | RESULTS

4.1 | Descriptive statistics

Table 2 reports the descriptive statistics for our variables. The ESG scores ranged between 0 and 80.70 on a possible scale of 0 to 100. Governance reporting showed the highest mean (56.56), while environmental reporting had the lowest (41.02). Social reporting ranged between the other two pillars with a mean of 49.60. CEO narcissism ranged from 0.09 to 0.98 with a mean of 0.4.

Table 3 displays correlations between our variables. CEO narcissism correlated significantly with social (.10) and governance reporting (-.15). As expected, the correlation between CEO narcissism and governance reporting was negative. The correlation between company size and all the ESG variables was highly significant. The same holds for ESG performance, its pillars, and all ESG reporting scores. Performance was highly significant but correlated negatively with all ESG

variables. Finding no significant correlation between CEO narcissism and ESG and environmental reporting supported our impression that the relationship between CEO narcissism and ESG and environmental reporting is not linear.

4.2 | Hypotheses tests (Hypotheses 1a–1c)

Table 4 reports the results for our hypotheses. Model 1 shows the relationship between the dependent variable and independent variable without considering control variables. In Model 2, we added our control variables. Hypothesis 1a states that there is a positive relationship between CEO narcissism and environmental reporting. Table 4 shows that CEO narcissism was significantly and negatively associated with environmental reporting ($\beta = -7.971, p < .05$). Therefore, Hypothesis 1a cannot be supported. Adding our control variables did not change our results but revealed that environmental performance ($\beta = 0.177, p < .01$), company size ($\beta = 2.791, p < .05$), and company age ($\beta = 0.046, p < .05$) were positively and highly significantly associated with ESG reporting.

Hypothesis 1b posits that there will be no significant relationship between CEO narcissism and social reporting. Table 4 shows no significant relation between CEO narcissism and social reporting which supports Hypothesis 1b. Adding our control variables did not change our results. The only significant relationships were between social performance and social reporting ($\beta = 0.205, p < .01$) and company size and social reporting ($\beta = 2.751, p < .05$).

Hypothesis 1c states that there will be a negative relationship between CEO narcissism and governance reporting. Table 4 shows that CEO narcissism was significantly and negatively associated with

TABLE 2 Descriptive statistics

Variable	N	Mean	SD	Min	q25	Median	q75	Max
1. ESG reporting	266	46.50	13.97	7.85	39.26	48.76	56.61	73.55
2. Environmental reporting	266	41.02	17.49	0.00	32.56	42.64	54.26	77.52
3. Social reporting	266	49.60	14.06	12.28	40.35	50.88	59.65	80.70
4. Governance reporting	266	56.56	10.94	23.21	50.00	57.14	64.29	78.57
5. CEO narcissism	266	0.40	0.20	0.09	0.28	0.36	0.51	0.98
6. ESG performance	266	66.27	19.42	3.91	55.67	70.64	81.71	94.01
7. Environmental performance	266	62.40	25.18	0.00	44.31	68.98	83.57	96.78
8. Social performance	266	71.65	21.05	3.01	61.81	75.97	87.43	97.74
9. Governance performance	266	61.35	21.16	8.56	46.42	64.96	79.00	98.05
10. Company size	266	9.53	1.49	6.08	8.45	9.28	10.56	13.12
11. Company age	266	75.76	62.30	0.00	20.00	70.00	127.00	352.00
12. Performance	266	1.81	1.47	0.48	1.11	1.32	2.06	13.11
13. Leverage	266	89.45	113.04	0.00	28.38	68.60	104.55	1108.00

Note: ESG reporting/Environmental reporting/Social reporting/Governance reporting: Bloomberg's proprietary score based on the extent of a company's ESG reporting and that of its individual pillars. Higher scores reflect greater reporting; CEO narcissism: metric for the size of the area per letter of the signature; ESG performance/Environmental performance/Social performance/Governance performance: Eikon's proprietary score based on the extent of a company's ESG performance and that of its individual pillars. Higher scores reflect greater performance; Company size: natural log of total assets; Company age: number of years since company formation; Leverage: debt-to-equity ratio; Performance: Tobin's Q. We further tested control variables such as CEO age, CEO tenure, return on assets, return on equity, EBIT, and sales growth but did not include them because no significant relationships were present.

TABLE 3 Correlation table

Variables and scales	1	2	3	4	5	6	7	8	9	10	11	12
1. ESG reporting												
2. Environmental reporting	.97***											
3. Social reporting	.86***	.77***										
4. Governance reporting	.70***	.56***	.54***									
5. CEO narcissism	.00	.01	.10*	-.15**								
6. ESG performance	.71***	.66***	.64***	.59***	.13**							
7. Environmental performance	.77***	.74***	.66***	.52***	.10*	.88***						
8. Social performance	.63***	.57***	.63***	.53***	.14**	.92***	.74***					
9. Governance performance	.43***	.40***	.34***	.45***	.09	.75***	.49***	.56***				
10. Company size	.47***	.45***	.35***	.37***	.09	.47***	.55***	.36***	.33***			
11. Company age	.22***	.23***	.19***	.07	.04	.17***	.23***	.19***	.00	.14**		
12. Performance	-.23***	-.23***	-.18***	-.16***	.05	-.10	-.17***	-.01	-.10	-.50***	-.06	
13. Leverage	.08	.07	.10	.03	.06	.13**	.13**	.11*	.12*	.29***	-.18***	-.16**

Note: $N = 266$. *ESG reporting/Environmental reporting/Social reporting/Governance reporting*: Bloomberg's proprietary score based on the extent of a company's ESG reporting and that of its individual pillars. Higher scores reflect greater reporting; *CEO narcissism*: metric for the size of the area per letter of the signature; *ESG performance/Environmental performance/Social performance/Governance performance*: Eikon's proprietary score based on the extent of a company's ESG performance and that of its individual pillars. Higher scores reflect greater performance; *Company size*: natural log of total assets; *Company age*: number of years since company formation; *Leverage*: debt-to-equity ratio; *Performance*: Tobin's Q. We further tested control variables such as CEO age, CEO tenure, return on assets, return on equity, EBIT, and sales growth but did not include them because no significant relationships were present.

* $p < .1$. ** $p < .05$. *** $p < .01$.

TABLE 4 Effects of CEO narcissism on E, S, and G reporting (linear mixed-effects models)

	Environmental reporting		Social reporting		Governance reporting	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	43.359*** (16.49)	4.503 (0.38)	51.258*** (19.46)	8.426 (0.71)	60.385*** (28.95)	26.677*** (3.78)
CEO narcissism	-7.971** (-2.17)	-6.303** (-2.02)	-10.889 (-1.18)	-7.630 (-0.85)	-10.333** (-2.54)	-10.971*** (-3.09)
CEO narcissism ²			9.589 (1.18)	7.591 (0.87)		
ESG performance		0.177*** (3.05)		0.205*** (3.43)		0.264*** (8.62)
Company size		2.791** (2.12)		2.751** (2.49)		1.918** (2.49)
Company age		0.046** (2.09)		0.021 (1.27)		0.008 (0.45)
Performance		-1.557 (-1.42)		-0.267 (-0.41)		-0.198 (-0.43)
Leverage		0.004 (0.79)		0.003 (0.71)		-0.006 (-1.49)
Observations	266	266	266	266	266	266
Wald Chi2	4.72**	56.11***	1.43	39.71***	6.47**	123.20**
Linktest (_hatsq)	0.00		0.641		0.156	

Note: Standard errors are robust; z-statistics are in parentheses. *ESG reporting/Environmental reporting/Social reporting/Governance reporting*: Bloomberg's proprietary score based on the extent of a company's ESG reporting and that of its individual pillars. Higher scores reflect greater reporting; *CEO narcissism*: metric for the size of the area per letter of the signature; *ESG performance/Environmental performance/Social performance/Governance performance*: Eikon's proprietary score based on the extent of a company's ESG performance and that of its individual pillars. Higher scores reflect greater performance; *Company size*: natural log of total assets; *Company age*: number of years since company formation; *Leverage*: debt-to-equity ratio; *Performance*: Tobin's Q. We further tested control variables such as CEO age, CEO tenure, return on assets, return on equity, EBIT, and sales growth but did not include them because no significant relationships were present.

