



Narcissism at the Helm: The Environmental Consequences of Grandiose and Vulnerable Narcissism of CEOs

Narcisismo al Timón: Las Consecuencias Medioambientales del Narcisismo Grandioso y Vulnerable de los CEOs

Paula Villalba-Ríos^a, Julio Vecino-Gravel^b, Carmen Barroso-Castro^{*}, Mar Villegas-Periñán^c

^a Universidad de Sevilla. Ramón y Cajal, n.º 1, Sevilla, España, 41005 – pvillalba@us.es – <https://orcid.org/0000-0002-7488-6110>

^b Universidad de Sevilla. Ramón y Cajal, n.º 1, Sevilla, España, 41005 – juliovecino@us.es – <https://orcid.org/0000-0003-2552-7522>

^c Universidad de Sevilla. Ramón y Cajal, n.º 1, Sevilla, España, 41005 – marvillegas@us.es – <https://orcid.org/0000-0002-4594-2312>

^{*} **Corresponding author:** Universidad de Sevilla. Ramón y Cajal, n.º 1, Sevilla, España, 41005 – barroso@us.es – <https://orcid.org/0000-0002-3439-877X>

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ABSTRACT

Nowadays, nothing is more critical for business than dealing with environmental degradation. Drawing upon the Upper Echelon Theory, this study delves into the nuanced influence of CEO narcissism on corporate environmental performance. Unlike previous research that treats narcissism as a single construct, this work distinguishes between its two primary dimensions: grandiose and vulnerable narcissism. Based on a sample of 214 observations of Spanish firms over the period 2015-2020, the research findings reveal a divergent impact. On the one hand, the results show stronger corporate environmental performance when CEOs predominantly exhibit traits of grandiose narcissism, likely driven by a desire for visibility and social recognition. On the other hand, corporate environmental performance is significantly weaker when CEOs manifest traits of vulnerable narcissism, characterised by low extroversion. In addition, we analysed the moderating role of CEO duality in the above relationships. The results indicate that when the CEO also chairs the board of directors, the negative effects of vulnerable narcissism on environmental performance of firms are more pronounced. These findings provide valuable insights for boards of directors regarding the selection of a new CEO, the design of governance mechanisms and the strategic importance of CEOs psychological traits aimed at ensuring corporate environmental sustainability.

Keywords: CEO narcissism; Corporate governance; Corporate environmental performance; Environmental sustainability; Upper Echelon Theory.

R E S U M E N

Hoy en día, nada es más importante para las empresas que hacer frente a la degradación medioambiental. Basándose en la *Upper Echelon Theory*, este estudio profundiza en la influencia matizada del narcisismo de los directores generales en el rendimiento medioambiental de las empresas. A diferencia de investigaciones anteriores que tratan el narcisismo como un constructo único, este trabajo distingue entre sus dos dimensiones principales: el narcisismo grandioso y el narcisismo vulnerable. Basándose en una muestra de 214 observaciones de empresas españolas durante el periodo 2015-2020, los resultados de la investigación revelan un impacto divergente. Por un lado, los resultados muestran un mayor rendimiento medioambiental de las empresas cuando los directores generales muestran predominantemente rasgos de narcisismo grandioso, probablemente impulsados por el deseo de visibilidad y reconocimiento social. Por otro lado, el rendimiento medioambiental de las empresas es significativamente menor cuando los directores generales manifiestan rasgos de narcisismo vulnerable, caracterizados por una baja extroversión. Además, analizamos el papel moderador de la dualidad del director general en las relaciones anteriores. Los resultados indican que cuando el director general también preside el consejo de administración, los efectos negativos del narcisismo vulnerable sobre el desempeño medioambiental de las empresas son más pronunciados. Estos hallazgos proporcionan información valiosa para los consejos de administración en lo que respecta a la selección de un nuevo director ejecutivo, el diseño de mecanismos de gobernanza y la importancia estratégica de los rasgos psicológicos de los directores destinados a garantizar la sostenibilidad medioambiental de las empresas.