* $p < .1$. ** $p < .05$. *** $p < .01$.

governance reporting ($\beta = -10.333$, $p < .05$). Thus, Hypothesis 1c is supported. In line with the previous analyses, governance performance ($\beta = 0.264$, $p < .01$) and company size ($\beta = 1.918$, $p < .05$) were positively and highly significantly associated with ESG reporting.

4.3 | Explorative results (Hypothesis 2)

In the second part of this study, we explored the relationship between CEO narcissism and ESG reporting. As with the other models, testing for linearity and model specification by using the *linktest* was conducted at first. Table 5 shows the results of the *linktest* indicating that the relationship between CEO narcissism and ESG reporting is quadratic rather than linear. This is the case since *hatsq* is significant for ESG reporting, but insignificant when including the squared ESG reporting variable.

Model 1 in Table 5 showed that CEO narcissism is significantly and negatively associated with ESG reporting ($\beta = -24.428$, $p < .05$). However, the coefficient for quadratic narcissism was positive and significant at the 10% level ($\beta = 17.216$, $p < .1$). Adding our control variables did not change our results from Model 1. Nevertheless, ESG performance ($\beta = 0.320$, $p < .01$), company size ($\beta = 2.207$, $p < .05$),

TABLE 5 Effect of CEO narcissism on ESG reporting (linear mixed-effects models)

	ESG reporting	
	Model 1	Model 2
Intercept	52.113*** (18.40)	8.481 (0.97)
CEO narcissism	-24.428** (-2.17)	-19.491** (-2.47)
CEO narcissism ²	17.216* (1.78)	14.305* (1.74)
ESG performance		0.320*** (6.41)
Company size		2.207** (2.41)
Company age		0.027* (1.73)
Performance		-0.972 (-1.35)
Leverage		0.001 (0.37)
Observations	266	266
Wald Chi2	6.11**	103.48***
Linktest (_hatsq)	0.272	

Note: Standard errors are robust; z-statistics are in parentheses. ESG reporting/Environmental reporting/Social reporting/Governance reporting: Bloomberg's proprietary score based on the extent of a company's ESG reporting and that of its individual pillars. Higher scores reflect greater reporting; CEO narcissism: metric for the size of the area per letter of the signature; ESG performance/Environmental performance/Social performance/Governance performance: Eikon's proprietary score based on the extent of a company's ESG performance and that of its individual pillars. Higher scores reflect greater performance; Company size: natural log of total assets; Company age: number of years since company formation; Leverage: debt-to-equity ratio; Performance: Tobin's Q. We further tested control variables such as CEO age, CEO tenure, return on assets, return on equity, EBIT, and sales growth but did not include them because no significant relationships were present.

* $p < .1$. ** $p < .05$. *** $p < .01$.

and company age ($\beta = 0.027$, $p < .1$) were positively and significantly associated with ESG reporting.

4.4 | Robustness checks

Before applying the LME model for our main analyses, we conducted several regression assumption tests to ensure finding the best linear unbiased estimators (Wooldridge, 2010). This included tests for linearity, model fit, autocorrelation, heteroscedasticity, multicollinearity, and normality (Pesaran, 2015; Wooldridge, 2010). Testing for linearity and model specification using the *linktest* revealed that the relationship between CEO narcissism and environmental reporting was not linear, quadratic, or cubic, while social reporting appears to be quadratic and governance linear. Table 4 depicts the results of the *linktest*. While we were not able to detect the best model specification for environmental reporting through our tests as the *hatsq* remained significant in all models tested, we applied a linear model as the *Wald Chi2* is significant ($p < .05$) for this model. If our model specification was correct, the predicted value squared *hatsq* would have no explanatory power and thus would not be significant in the tested model. We found that a linear model fits the relationship between CEO narcissism and social reporting and CEO narcissism and governance reporting best.

We found autocorrelation for the governance model and heteroscedasticity between the residuals for all models, which violated our assumptions. Thus, we applied robust standard errors to all models (Wooldridge, 2010). We did not find multicollinearity between our variables in any model. Lastly, the residuals were not normally distributed in our models. However, we were able to disregard the violation of this assumption violation due to the central limit theorem (Wooldridge, 2010).

To ensure the robustness of our results, we reran the analysis using an alternative regression model. Since LME models are robust to violations of statistical assumptions such as parameter estimates or significance levels (Beck et al., 2018; Drempevic et al., 2020), we used this method for our main analysis. Nevertheless, another approach, which is applicable to our data, is the random-effects model (Wooldridge, 2010). To ensure the applicability of this model, we applied the Hausmann test, which suggested applying a random-effects model (Cameron & Trivedi, 2005). To further validate the choice of a random-effects model, we performed the Breusch-Pagan Lagrange multiplier test and got further support for the chosen model. Where differences across entities are expected to have an impact on the dependent variables, random effects should be used (Torres-Reyna, 2007). When we repeated our analyses with the random-effects model, we obtained the same results as with the LME model, although minor variations in coefficients and significance levels for control variables occurred (Table 6; Table 7).

Hypotheses 1b and 1c were again supported at the same significance level. Similarly, the coefficients of Hypothesis 1a as well as for the explorative part (Hypothesis 2) were significant at the same significance level, showing no support for these hypotheses but a

TABLE 6 Effects of CEO narcissism on E, S, and G reporting (random-effects models)

Variables	Environmental reporting		Social reporting		Governance reporting	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	43.36*** (16.46)	4.291 (0.37)	51.258*** (19.38)	8.526 (0.71)	60.394*** (31.58)	26.316*** (3.71)
CEO narcissism	-7.975** (-2.17)	-6.117* (-1.93)	-10.879 (-1.18)	-7.620 (-0.84)	-10.361** (-2.54)	-10.751*** (-2.95)
CEO narcissism ²			9.564 (1.17)	7.600 (0.85)		
ESG performance		0.191*** (3.16)		0.207*** (3.41)		0.27*** (8.74)
Company size		2.724** (2.09)		2.728** (2.45)		1.914** (2.43)
Company age		0.043** (1.98)		0.021 (1.25)		0.009 (0.50)
Performance		-1.464 (-1.38)		-0.267 (-0.41)		-0.291 (-0.59)
Leverage		0.003 (0.71)		0.003 (0.68)		-0.006 (-1.41)
Observations	266	266	266	266	266	266
Wald Chi2	4.71**	60.27***	1.41	39.20***	6.44**	127.26***

Note: Standard errors are robust; z-statistics are in parentheses. *ESG reporting/Environmental reporting/Social reporting/Governance reporting*: Bloomberg's proprietary score based on the extent of a company's ESG reporting and that of its individual pillars. Higher scores reflect greater reporting; *CEO narcissism*: metric for the size of the area per letter of the signature; *ESG performance/Environmental performance/Social performance/Governance performance*: Eikon's proprietary score based on the extent of a company's ESG performance and that of its individual pillars. Higher scores reflect greater performance; *Company size*: natural log of total assets; *Company age*: number of years since company formation; *Leverage*: debt-to-equity ratio; *Performance*: Tobin's Q. We further tested control variables such as CEO age, CEO tenure, return on assets, return on equity, EBIT, and sales growth but did not include them because no significant relationships were present.

* $p < .1$. ** $p < .05$. *** $p < .01$.

TABLE 7 Effects of CEO narcissism on ESG reporting (random-effects models)

Variables	ESG reporting	
	Model 1	Model 2
Intercept	52.113*** (18.33)	8.444 (0.95)
CEO narcissism	-24.426** (-2.16)	-19.509** (-2.43)
CEO narcissism ²	17.212* (1.78)	14.319* (1.72)
ESG performance		0.319*** (6.29)
Company size		2.218** (2.38)
Company age		0.027* (1.72)
Performance		-0.979 (-1.34)
Leverage		0.001 (0.37)
Observations	266	266
Wald Chi2	6.07**	100.14***

Note: Standard errors are robust; z-statistics are in parentheses. *ESG reporting/Environmental reporting/Social reporting/Governance reporting*: Bloomberg's proprietary score based on the extent of a company's ESG reporting and that of its individual pillars. Higher scores reflect greater reporting; *CEO narcissism*: metric for the size of the area per letter of the signature; *ESG performance/Environmental performance/Social performance/Governance performance*: Eikon's proprietary score based on the extent of a company's ESG performance and that of its individual pillars. Higher scores reflect greater performance; *Company size*: natural log of total assets; *Company age*: number of years since company formation; *Leverage*: debt-to-equity ratio; *Performance*: Tobin's Q. We further tested control variables such as CEO age, CEO tenure, return on assets, return on equity, EBIT, and sales growth but did not include them because no significant relationships were present.