Palabras clave: Narcisismo del CEO; Gobierno corporativo; Rendimiento medioambiental; Sostenibilidad medioambiental; Teoría Upper Echelon.

1. INTRODUCTION

Prior research on CEO's personality traits, mainly focused on Upper Echelon Theory (UET), has substantially advanced our understanding of how these traits affect CEO's behaviour (Buyl *et al.*, 2019) and the performance of the companies they head (Chatterjee & Hambrick, 2007; Lee *et al.*, 2023). Hambrick and Mason (1984) argued that psychological personality traits are much more relevant than demographic traits in determining executive behaviour and decision-making (Priem *et al.*, 1999). Among CEO psychological attributes, narcissism has recently garnered considerable attention, because it is the trait of the so-called "dark triad" most closely related to the CEO (Buyl *et al.*, 2025; Junge *et al.*, 2025). This attribute has generated contentious debate between its "bright and dark sides" and inconclusive results (Al-Shammari *et al.*, 2022; Khanchel *et al.*, 2024). Recent studies (Afshar Jahanshahi & Kalaycioglu, 2025; Choi & Phan, 2022) that delve deeper into this debate conclude that this trait, in itself, is neither unequivocally good nor bad, which justifies further research into the effect that a narcissistic CEO has on their company. Gaining this knowledge can be a very important step for companies to harness the useful potential of narcissistic CEOs and mitigate their harmful effects. However, much of these previous studies have focused primarily on the pathological and negative aspects of this personality trait, without considering that CEO narcissism can be associated with both benefits (bright side) and detriments (dark side) for the company (Choi & Phan, 2022; Cragun *et al.*, 2020; Rovelli *et al.*, 2023). Many CEOs have a narcissistic personality (Finkelstein *et al.*, 2009), which can be beneficial news for companies that need passion, the daring to break new ground and the drive to adopt new initiatives (Zhang *et al.*, 2017). In fact, narcissism may be considered a desirable trait favouring those who wish to reach the apex of most firms (Rovelli *et al.*, 2023). While the outcomes achieved by CEO narcissism in their firm have been analysed (Petrenko *et al.*, 2016); there has been little exploration of the factors that lead boards to hire this type of CEO. For all these reasons, the literature calls for future research could provide greater insight into the puzzle of which circumstances lead to the appointment and success of a narcissistic CEO (Cragun *et al.*, 2020).

To address this puzzle, we consider the two distinct dimensions of narcissism recognised in the literature: *grandiose narcissism* and *vulnerable narcissism* (Jauk & Kanske, 2021; Miller *et al.*, 2008, 2011) and the dual nature of environmental sustainability provides an ideal context for this analysis. In doing so, we shed more light on the debate between the bright and dark sides of narcissism, delving deeper into this CEO trait through the prism of its different dimensions (Choi & Phan, 2022).

Thus, on the one hand, each dimension of narcissism presents different nuances of the CEO's personality that may result in different behaviours and strategic decisions. Jauk and Kanske (2021) point out that both dimensions of CEO narcissism share a sense of self-importance and entitlement. However, while grandiose CEO narcissism has an inflated view of themselves and crave social recognition; vulnerable CEO narcissism is more withdrawn. In short, grandiose narcissism is characterised by agentic extraversion, while vulnerable narcissism is characterised by low extroversion. And the other hand, the literature has

highlighted that achieving success in environmental sustainability is a matter that depends, to a large extent, on the strategic decisions adopted at the highest level of an organisation; that is, by its CEO (Herrmann & Nadkarni, 2014); and that, at present, decisions on environmental sustainability have an enormous social recognition and impact (Bansal & Roth, 2000).