* $p < .1$. ** $p < .05$. *** $p < .01$.

curvilinear relationship for ESG reporting and a negative relationship for environmental reporting. The same outcomes using a different model reinforced the robustness of our results.

5 | DISCUSSION

5.1 | Contribution to research

The first part of the study examined the impact of CEO narcissism on disaggregated ESG scores. Being the first paper to examine these relationships, we predicted a positive linear relationship between environmental reporting and CEO narcissism, which was not supported by our results. In contrast, our results showed a negative relationship, that is, the more narcissistic the CEO, the lower the environmental reporting. Yet the unexpected results might be due to the fact that we were not able to identify the correct model when conducting the model specification test. Therefore, we believe there is a reasonable possibility that the influence is still a positive one. Future researchers should seize this opportunity for theory building and explore this conundrum in more detail. One potential reason for a negative effect could be that narcissists prefer positive attention to negative (Van Scotter, 2020). Since environmental impact is a current and sensitive topic (Homroy & Slechten, 2019), it is more likely to easily receive negative attention compared to the other two pillars. For example, Matsumura et al. (2014) find that while reporting carbon emissions generally has a positive impact on company value in comparison to non-reporting companies, each additional thousand tons of emissions

reported reduces the company value. Hence, companies face penalties either way. Accordingly, a CEO might seek to omit negative information, such as actual carbon emissions, from their reporting—which would lead to low levels of environmental reporting. This assumption is further underlined by our results on how environmental performance affects the amount of reporting. Thus, better performance yields more reporting, while poorer performance causes less reporting. Even though this behavior is not technically fraudulent, some CEOs might cross this line of just omitting information and report false information. This may be fostered by the fact that narcissists tend to be risk-takers (Zhu & Chen, 2015b). Examples such as Dieselgate have shown that a company's senior management has, in the past, crossed the line of omitting information and instead manipulated it, leading to better ESG reporting. This was further enhanced by having poor governance (Bouzzine & Lueg, 2020; Donning et al., 2019).

As predicted by our hypothesis, CEO narcissism has no impact on social reporting. Since social activities receive less media attention, narcissistic CEOs have no incentive to engage in social reporting (Pelster & Schaltegger, 2022). This finding is in line with previous results by Al-Shammari et al. (2019), who also reveal a non-significant relationship between CEO narcissism and internal ESG activities. Similarly, Pelster and Schaltegger (2022) identify that narcissists are much less likely to engage in activities lacking external representation or media attention.

Lastly, we found support for our final hypothesis, stating that CEO narcissism negatively influences governance reporting. Whenever governance mechanisms in a company are strong, narcissists face constraints in acting out their personality trait. In fact, they would be less likely to implement comprehensive governance mechanisms in the first place (Al-Shammari et al., 2022). Another reason for our findings could be that narcissists want to avoid the perception of being weak because they do not have as much power as they would like in their company and so they would rather de-emphasize control mechanisms (those that constrain them personally) as much as possible. Hence, there is a negative influence in all governance issues, including the associated reporting.

The second part of this study explored the impact of CEO narcissism on the aggregated ESG reporting quantity using a null hypothesis. We found a significant, curvilinear relationship. Such U-shaped relationships are common in research on ESG reporting, for example, on the influence of gender in board composition, or on performance effects of ESG reporting (e.g., Amorelli & García-Sánchez, 2020; Cabeza-García et al., 2018; Lueg & Pesheva, 2021). Similarly, the narcissism literature has found curvilinear relationships. Grijalva et al.'s (2015) meta-analysis analyzed the optimal level between narcissism and leadership and found that leadership is more effective when narcissism is moderately pronounced compared to very high or very low levels. This curvilinear relationship is also present in the relationship between CEO narcissism and company performance (Uppal, 2020). Grijalva et al. (2015) suggested that the influence of narcissism is positive only until a certain point. Thus, our study contributes to the current knowledge about curvilinear relationships in narcissism research. Our results depicted a quadratic relationship where ESG reporting is

highest at very low and very high levels of CEO narcissism, and lowest at moderate levels of CEO narcissism (see Figure 2). In our study, this turning point was at a narcissism level of approximately 0.5. Highly narcissistic CEOs ranging on the right side of the graph, which might lean toward suffering from clinical narcissism, thus have a positive influence on ESG reporting. A potential explanation for this finding could be that the environmental pillar is currently the most dominant one (Ren et al., 2021) and thus might exert the highest effect size of the aggregated score. This would be in line with the argument that narcissists consider environmental reporting as an opportunity to receive the attention they crave. Also, narcissists might require a certain level of narcissism before prevailing against the other members of the board of management. It is rather surprising that low levels of CEO narcissism have the same impact on the ESG reporting quantity as high levels. In contrast to the highly pronounced narcissism levels, we currently do not have a plausible explanation of this finding.

Last, we contributed to methodology by measuring narcissism with the relatively new method of signature size. Using this unobtrusive measurement, we obtained significant results and therefore validated the method as an alternative to the approach used by Chatterjee and Hambrick (2007, 2011).

5.2 | Contribution for practitioners

According to upper echelons theory, executives' decisions are influenced by their personal characteristics (Hambrick & Mason, 1984). Our findings support this notion. Thus, practitioners, companies, and recruiters might put more emphasis on assessing the personality traits of their executives and employees. They could consider personality tests in the hiring process in order to employ people who match the company culture and desired outcomes. Since we found that the overall impact of CEO narcissism on environmental reporting is negative, possibly due to the omission or distortion of information, companies should treat CEOs' actions with caution and ensure monitoring by the

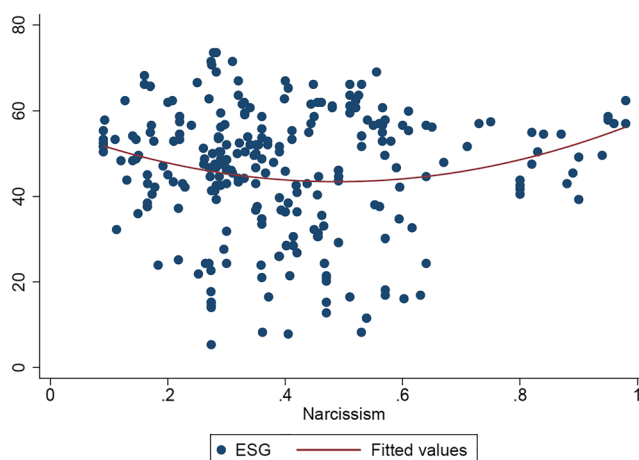


FIGURE 2 The curvilinear relationship between ESG reporting and CEO narcissism

board (Uppal, 2020). However, the presence of narcissists in companies should not automatically be viewed negatively. Our results showed that companies with more narcissistic CEOs disclose more ESG information, which has other positive effects. For example, ESG reporting enhances transparency about the ESG activities of a company for its stakeholders (Lungu et al., 2011). As a result, extensive ESG reporting is likely associated with a better company performance, for example, in terms of market value of equity (Matsumura et al., 2014; Mervelskemper & Streit, 2017) or lower cost of capital, such as cost of equity (Lueg et al., 2019; Reverte, 2012). Additionally, an increase in ESG reporting (that is not driven by greenwashing intentions) may also lead to a re-coupling to genuine ESG activities later. Thus, narcissists' need for attention could be one factor that supports companies in becoming pioneers in responding to stakeholder demands.

In contrast, narcissists disclose less when they fear negative attention. This highlights a potential deficiency in current legislation. While the purpose of ESG reporting is to ensure transparency and to improve stakeholder engagement (Lungu et al., 2011), insufficient reporting makes it difficult to compare the available information with that of other companies and thus complicates stakeholder decisions, for instance, regarding stock investment (Filbeck et al., 2019; Lokuwaduge & Heenetigala, 2017). Currently, some non-financial reporting is regulated by European Directive 2014/95/EU, but this only applies to the 6000 or so large (defined as average number of employees exceeds 500) public interest entities which are required to publish a non-financial statement/sustainability report. Moreover, while the directive provides a general framework on what should be included in a non-financial statement, it does not include any details on how these matters should be reported (Rogge & Ohnesorge, 2021). Therefore, companies still have extensive leeway in their reporting choices. Narcissists might exploit this in their favor by reducing the transparency of their operations in order to avoid negative recognition. The European Commission (2021) has already announced a new draft of the EU directive that would require companies to increasingly report on the negative impacts of their activities on the environment and society: The current directive only requires companies to report on environmentally damaging business activities if there is also a potential impact on the performance of the company (Richter & Meyer, 2021). In addition, the directive might also expand to public interest entities in general, any large company, and limited partnerships.

As yet, no audit has been performed on the reported information (Lueg & Lueg, 2021). Cragun et al. (2020, p. 919) note that "an underlying theme of CEO narcissism research is that narcissistic CEOs engage in questionable behavior often characterized as unethical, deceitful, illegal, reckless, or purely selfish." This may include distortion of financial information (Capalbo et al., 2017) or fraudulent financial reporting (Rijssenbilt & Commandeur, 2013). Similarly, Ham et al. (2017) discovered that reports by narcissists have an increased incidence of misreporting. To avoid greenwashing, for which a narcissist might expect positive feedback, regulators could introduce mandatory auditing for ESG reporting (European Commission, 2021).

5.3 | Limitations and future research agenda

Our study has some limitations. We were not able to directly observe the CEOs' level of narcissism but instead used the size of their signature to capture this personality trait. Despite reliability checks by Ham et al. (2017, 2018), we are aware of some limitations within our methodological approach. The calculated size might be influenced by different letter sizes in terms of height. Some letters protrude below most other letters' base line (i.e., *g*, *j*, *p*, *q*, and *y*) and so might result in an enlarged signature size. As a result, the calculated signature size would be affected and the person concerned automatically classified as more narcissistic based on the random letters in their name. Letters that protrude further upwards in their nature, such as *f* or *k*, on the contrary, pose less of a problem, since the initial letters already protrude upwards. However, when reviewing the signatures in our sample, we did not locate any case where such letters had resulted in an obvious enlargement of the signature. All influences were visually classified as marginal. Nevertheless, future researchers should check their samples to see if the nature of the letters in the executives' names could lead to unreliable classifications of narcissism.

When measuring CEO narcissism, we used the CEO's signature size from annual reports. These signatures might have been scaled by a public relations team to fit the design of the report and so would not reflect the real size of the signature. We controlled for that by comparing the CEOs' signatures over the years and within the report if the CEO had signed the report on various pages. We replaced odd-looking versions of the signatures across different reporting periods with the CEO's average signature size. We did not perform a robustness check by calculating narcissism using different methods to validate our results and the chosen method and so we encourage future research to confirm our results by applying a different approach to measure CEO narcissism. This could be the NPI test by providing a questionnaire to the CEOs or third parties as it is the most reliable source for measuring narcissism (Al-Shammari et al., 2019; Cragun et al., 2020; Raskin & Terry, 1988; Zhu & Chen, 2015a).

We conducted several model specification tests as part of our data analysis to find the most appropriate model to describe the relationship between our variables. We found that a quadratic model best explains the relationship between ESG reporting and CEO narcissism. Linear models best explain the relationship between social and governance reporting and CEO narcissism. Yet we have not yet found the optimal model for environmental reporting. Further, we still expect the relationship between the environmental pillar and CEO narcissism to be positive. Thus, the obtained linear relationship in our model does not necessarily reflect the actual relationship in the field. For this reason, the environmental pillar in particular requires further research and theory building. We recommend a more detailed investigation of model fit between CEO narcissism and environmental reporting which might also include the application of measures other than the Bloomberg score for environmental reporting.

Within the explorative part of the study, we found that both slightly and strongly pronounced narcissists have a positive impact on ESG reporting quantity. ESG reporting quantity is the lowest for moderate levels of narcissism. It appears plausible that CEOs with high,

possibly clinical, levels of narcissism might consider ESG reports as an extension of themselves and solicit external praise and attention through them. Yet we offer no reasons for the high levels of ESG reporting among the distinct low-level narcissists. We therefore encourage other researchers to explore this research field more intensively and build theory to identify possible reasons for the positive impact of less pronounced narcissism on ESG reporting quantity. This might also include an analysis of the different effect sizes of the individual pillars in the aggregated score in order to ascertain which pillar exerts the strongest influence within the score.

Within a company, the CFO, rather than the CEO, has primary responsibility for the accurate and timely reporting of the company's financial data (Ham et al., 2017) and may also be responsible for the non-financial data (Guo et al., 2021; Sun & Rakhman, 2013). Ham et al. (2017) have already shown that CFO narcissism predicts financial reporting quality better than CEO narcissism. Therefore, CFOs' personality traits might add explanatory power to understanding variations in ESG reporting across companies. The general relationship between CFOs, their personality traits, and non-financial reporting is rather unexplored. Peters and Romi (2014) investigated whether greenhouse gas reporting increased with the presence of a chief sustainability officer (CSO) and concluded that CSOs can be associated with greater transparency. Therefore, we would encourage researchers to measure the relationship between ESG reporting and narcissism for other executives who may influence reporting choices.

In general, controversial and/or carbon-intensive industries, for example, oil and gas, receive more attention in critical public discourse (Gossen & Velichkina, 2006). It stands to reason that different patterns of reporting might emerge if the same narcissistic CEO were reporting on a "regular" company and a "controversial" one. In our analyses, we did not take into account possible industry effects for two reasons: First, when dividing our sample according to the Global Industry Classification Standards (GICS), our categorical samples (e.g., two to 11 companies) turned out to be so small that some lacked the necessary statistical power. Furthermore, the German DAX does not include oil and gas companies, and the controversial automotive industry (Bouzzine & Lueg, 2020) is showing a move toward more sustainable electric drives. Second, Bloomberg's valuations are proprietary and opaque in that it is not possible to determine exactly how Bloomberg analysts account for industry differences in their reporting. Empirical effects would therefore not necessarily reflect industry differences, but in part the inability to curate data. Adding additional measures could actually overcorrect for this bias. We therefore suggest conducting similar studies with different samples or using other epistemological approaches to account for industry differences, such as controlled experiments, or ethnographic studies in comparable companies.

While ESG reporting is mainly reflected in the various ESG scores, the measurement of reporting quality remains more complicated as a comprehensive ESG report does not necessarily imply good quality (Ham et al., 2017). Currently, there are only a few studies available measuring reporting quality. Ham et al. (2017), for instance, investigated the relationship between CFO narcissism and financial reporting quality, finding that the former influences the quality of the latter. In addition, they compared their results with those based on CEO

narcissism and came to similar conclusions, showing that there is a relationship between executive narcissism and financial reporting quality. We encourage future researchers to investigate the relationship between executive narcissism and ESG reporting quality.

We are aware that ESG performance might affect ESG reporting as companies have an incentive to disclose superior information to differentiate themselves from other companies. Thus, companies with a superior ESG performance might disclose more than companies with lower ESG performance scores (Al-Tuwaijri et al., 2004; Clarkson et al., 2008). These assumptions are supported by our analyses which have shown that the reporting quantity is also driven by better ESG performance. However, it would stretch our model too far if we also examined whether the relationship between reporting and performance is conditional, mediating, or moderating. Our findings may encourage further investigation of the relationship between ESG performance and ESG reporting along these lines.

6 | CONCLUSION

This is the first study to examine the influence of CEO narcissism on ESG and its three pillars; the sample, based on German DAX 40 and MDAX companies, revealed different impacts. For total ESG, the quadratic relationship showed that the effects of narcissism depend on its level. ESG reporting was high for low levels of narcissism, decreased for moderate levels, and increased again for high levels of narcissism. The scores for reporting on governance and environment linearly decreased as levels of narcissism increased. Having and reporting strong governance mechanisms is not popular among narcissistic CEOs who would like to act out their personalities. Similarly, they want to get solely positive attention. Thus, they would prefer not to report negative environmental information on their company such as greenhouse gas emissions. Since social issues are generally not visible to the public, no relationship was found between the two parameters. This study has implications for research, as it is the first to examine this relationship. Practitioners also gain new insights, particularly regarding regulatory issues.

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CONFLICT OF INTEREST

The authors state that they do not have a conflict of interest.