Therefore, we believe that it is necessary to further delve into the relationship between the CEO's grandiose and vulnerable narcissism and the environmental sustainability. Firstly, because environmental sustainability offers narcissistic CEOs a great opportunity to enhance their image and reputation and gain recognition from others, questions especially important for grandiose narcissists; however, the results derived from environmental decisions can take a long time to be observed, so they may be less attractive to a vulnerable narcissistic CEO than other types of strategic decisions (Khanchel *et al.*, 2024). Second, previous research has focused on studying the impact of CEO narcissism on corporate social responsibility (Al-Shammari *et al.*, 2019, 2022) and not on its different dimensions such as environmental (Lassoued *et al.*, 2023). However, environmental decisions are heavily influenced by the CEO's preferences and priorities (Arena *et al.*, 2018). Given the degree of complexity underlying these decisions and their high impact on different stakeholders, largely depend on the CEO's personality or, more specifically, whether he or she is a grandiose or vulnerable narcissist. Thirdly, two dimensions of narcissism emerge when these leaders seek to reaffirm their sense of superiority, grandiose and vulnerable, that may affect environmental sustainability differently (Khanchel *et al.*, 2024). This distinction is key because while CEOs with grandiose narcissism push ambitious environmental initiatives to gain social recognition (Al-Shammari *et al.*, 2019), vulnerable narcissists may avoid sustainability risks (Khanchel *et al.*, 2024) for fear of social scrutiny, negatively affecting corporate environmental performance (CEP). Therefore, this distinction helps to better understand the behaviour and commitment of the narcissistic CEOs to their organisations, and to understand conflicting positions derived from previous work (Choi & Pan, 2022).

For these reasons, we argue that overlooking how both grandiose and vulnerable CEO narcissism influence environmental sustainability, limits our understanding of the true role of the CEO. Delving into these relationships allows us to shed some light on the circumstances that help explain the appointment of a narcissistic CEO (Cragun *et al.*, 2020) and his or her possibilities for success. Thus, if the attitudes of a grandiose and vulnerable narcissistic CEO towards environmental sustainability issues are different, their behaviours may also differ, so what the distinction between the two dimensions of narcissism can be relevant to CEP. In doing so, we enrich the previous literature by pointing out that the positive or negative impact of narcissistic CEOs on their companies depends on their level in each dimension (Afshar-Jahanshahi & Kalaycioglu, 2025; Choi & Phan, 2022).

For example, Steve Jobs and Tim Cook, both CEOs of Apple, have been described as highly narcissistic. However, on the one hand, Jobs' environmental responsibility stemmed from a bold vision for innovation and design, and his focus on long-term sustainable goals that often-involved public social scrutiny. He was known for his confidence and willingness to take centre stage, particularly in public settings; as well as for constantly seeking

admiration and recognition for his accomplishments. His constant search for praise and social recognition leads him to seek environmental achievements that serve as mechanisms for his personal promotion (Cragun *et al.*, 2020). This is consistent with a grandiose narcissism. On the other hand, Cook tends to implement sustainable practices that ensure Apple meets environmental regulations and satisfies public expectations but avoids overly ambitious projects that could jeopardize the company's financial stability. He is also known to be introverted and highly values his privacy. Tim Cook is reserved and avoids the media spotlight. He does not seek attention in an obvious way, but he does seek validation through his leadership. Thus, the difference between Cook's salary and the average employee salary is huge. In 2022, Cook earned more than 1,177 times the average salary of an Apple worker. Very cautious and vigilant with information about himself, he tries to protect his status and power through mechanisms other than social recognition that defend his leadership, such as salary (Lee *et al.*, 2023). This is consistent with a vulnerable narcissist.

Taking the principles of UET (Hambrick & Mason, 1984), we examine whether grandiose and vulnerable narcissistic CEOs influences the environmental sustainability. Also, given that CEO managerial discretion can be affected by CEO duality (Finkelstein, Hambrick *et al.*, 2009; Krause *et al.*, 2014). In this sense, the dual position of CEO-chairperson of the board could affect the relationship between the CEO's vulnerable/grandiose narcissism and environmental sustainability. Indeed, the CEO's dual role may influence business strategies. As such, CEOs may (not) be motivated to invest in certain actions if they think they (do not) serve their interests (McWilliams *et al.*, 2006). Depending on how CEOs perceive that situation, the relationship between CEO narcissism and environmental sustainability will be affected.