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REFERENCES

- Aabo, T., Als, M., Thomsen, L., & Wulff, J. N. (2020). Watch me go big: CEO narcissism and corporate acquisitions. *Review of Behavioral Finance*, 13(5), 465–485. <https://doi.org/10.1108/RBF-05-2020-0091>
- Aguinis, H., & Glavas, A. (2012). What we know and don't know about corporate social responsibility: A review and research agenda. *Journal of Management*, 38(4), 932–968. <https://doi.org/10.1177/0149206311436079>

- Aguinis, H., & Glavas, A. (2019). On corporate social responsibility, sense-making, and the search for meaningfulness through work. *Journal of Management*, 45(3), 1057–1086. <https://doi.org/10.1177/0149206317691575>
- Allport, G. W. (2016). *Studies in expressive movement*. Read Books Ltd.
- Al-Shammari, M., Rasheed, A., & Al-Shammari, H. A. (2019). CEO narcissism and corporate social responsibility: Does CEO narcissism affect CSR focus? *Journal of Business Research*, 104, 106–117. <https://doi.org/10.1016/j.jbusres.2019.07.005>
- Al-Shammari, M., Rasheed, A. A., & Banerjee, S. N. (2022). Are all narcissistic CEOs socially responsible? An empirical investigation of an inverted U-shaped relationship between CEO narcissism and corporate social responsibility. *Group & Organization Management*, 47(3), 612–646.
- Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. E. II (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. *Accounting, Organizations and Society*, 29(5–6), 447–471. [https://doi.org/10.1016/S0361-3682\(03\)00032-1](https://doi.org/10.1016/S0361-3682(03)00032-1)
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). American Psychiatric Publishing.
- Amorelli, M. F., & García-Sánchez, I. M. (2020). Critical mass of female directors, human capital, and stakeholder engagement by corporate social reporting. *Corporate Social Responsibility and Environmental Management*, 27(1), 204–221. <https://doi.org/10.1002/csr.1793>
- Barry, C. T., Grafeman, S. J., Adler, K. K., & Pickard, J. D. (2007). The relations among narcissism, self-esteem, and delinquency in a sample of at-risk adolescents. *Journal of Adolescence*, 30(6), 933–942. <https://doi.org/10.1016/j.adolescence.2006.12.003>
- Beck, C., Frost, G., & Jones, S. (2018). CSR disclosure and financial performance revisited: A cross-country analysis. *Australian Journal of Management*, 43(4), 517–537. <https://doi.org/10.1177/0312896218771438>
- Beji, R., Yousfi, O., Loukil, N., & Omri, A. (2021). Board diversity and corporate social responsibility: Empirical evidence from France. *Journal of Business Ethics*, 173(1), 133–155. <https://doi.org/10.1007/s10551-020-04522-4>
- Bell, J. E. (1948). *Projective techniques*. Longmans, Green & Co.
- Bellezza, S., Gino, F., & Keinan, A. (2014). The red sneakers effect: Inferring status and competence from signals of nonconformity. *Journal of Consumer Research*, 41(1), 35–54. <https://doi.org/10.1086/674870>
- Beyerstein, B. L., & Beyerstein, D. F. (1992). *The write stuff: Evaluations of graphology, the study of handwriting analysis*. Prometheus Books.
- Bosson, J. K., Lakey, C. E., Campbell, W. K., Zeigler-Hill, V., Jordan, C. H., & Kernis, M. H. (2008). Untangling the links between narcissism and self-esteem: A theoretical and empirical review. *Social and Personality Psychology Compass*, 2(3), 1415–1439. <https://doi.org/10.1111/j.1751-9004.2008.00089.x>
- Bouzzine, Y. D., & Lueg, R. (2020). The contagion effect of environmental violations: The case of Dieselgate in Germany. *Business Strategy and the Environment*, 29(8), 3187–3202. <https://doi.org/10.1002/bse.2566>
- Bradlee, P. M., & Emmons, R. A. (1992). Locating narcissism within the interpersonal circumplex and the five-factor model. *Personality & Individual Differences*, 13(7), 821–830. [https://doi.org/10.1016/0191-8869\(92\)90056-U](https://doi.org/10.1016/0191-8869(92)90056-U)
- Brown, R. P., & Zeigler-Hill, V. (2004). Narcissism and the non-equivalence of self-esteem measures: A matter of dominance? *Journal of Research in Personality*, 38(6), 585–592. <https://doi.org/10.1016/j.jrp.2003.11.002>
- Business Roundtable. (2019). Our commitment—Statement. Retrieved 1.9.2019, from <https://opportunity.businessroundtable.org/ourcommitment>
- Buss, D. M., & Chiodo, L. M. (1991). Narcissistic acts in everyday life. *Journal of Personality*, 59(2), 179–215. <https://doi.org/10.1111/j.1467-6494.1991.tb00773.x>
- Buyl, T., Boone, C., & Wade, J. B. (2019). CEO narcissism, risk-taking, and resilience: An empirical analysis in US commercial banks. *Journal of Management*, 45(4), 1372–1400. <https://doi.org/10.1177/0149206317699521>
- Cabeza-García, L., Fernández-Gago, R., & Nieto, M. (2018). Do board gender diversity and director typology impact CSR reporting? *European Management Review*, 15(4), 559–575. <https://doi.org/10.1111/emre.12143>
- Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: Methods and applications*. Cambridge University Press.
- Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, 32(3), 946–967. <https://doi.org/10.5465/amr.2007.25275684>
- Campbell, W. K., Goodie, A. S., & Foster, J. D. (2004). Narcissism, confidence, and risk attitude. *Journal of Behavioral Decision Making*, 17(4), 297–311. <https://doi.org/10.1002/bdm.475>
- Capalbo, F., Frino, A., Lim, M. Y., Mollica, V., & Palumbo, R. (2017). The impact of CEO narcissism on earnings management. *Abacus*, 54(2), 210–226. <https://doi.org/10.1111/abac.12116>
- Caputo, F., Pizzi, S., Ligorio, L., & Leopizzi, R. (2021). Enhancing environmental information transparency through corporate social responsibility reporting regulation. *Business Strategy and the Environment*, 30(8), 3470–3484. <https://doi.org/10.1002/bse.2814>
- Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business & Society*, 38(3), 268–295. <https://doi.org/10.1177/000765039903800303>
- Chan, M. C., Watson, J., & Woodliff, D. (2014). Corporate governance quality and CSR disclosures. *Journal of Business Ethics*, 125(1), 59–73. <https://doi.org/10.1007/s10551-013-1887-8>
- Chatterjee, A., & Hambrick, D. C. (2007). It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. *Administrative Science Quarterly*, 52(3), 351–386. <https://doi.org/10.2189/asqu.52.3.351>
- Chatterjee, A., & Hambrick, D. C. (2011). Executive personality, capability cues, and risk taking: How narcissistic CEOs react to their successes and stumbles. *Administrative Science Quarterly*, 56(2), 202–237. <https://doi.org/10.1177/0001839211427534>
- Chen, G., Treviño, L. K., & Hambrick, D. C. (2009). CEO elitist association: Toward a new understanding of an executive behavioral pattern. *The Leadership Quarterly*, 20(3), 316–328. <https://doi.org/10.1016/j.leaqua.2009.03.003>
- Chen, J., Zhang, Z., & Jia, M. (2021). How CEO narcissism affects corporate social responsibility choice? *Asia Pacific Journal of Management*, 38(3), 897–924. <https://doi.org/10.1007/s10490-019-09698-6>
- Chin, M. K., Hambrick, D. C., & Treviño, L. K. (2013). Political ideologies of CEOs: The influence of executives' values on corporate social responsibility. *Administrative Science Quarterly*, 58(2), 197–232. <https://doi.org/10.1177/0001839213486984>
- Chou, T. K., Pittman, J. A., & Zhuang, Z. (2021). The importance of partner narcissism to audit quality: Evidence from Taiwan. *The Accounting Review*, 96(6), 103–127. <https://doi.org/10.2308/TAR-2018-0420>
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, 33(4–5), 303–327. <https://doi.org/10.1016/j.aos.2007.05.003>
- Cragun, O. R., Olsen, K. J., & Wright, P. M. (2020). Making CEO narcissism research great: A review and meta-analysis of CEO narcissism. *Journal of Management*, 46(6), 908–936. <https://doi.org/10.1177/0149206319892678>
- Cycyota, C. S., & Harrison, D. A. (2002). Enhancing survey response rates at the executive level: Are employee-or consumer-level techniques effective? *Journal of Management*, 28(2), 151–176. <https://doi.org/10.1177/014920630202800202>

- D'Amato, A., & Falivena, C. (2020). Corporate social responsibility and firm value: Do firm size and age matter? Empirical evidence from European listed companies. *Corporate Social Responsibility and Environmental Management*, 27(2), 909–924. <https://doi.org/10.1002/csr.1855>
- Dang, C., Li, Z. F., & Yang, C. (2018). Measuring firm size in empirical corporate finance. *Journal of Banking & Finance*, 86, 159–176. <https://doi.org/10.1016/j.jbankfin.2017.09.006>
- de Oliveira, K. V., Lustosa, P. R. B., de Souza Freire, F., & de Carvalho, F. A. (2021). Antecedents of CSR disclosure in an emerging economy: Evidence from the banking industry. *Journal of Accounting in Emerging Economies*, 12(1), 97–126. <https://doi.org/10.1108/JAEE-10-2020-0257>
- Delmas, M., & Toffel, M. W. (2004). Stakeholders and environmental management practices: An institutional framework. *Business Strategy and the Environment*, 13(4), 209–222. <https://doi.org/10.1002/bse.409>
- Dillon, K. M. (1988). Narcissism and embellishments of signature. *Psychological Reports*, 62(1), 152–154. <https://doi.org/10.2466/pr0.1988.62.1.152>
- Ditto, P. H., & Griffin, J. (1993). The value of uniqueness: Self-evaluation and the perceived prevalence of valenced characteristics. *Journal of Social Behavior and Personality*, 8(2), 221–240.
- Donning, H., Eriksson, M., Martikainen, M., & Lehner, O. M. (2019). Prevention and detection for risk and fraud in the digital age—the current situation. *ACRN Oxford Journal of Finance and Risk Perspectives*, 8, 86–97.
- Drempetic, S., Klein, C., & Zwergel, B. (2020). The influence of firm size on the ESG score: Corporate sustainability ratings under review. *Journal of Business Ethics*, 167(2), 333–360. <https://doi.org/10.1007/s10551-019-04164-1>
- Ellis, H. (1898). Auto-erotism: A psychological study. *Alienist and Neurologist*, 19(2), 504–529.
- Emmons, R. (1984). Factor analysis and construct validity of the narcissistic personality inventory. *Journal of Personality Assessment*, 48(3), 291–300. https://doi.org/10.1207/s15327752jpa4803_11
- Emmons, R. (1987). Narcissism: Theory and measurement. *Journal of Personality and Social Psychology*, 52(1), 11–17. <https://doi.org/10.1037/0022-3514.52.1.11>
- European Commission. (2021). COM(2021) 189 final. Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0189>
- Filbeck, A., Filbeck, G., & Zhao, X. (2019). Performance assessment of firms following sustainability ESG principles. *The Journal of Investing*, 28(2), 7–20. <https://doi.org/10.3905/joi.2019.28.2.007>
- Fluckiger, F. A., Tripp, C. A., & Weinberg, G. H. (1961). A review of experimental research in graphology, 1933–1960. *Perceptual & Motor Skills*, 12(1), 67–90. <https://doi.org/10.2466/pms.1961.12.1.67>
- Frith, H. (1980). *Graphology*. Steinerbooks.
- Gallo, P. J., & Christensen, L. J. (2011). Firm size matters: An empirical investigation of organizational size and ownership on sustainability-related behaviors. *Business & Society*, 50(2), 315–349. <https://doi.org/10.1177/0007650311398784>
- García-Sánchez, I. M., Gómez-Miranda, M. E., David, F., & Rodríguez-Ariza, L. (2019). Board independence and GRI-IFC performance standards: The mediating effect of the CSR committee. *Journal of Cleaner Production*, 225, 554–562. <https://doi.org/10.1016/j.jclepro.2019.03.337>
- Giannarakis, G., Konteos, G., & Sariannidis, N. (2014). Financial, governance and environmental determinants of corporate social responsible disclosure. *Management Decision*, 52(10), 1928–1951. <https://doi.org/10.1108/MD-05-2014-0296>
- Gossen, L. P., & Velichkina, L. M. (2006). Environmental problems of the oil-and-gas industry. *Petroleum Chemistry*, 46(2), 67–72. <https://doi.org/10.1134/S0965544106020010>
- Grewatsch, S., & Kleindienst, I. (2017). When does it pay to be good? Moderators and mediators in the corporate sustainability–corporate financial performance relationship: A critical review. *Journal of Business Ethics*, 145(2), 383–416. <https://doi.org/10.1007/s10551-015-2852-5>
- Grijalva, E., Harms, P. D., Newman, D. A., Gaddis, B. H., & Fraley, R. C. (2015). Narcissism and leadership: A meta-analytic review of linear and nonlinear relationships. *Personnel Psychology*, 68(1), 1–47. <https://doi.org/10.1111/peps.12072>
- Guo, J., Kim, S., Yu, Y., & Kim, J. Y. J. (2021). Does CFO accounting expertise matter to corporate social responsibility disclosure in 10-Ks? *Journal of Applied Accounting Research*, 22(5), 800–822. <https://doi.org/10.1108/JAAR-07-2020-0137>
- Guping, C., Safdar Sial, M., Wan, P., Badulescu, A., Badulescu, D., & Vianna Brugni, T. (2020). Do board gender diversity and non-executive directors affect CSR reporting? Insight from agency theory perspective. *Sustainability*, 12(20), 8597. <https://doi.org/10.3390/su12208597>
- Gurtman, M. B. (1992). Construct validity of interpersonal personality measures: The interpersonal circumplex as a nomological net. *Journal of Personality and Social Psychology*, 63(1), 105–118. <https://doi.org/10.1037/0022-3514.63.1.105>
- Ham, C., Lang, M., Seybert, N., & Wang, S. (2017). CFO narcissism and financial reporting quality. *Journal of Accounting Research*, 55(5), 1089–1135. <https://doi.org/10.1111/1475-679X.12176>
- Ham, C., Seybert, N., & Wang, S. (2018). Narcissism is a bad sign: CEO signature size, investment and performance. *Review of Accounting Studies*, 23(1), 234–264. <https://doi.org/10.1007/s11142-017-9427-x>
- Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, 32(2), 334–343. <https://doi.org/10.5465/amr.2007.24345254>
- Hambrick, D. C., Geletkanycz, M. A., & Fredrickson, J. W. (1993). Top executive commitment to the status quo: Some tests of its determinants. *Strategic Management Journal*, 14(6), 401–418. <https://doi.org/10.1002/smj.4250140602>
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206. <https://doi.org/10.2307/258434>
- Homroy, S., & Slechten, A. (2019). Do board expertise and networked boards affect environmental performance? *Journal of Business Ethics*, 158(1), 269–292. <https://doi.org/10.1007/s10551-017-3769-y>
- Johnson, S. L., Leedom, L. J., & Muhtadie, L. (2012). The dominance behavioral system and psychopathology: Evidence from self-report, observational, and biological studies. *Psychological Bulletin*, 138(4), 692–743. <https://doi.org/10.1037/a0027503>
- Jordan, C. H., Giacomini, M., & Kopp, L. (2014). Let go of your (inflated) ego: Caring more about others reduces narcissistic tendencies. *Social and Personality Psychology Compass*, 8(9), 511–523. <https://doi.org/10.1111/spc3.12128>
- Jorgenson, D. O. (1977). Signature size and dominance: A brief note. *The Journal of Psychology*, 97(2), 269–270. <https://doi.org/10.1080/00223980.1977.9923972>
- Kang, Y. S., Huh, E., & Lim, M. H. (2019). Effects of foreign directors' nationalities and director types on corporate philanthropic behavior: Evidence from Korean firms. *Sustainability*, 11(11), 3132. <https://doi.org/10.3390/su11113132>
- Karami, A. (2017). Study on connections between signature and personality using Eysenck test: A case study of Iranian signatures. *American Journal of Applied Psychology*, 6(1), 6–14. <https://doi.org/10.11648/j.ajap.20170601.12>
- Kernberg, O. F. (1975). *Borderline conditions and pathological narcissism*. Aronson.
- Kim, B., Lee, S., & Kang, K. H. (2018). The moderating role of CEO narcissism on the relationship between uncertainty avoidance and CSR.