In this research, we used a sample of Spanish companies listed on the Madrid Stock Exchange, composed of 214 company-year observations between 2015 and 2020, which enabled us to reach several contributions.

First, this study contributes to research in UET that examines the influence of CEOs' traits on the outcomes of their strategic decisions, specifically, on environmental sustainability (Aguilera *et al.*, 2021; Arena *et al.*, 2018). Our findings reveal that CEO narcissism plays an important role in determining CEP. By doing so, we extend the recent research on the effects of CEO narcissism (Khanchel *et al.*, 2024), as an attribute of managers' personality traits, on strategic decisions and activities within companies (Chatterjee & Hambrick, 2011). Second, our study enriches the literature analysing the two dimensions (Miller *et al.*, 2011; Reina *et al.*, 2014) of CEO narcissism: grandiose and vulnerable. CEO grandiose narcissism has been identified as having a positive impact on environmental sustainability; while CEO vulnerable narcissism has been identified as having a negative impact. Therefore, we extend research on the personality traits of CEOs by contributing to previous studies of whether the two dimensions of CEO narcissism act homogeneously (Jauk & Kanske, 2021). Thus, understanding these two dimensions of CEO narcissism, help to solve the puzzle on what determines the success of a narcissistic CEO and on what contexts lead boards to hire narcissistic CEOs. We also enrich the literature on the dichotomy

of the bright and dark side of the narcissistic personality and its two dimensions: grandiose and vulnerable (Khanchel *et al.*, 2024). Third, this paper contributes to the literature by highlighting the moderating effect of CEO duality on the relationship between grandiose and vulnerable CEO narcissism and CEP. In our study, we suggest that there is a different impact depending on the dimensions of narcissism. Our findings showed that dual CEOs enhancing the negative relationship between CEO vulnerable narcissism and environmental sustainability. Fourth, our work contributes to the literature on the importance of individual-level factors that shape firm orientation towards environmentally responsible actions. Finally, the main body of research on CEO narcissism involves US samples (Chatterjee & Hambrick, 2007, 2011; Buyl *et al.*, 2019), complicating any generalisation of previous results. We respond to this research area to examine other regional contexts, such as the Spanish setting, where executives are explicitly obliged to take all stakeholders into account (Crossland & Hambrick, 2011), orienting our research towards environmentally related activities.

The rest of this paper is structured as follows. Firstly, the theoretical background for the work is presented and the hypotheses are set out. Subsequently, a discussion of these results and their theoretical and managerial implications are given. The study concludes by outlining limitations and providing suggestions for future research.

2. RESEARCH BACKGROUND

In the new global economy, one of the newest strategic initiatives facing companies is environmental sustainability (European Climate Law, 2021); so much so that both business associations (Business Roundtable, 2019) and their leaders (World Economic Forum, 2024) have reaffirmed their commitment to the environmentally sustainable management of their activities. Environmental sustainability refers to the set of corporate behaviours and strategies that mitigate the impact of industry on the natural environment, which include the implementation of actions that reduce energy consumption and waste, using ecologically sustainable resources and employing environmental management systems (Aguilera *et al.*, 2021; Walls *et al.*, 2012). The most common corporate environmental sustainability outcomes described in the literature are: environmental strategy, which refers to the overall approach of a company to deal with the natural environment; environmental performance, which captures corporate environmental impacts; and environmental reporting/disclosures, which refers to the public provision of information on the environmental impact of companies and their initiatives within that field (Aguilera *et al.*, 2021). Our work is focused environmental performance of firms.