- Tourism Management*, 67(1), 203–213. <https://doi.org/10.1016/j.tourman.2018.01.018>
- Läger, F., Bouzzine, Y. D., & Lueg, R. (2022). The relationship between firm complexity and corporate social responsibility: International evidence from 2010–2019. *Corporate Social Responsibility and Environmental Management*, 29(3), 549–560.
- Li, F. (2008). Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics*, 45(2–3), 221–247. <https://doi.org/10.1016/j.jacceco.2008.02.003>
- Li, Y., Gong, M., Zhang, X. Y., & Koh, L. (2018). The impact of environmental, social, and governance disclosure on firm value: The role of CEO power. *The British Accounting Review*, 50(1), 60–75. <https://doi.org/10.1016/j.bar.2017.09.007>
- Lokuwaduge, C. S. D. S., & Heenetigala, K. (2017). Integrating environmental, social and governance (ESG) disclosure for a sustainable development: An Australian study. *Business Strategy and the Environment*, 26(4), 438–450. <https://doi.org/10.1002/bse.1927>
- Lueg, K., Krastev, B., & Lueg, R. (2019). Bidirectional effects between sustainability disclosure and risk—A disaggregate analysis of listed companies in South Africa. *Journal of Cleaner Production*, 229(1), 268–277. <https://doi.org/10.1016/j.jclepro.2019.04.379>
- Lueg, K., & Lueg, R. (2021). Deconstructing corporate sustainability narratives: A taxonomy for critical assessment of integrated reporting types. *Corporate Social Responsibility and Environmental Management*, 28(1), 1785–1800. <https://doi.org/10.1002/csr.2152>
- Lueg, R., & Borisov, B. G. (2014). Archival or perceived measures of environmental uncertainty? Conceptualization and new empirical evidence. *European Management Journal*, 32(4), 658–671. <https://doi.org/10.1016/j.emj.2013.11.004>
- Lueg, R., & Pesheva, R. (2021). Corporate sustainability in the Nordic countries—the curvilinear effects on shareholder returns. *Journal of Cleaner Production*, 315, 127962. <https://doi.org/10.1016/j.jclepro.2021.127962>
- Lueg, R., & Radlach, R. (2016). Managing sustainable development with management control systems: A literature review. *European Management Journal*, 34(2), 158–171. <https://doi.org/10.1016/j.emj.2015.11.005>
- Lungu, C. I., Caraiani, C., & Dascălu, C. (2011). Research on corporate social responsibility reporting. *Amfiteatru Economic Journal*, 13(29), 117–131.
- Mahoney, E. R. (1973). Signature size and self-estimation: A brief note. *The Journal of Psychology*, 84(2), 223–224. <https://doi.org/10.1080/00223980.1973.9923833>
- Mailhos, A., Buunk, A. P., & Cabana, Á. (2016). Signature size signals social dominance and narcissism. *Journal of Research in Personality*, 65, 43–51. <https://doi.org/10.1016/j.jrp.2016.09.004>
- Manita, R., Bruna, M. G., Dang, R., & Houanti, L. H. (2018). Board gender diversity and ESG disclosure: Evidence from the USA. *Journal of Applied Accounting Research*, 19(2), 206–224. <https://doi.org/10.1108/JAAR-01-2017-0024>
- Martínez-Ferrero, J., Lozano, M. B., & Vivas, M. (2021). The impact of board cultural diversity on a firm's commitment toward the sustainability issues of emerging countries: The mediating effect of a CSR committee. *Corporate Social Responsibility and Environmental Management*, 28(2), 675–685. <https://doi.org/10.1002/csr.2080>
- Matsumura, E. M., Prakash, R., & Vera-Munoz, S. C. (2014). Firm-value effects of carbon emissions and carbon disclosures. *The Accounting Review*, 89(2), 695–724. <https://doi.org/10.2308/accr-50629>
- Matten, D., & Moon, J. (2008). Implicit and explicit corporate social responsibility: A conceptual framework for a comparative understanding of corporate social responsibility. *Academy of Management Review*, 33(2), 404–424. <https://doi.org/10.5465/amr.2008.31193458>
- McBrayer, G. A. (2018). Does persistence explain ESG disclosure decisions? *Corporate Social Responsibility and Environmental Management*, 25(6), 1074–1086. <https://doi.org/10.1002/csr.1521>
- McNeal, J. U. (1967). Graphology: A new marketing research technique. *Journal of Marketing Research*, 4(4), 363–367. <https://doi.org/10.1177/002224376700400404>
- Melcher, W. A. (1920). Dual personality in handwriting. *The Journal of Criminal Law and Criminology*, 11(2), 209–216. <https://doi.org/10.2307/1133895>
- Mervelskemper, L., & Streit, D. (2017). Enhancing market valuation of ESG performance: Is integrated reporting keeping its promise? *Business Strategy and the Environment*, 26(4), 536–549. <https://doi.org/10.1002/bse.1935>
- Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry*, 12(4), 177–196. https://doi.org/10.1207/S15327965PLI1204_1
- Nai, A., & Maier, J. (2018). Perceived personality and campaign style of Hillary Clinton and Donald Trump. *Personality & Individual Differences*, 121, 80–83. <https://doi.org/10.1016/j.paid.2017.09.020>
- O'Boyle, E. H., Forsyth, D. R., Banks, G. C., Story, P. A., & White, C. D. (2014). A meta-analytic test of redundancy and relative importance of the dark triad and five-factor model of personality. *Journal of Personality*, 83(6), 644–664. <https://doi.org/10.1111/jopy.12126>
- Ohmann, K., & Burgmer, P. (2016). Nothing compares to me: How narcissism shapes comparative thinking. *Personality & Individual Differences*, 98, 162–170. <https://doi.org/10.1016/j.paid.2016.03.069>
- Olsen, K. J., Dworkis, K. K., & Young, S. M. (2014). CEO narcissism and accounting: A picture of profits. *Journal of Management Accounting Research*, 26(2), 243–267. <https://doi.org/10.2308/jmar-50638>
- Olsen, K. J., & Stekelberg, J. (2016). CEO narcissism and corporate tax sheltering. *Journal of the American Taxation Association*, 38(1), 1–22. <https://doi.org/10.2308/atax-51251>
- O'Reilly, C. A. III, Doerr, B., & Chatman, J. A. (2018). “See You in Court”: How CEO narcissism increases firms' vulnerability to lawsuits. *The Leadership Quarterly*, 29(3), 365–378. <https://doi.org/10.1016/j.leaqua.2017.08.001>
- Paulhus, D. L. (2001). Normal narcissism: Two minimalist accounts. *Psychological Inquiry*, 12(4), 228–230.
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36(6), 556–563. [https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6)
- Pelster, M., & Schaltegger, S. (2022). The dark triad and corporate sustainability: An empirical analysis of personality traits of sustainability managers. *Business Ethics, the Environment & Responsibility*, 31(1), 80–99. <https://doi.org/10.1111/beer.12398>
- Pesaran, M. H. (2015). *Time series and panel data econometrics*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198736912.001.0001>
- Peters, G. F., & Romi, A. M. (2014). Does the voluntary adoption of corporate governance mechanisms improve environmental risk disclosures? Evidence from greenhouse gas emission accounting. *Journal of Business Ethics*, 125(4), 637–666. <https://doi.org/10.1007/s10551-013-1886-9>
- Petrenko, O. V., Aime, F., Ridge, J., & Hill, A. (2016). Corporate social responsibility or CEO narcissism? CSR motivations and organizational performance. *Strategic Management Journal*, 37(2), 262–279. <https://doi.org/10.1002/smj.2348>
- Preghenella, N., & Battistella, C. (2021). Exploring business models for sustainability: A bibliographic investigation of the literature and future research directions. *Business Strategy and the Environment*, 30(5), 2505–2522. <https://doi.org/10.1002/bse.2760>
- Pucheta-Martínez, M. C., & Chiva-Ortells, C. (2018). The role of directors representing institutional ownership in sustainable development through corporate social responsibility reporting. *Sustainable Development*, 26(6), 835–846. <https://doi.org/10.1002/sd.1853>