Achieving environmental sustainability objectives involves a high commitment from CEOs (Dahlmann & Brammer, 2011) who must adopt a set of generally highly complex decisions. According to UET the more complex a decision is, the greater the influence of CEO traits (Hambrick, 2007).

Previous studies have shown that some CEO demographic attributes (Wang *et al.*, 2016) can have significant impacts on environmental sustainability (Dahlmann & Brammer, 2011; Lewis

et al., 2014). Most of this research has used CEO demographic variables as a proxy for CEO psychological traits (Neely *et al.*, 2020), because of the difficulty of collecting information from the latter (Wang *et al.*, 2016). However, such measures must be considered imprecise (Priem *et al.*, 1999). Directly considering the psychological traits of a CEO is relevant, because CEOs express their psychological traits through their actions; and psychological traits directly influence CEO decision-making process (Finkelstein *et al.*, 2009; Petrenko *et al.*, 2016).

CEOs with an exaggerated perception of their self-importance (i.e. narcissist), are more likely to shape strategic decisions based on their preferences (Hambrick & Finkelstein, 1987). In this sense, CEO narcissism is one of the attributes that can affect the level of risk the CEO wants to take (Gerstner *et al.*, 2013) in each of their decisions, depending on their managerial discretion (Li & Tang, 2010). Hence, narcissistic CEOs may bet on risky and innovative initiatives (Zhang *et al.*, 2017) if they expect to receive the reward they seek for it. Previous work has analysed how a firm's inclination towards environmental issues can be explained by the preferences and priorities of the CEO's personal values and traits (Arenas *et al.*, 2018; Petrenko *et al.*, 2016). However, the different nuances of CEO personality traits have received less attention (Buyl *et al.*, 2025). Hence, we have chosen to focus on grandiose and vulnerable narcissism and their relationship to CEP.

2.1. CEO grandiose/vulnerable narcissism and CEP

Narcissism has been described as a trait that comprehensively encompasses the personality of a CEO, i.e., it overlaps with other important traits, but it encompasses many more nuances of the CEO's personality than all other traits (Engelen *et al.*, 2013). The American Psychiatric Association (2013) defines narcissism as a pattern of behaviour, which can be associated with both grandiose self-assuredness and dominance, as well as a vulnerable attitude (Jauk & Kanske, 2021). Narcissistic individuals often exhibit a combination of self-importance and arrogance (Chatterjee & Hambrick, 2011; Lassoued & Khanchel, 2023; Petrenko *et al.*, 2016) and an intense desire for power (Chatterjee & Hambrick, 2007). They may also feel entitled to special treatment, have difficulty learning from their mistakes, and be unwilling to acknowledge their own shortcomings (Hogan & Kaiser, 2005).

The literature has highlighted two sides of CEO narcissism (Judge *et al.*, 2009). The bright side pertains to the ability to inspire other individuals, boosting the leadership and the adoption of fresh initiatives; the dark side entails instead a demand for constant recognition, lack of empathy and irrationality (Rovelli *et al.*, 2023), that leads these individuals to prevail in their vision in front of others. An important question is to delve into when they are adequate or not for the companies, they lead (Braun, 2017). These characteristics may vary in intensity and expression among individuals: narcissism may be a trait present, to a greater or lesser degree, in all individuals, with no fixed cut-off to identify high or low levels (Foster & Campbell, 2007).

Moreover, we cannot forget that narcissism is composed of cognitive and motivational perspectives (Campbell & Miller, 2011). From a cognitive perspective, narcissism involves a be-

lief in one's superior qualities. Narcissists value themselves very positively on a number of elements such as intelligence and competence; and they are very confident about their abilities (Chatterjee & Hambrick, 2007). From a motivational perspective, their main goal is to reaffirm their sense of superiority. To this aim, the motivating factors of narcissistic CEOs focus on two types of extrinsic rewards: status and social recognition, and money (Cragun *et al.*, 2020). Two main dimensions of narcissism emerge from both the cognitive and motivational perspectives (Khanchel *et al.*, 2024): grandiose narcissism and vulnerable narcissism (Jauk & Kanske, 2021; Miller *et al.*, 2008, 2011). It is important to note that grandiose and vulnerable narcissism are not mutually exclusive, and individuals can display a combination of traits from both (Lee *et al.*, 2023), so that CEOs may not be entirely grandiose or vulnerable (Edershile & Wright, 2021).

Grandiose narcissism refers to an individual need for self-admiration (Campbell *et al.*, 2011). These people always want to be the centre of attention and are characterised by a great sense of self-importance perceiving themselves as exceptionally outstanding and innovative (Judge *et al.*, 2006). They exude superiority and an air of being special, unique, and powerful; a sense of entitlement (Campbell & Foster, 2007) based on a conviction that they deserve privileges or recognition and, perhaps, an unconfessed belief that they are in some way superior to others (Cragun *et al.*, 2020). Grandiose narcissism is often associated with social dominance, skilled in interpersonal relationship and an exaggerated need for power, leading to overt narcissism (Wink, 1991). **Vulnerable narcissism** is related to a chronic need to preserve one's own view of self-views (Dickinson & Pincus, 2003; Knights, 2014; Miller & Maples, 2012). Vulnerable narcissistic individuals are highly confident about their abilities, so they try to protect their status and power (Knights, 2014). In addition, they have poor interpersonal skills and avoid social exposure to defend their self-image (Krizan & Herlache, 2018). Thus, vulnerable narcissism is a covert narcissism, as they are hypersensitive, socially reticent individuals whose personal relationships, however, are marked by arrogance and an insistence on getting their own way (Wink, 1991).

Jauk and Kanske's (2021) review shows that these two dimensions have common cores of self-importance and entitlement. Now, while grandiose narcissists have inflated self-views, and crave affirming recognition by engaging in bold, attention-getting behaviours to achieve it; vulnerable narcissists are confident in their proposals and ideas but are withdrawn. In summary, grandiose narcissism is characterised by agentic extraversion, while vulnerable narcissism is characterised by low extroversion. And it is on this aspect, the search or flight from social recognition, that we base our research as it can mark the success of a CEO and help explain his or her appointment.

While narcissism can influence CEO success, its impact on firm performance is complex. The CEO's dimensions of grandiose and vulnerable narcissism may lead to different strategic decisions (Khanchel *et al.*, 2024). Therefore, according to UET, differentiating between grandiose and vulnerable helps to identify specific behavioural patterns of CEOs narcissism (Jauk & Kanske, 2021) when faced with strategic decisions such as those related to environmental issues.

Environmental sustainability has a dual nature that encompasses both economic instrumentality and social desirability (McWilliams *et al.*, 2006). On the one hand, a good track record in environmental sustainability enhances a firm's attractiveness and increases stakeholder support, which can be beneficial to the firm's long-term performance (Freeman, 1984). On the other hand, environmental sustainability is socially desirable and managers who promote it are well regarded. By studying these economic and social aspects, we can unravel the operating mechanisms of the CEO's grandiose and vulnerable narcissism.

We consider that grandiose narcissism CEOs, thanks to their extraversion and the fact that they cannot stand to be ignored, may take an active role in seeking opportunities for self-promotion. Thus, to obtain their coveted praise and recognition, they will boost the CEP; as this tends to receive considerable positive media attention (Petrenko *et al.*, 2016) and increases the CEO's visibility concerning stakeholders (Chen *et al.*, 2021; Lassoued & Khanchel, 2023). Due to its characteristics, the main motivating factor for this dimension of CEO narcissism is the extrinsic reward of status and social recognition (Cragun *et al.*, 2020). CEOs can gain social desirability from their firms improved social image by promoting environmental sustainability (Tang *et al.*, 2018). Otherwise, achieving high level of environmental performance leads to greater support from stakeholders, greater attractiveness of the company and, therefore, better future results. Thus, grandiose narcissistic CEOs are willing to embrace the risks involved in pursuing environmental sustainability, despite the inherent complexities of such decisions (Gerstner *et al.*, 2013; Li & Tang, 2010).