- Pulver, S. E. (1970). Narcissism: The term and the concept. *Journal of the American Psychoanalytic Association*, 18(2), 319–341. <https://doi.org/10.1177/000306517001800204>
- Raimo, N., Caragnano, A., Zito, M., Vitolla, F., & Mariani, M. (2021). Extending the benefits of ESG disclosure: The effect on the cost of debt financing. *Corporate Social Responsibility and Environmental Management*, 28(4), 1412–1421. <https://doi.org/10.1002/csr.2134>
- Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology*, 54(5), 890–902. <https://doi.org/10.1037/0022-3514.54.5.890>
- Regnaud, D. A. (2014). *The relationship between top leaders' observed narcissistic behaviors and workplace bullying* (Doctoral dissertation, Walden University).
- Ren, S., Wang, Y., Hu, Y., & Yan, J. (2021). CEO hometown identity and firm green innovation. *Business Strategy and the Environment*, 30(2), 756–774. <https://doi.org/10.1002/bse.2652>
- Reverte, C. (2012). The impact of better corporate social responsibility disclosure on the cost of equity capital. *Corporate Social Responsibility and Environmental Management*, 19(5), 253–272. <https://doi.org/10.1002/csr.273>
- Richter, N., & Meyer, Y. (2021). *Sind Unternehmen für die künftigen Anforderungen der Nachhaltigkeitsberichterstattung gewappnet? EY*. Retrieved from https://www.ey.com/de_de/decarbonization/6-faktoren-die-in-bezug-auf-die-csr-richtlinie-2-0-wichtig-sind
- Rijsenbilt, A., & Commandeur, H. (2013). Narcissus enters the courtroom: CEO narcissism and fraud. *Journal of Business Ethics*, 117(2), 413–429. <https://doi.org/10.1007/s10551-012-1528-7>
- Rogge, E., & Ohnesorge, L. (2021). Europe's green policy: Towards a climate neutral economy by way of investors' choice. *European Company Law*, 18(1), 34–39. <https://doi.org/10.54648/EUCL2021005>
- Ronningstam, E., & Gunderson, J. G. (1990). Identifying criteria for narcissistic personality disorder. *The American Journal of Psychiatry*, 147(7), 918–922. <https://doi.org/10.1176/ajp.147.7.918>
- Rubinstein, G. (2016). Modesty doesn't become me: Narcissism and the Big Five among male and female candidates for the Big Brother TV show. *Journal of Individual Differences*, 37(4), 223–230. <https://doi.org/10.1027/1614-0001/a000209>
- Saudek, R. (2018). *Revival: The psychology of handwriting (1925)*. Routledge.
- Schaltegger, S., Hörisch, J., & Freeman, R. E. (2017). Business cases for sustainability: A stakeholder theory perspective. *Organization & Environment*, 32(3), 191–212. <https://doi.org/10.1177/1086026617722882>
- Schnatterly, K., Gangloff, K. A., & Tuschke, A. (2018). CEO wrongdoing: A review of pressure, opportunity, and rationalization. *Journal of Management*, 44(6), 2405–2432. <https://doi.org/10.1177/0149206318771177>
- Shahbaz, M., Karaman, A. S., Kilic, M., & Uyar, A. (2020). Board attributes, CSR engagement, and corporate performance: What is the nexus in the energy sector? *Energy Policy*, 143, 111582. <https://doi.org/10.1016/j.enpol.2020.111582>
- Snyder, C. R., & Fromkin, H. L. (1977). Abnormality as a positive characteristic: The development and validation of a scale measuring need for uniqueness. *Journal of Psychopathology & Clinical Science*, 86(5), 518–527. <https://doi.org/10.1037/0021-843X.86.5.518>
- Spence, C. (2009). Social and environmental reporting and the corporate ego. *Business Strategy and the Environment*, 18(4), 254–265. <https://doi.org/10.1002/bse.600>
- Sun, L., & Rakhman, F. (2013). CFO financial expertise and corporate social responsibility: Evidence from S&P 500 companies. *International Journal of Law and Management*, 55(3), 161–172. <https://doi.org/10.1108/17542431311327619>
- Swanson, B. R., & Price, R. L. (1972). Signature size and status. *The Journal of Social Psychology*, 87(2), 319–319. <https://doi.org/10.1080/00224545.1972.9922531>
- Takada, T., Lau, D., Casterella, J. R., & Wong, N. (2021). There is no 'I' in team: An analysis of audit partner narcissism from the team aspect. *International Journal of Auditing*, 25(3), 751–768. <https://doi.org/10.1111/ijau.12247>
- Taleatu, T. A., Adetula, D. T., & Iyoha, F. O. (2020). Moderating effect of governance quality on the relationship between CFOs' narcissism and corporate earnings management in Nigeria. *Journal of Management Information & Decision Sciences*, 23(1), 477–490.
- Tamimi, N., & Sebastianelli, R. (2017). Transparency among S&P 500 companies: An analysis of ESG disclosure scores. *Management Decision*, 55(8), 1660–1680. <https://doi.org/10.1108/MD-01-2017-0018>
- Tang, Y., Mack, D. Z., & Chen, G. (2018). The differential effects of CEO narcissism and hubris on corporate social responsibility. *Strategic Management Journal*, 39(5), 1370–1387. <https://doi.org/10.1002/smj.2761>
- Taylor, S. E., Fiske, S. T., Etcoff, N. L., & Ruderman, A. J. (1978). Categorical and contextual bases of person memory and stereotyping. *Journal of Personality and Social Psychology*, 36(7), 778–793. <https://doi.org/10.1037/0022-3514.36.7.778>
- Torres-Reyna, O. (2007). *Panel data analysis fixed and random effects using Stata (v. 4.2)* (Vol. 112). Data & Statistical Services, Princeton University.
- Uppal, N. (2020). CEO narcissism, CEO duality, TMT agreeableness and firm performance: An empirical investigation in auto industry in India. *European Business Review*, 32(4), 573–590. <https://doi.org/10.1108/EBR-06-2019-0121>
- Van Scotter, J. R. (2020). Narcissism in CEO research: A review and replication of the archival approach. *Management Review Quarterly*, 70(4), 629–674. <https://doi.org/10.1007/s11301-019-00178-1>
- Vernon, P. A., Villani, V. C., Vickers, L. C., & Harris, J. A. (2008). A behavioral genetic investigation of the Dark Triad and the Big 5. *Personality & Individual Differences*, 44(2), 445–452. <https://doi.org/10.1016/j.paid.2007.09.007>
- Visser, B. A., Book, A. S., & Volk, A. A. (2017). Is Hillary dishonest and Donald narcissistic? A HEXACO analysis of the presidential candidates' public personas. *Personality & Individual Differences*, 106, 281–286. <https://doi.org/10.1016/j.paid.2016.10.053>
- Vitolla, F., Raimo, N., Rubino, M., & Garzoni, A. (2019). How pressure from stakeholders affects integrated reporting quality. *Corporate Social Responsibility and Environmental Management*, 26(6), 1591–1606. <https://doi.org/10.1002/csr.1850>
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, 18(4), 303–319. [https://doi.org/10.1002/\(SICI\)1097-0266\(199704\)18:4<303::AID-SMJ869>3.0.CO;2-G](https://doi.org/10.1002/(SICI)1097-0266(199704)18:4<303::AID-SMJ869>3.0.CO;2-G)
- Wang, H., Tong, L., Takeuchi, R., & George, G. (2016). Corporate social responsibility: An overview and new research directions. *Academy of Management Journal*, 59(2), 534–544. <https://doi.org/10.5465/amj.2016.5001>
- Wang, Y., Yekini, K., Babajide, B., & Kessy, M. (2022). Antecedents of corporate social responsibility disclosure: Evidence from the UK extractive and retail sector. *International Journal of Accounting and Information Management*, 30(2), 161–188. <https://doi.org/10.1108/IJAIM-08-2021-0158>
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT Press.
- Zhou, Y. (2017). Narcissism and the art market performance. *The European Journal of Finance*, 23(13), 1197–1218. <https://doi.org/10.1080/1351847X.2016.1151804>
- Zhu, D. H., & Chen, G. (2015a). CEO narcissism and the impact of prior board experience on corporate strategy. *Administrative Science Quarterly*, 60(1), 31–65. <https://doi.org/10.1177/0001839214554989>

- Zhu, D. H., & Chen, G. (2015b). Narcissism, director selection, and risk-taking spending. *Strategic Management Journal*, 36(13), 2075–2098. <https://doi.org/10.1002/smj.2322>
- Zweigenhaft, R. L. (1970). Signature size: A key to status awareness. *The Journal of Social Psychology*, 81(1), 49–54. <https://doi.org/10.1080/00224545.1970.9919908>
- Zweigenhaft, R. L., & Marlowe, D. (1973). Signature size: studies in expressive movement. *Journal of Consulting and Clinical Psychology*, 40(3), 469–473. <https://doi.org/10.1037/h0034503>

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