Vulnerable narcissism CEOs characterised by being highly cautious and vigilant concerning information about themselves, try to protect their status and power through mechanisms other than social recognition. Therefore, they will not take actions that address social concerns. The vulnerable narcissism's motivating factors vulnerable are internal status recognition in their organisation and money (Cragun *et al.*, 2020). Furthermore, the withdrawal that characterises this type of individual (Lee *et al.*, 2023) leads them to underestimate the potential internal and external aids needed to make complex decisions, which may result in lower risk-taking. In sum, they may discourage CEP, due to their habitual interpersonal insensitivity (Bachrach *et al.*, 2022) and introversion. Similarly, vulnerable narcissism CEOs perceive significantly less need for stakeholder support (Godfrey, 2005), as they possess a chronic need to preserve their vision of self (Knights, 2014) and a high level of distrust of others (Miller & Maples, 2012). As Tang *et al.* (2018) demonstrated, by underestimating the amount of resources they need from stakeholders for the survival and development of their firms, vulnerable narcissism CEOs are less motivated to respond to stakeholder demands than they probably should be and, consequently, are less committed to environmental sustainability. Therefore (see Figure 1),

Hypothesis 1a: *The more a company's CEO mainly exhibits traits of grandiose narcissism, the stronger the CEP.*

Hypothesis 1b: *The more a company's CEO mainly exhibits traits of vulnerable narcissism, the weaker the CEP.*

2.2. The moderating effect of CEO duality

One of the most prominent characteristics of the narcissism CEOs is their unlimited hunger for power (Lee *et al.*, 2023). Therefore, it is pertinent to analyse how one of the variables related to CEO power (Tang *et al.*, 2018), CEO duality, may moderate the relationship between grandiose and vulnerable narcissism CEOs and CEP. Prior literature points to CEO-chairperson duality as an important mechanism involved in decreasing the environmental sustainability of firms (Aguilera *et al.*, 2021).

CEO duality, understood as the "practice of consolidating the positions of CEO and chairperson of the board into one person" (Finkelstein & D'Aveni, 1994; Krause *et al.*, 2014), provides the CEO with greater power to act by the simple fact of holding dual post. For narcissism CEOs, who have an intense need for power, it also provides them with greater managerial discretion (Wang *et al.*, 2019). This makes their leadership stronger and more decisive (Finkelstein *et al.*, 2009). Generally, research has shown that duality could be considered undesirable to environmental sustainability (Aguilera *et al.*, 2021) as the CEO is in a more powerful position and may prioritise personal interests over stakeholder demands (Khan *et al.*, 2013) but the literature has scarcely delved into the effects of a dual narcissistic CEO.

CEO duality can influence how narcissistic CEOs approach environmental initiatives (Lassoued & Khanchel, 2023). While it grants them autonomy, we argue that grandiose narcissistic CEOs, who already gain power, media attention, and social recognition from their dual role, might reduce their drive for risky, short-to-medium-term environmental projects (Aguilera *et al.*, 2021). Their primary interests in power and recognition may be sufficiently met through duality, lessening the motivation for additional environmental efforts (McWilliams *et al.*, 2006).

Conversely, when vulnerable narcissistic CEOs also chair the board, their confidence and power are reinforced, leading to decisions prioritizing short-term results (Kim *et al.*, 2009). Their withdrawal and introversion (O'Reilly *et al.*, 2018) mean the increased media attention from duality might even be overwhelming, further diverting them from visible environmental pursuits. Essentially, CEO motivation for environmental investment hinges on whether such practices align with their self-serving interests. Therefore (see Figure 1),

Hypothesis 2a: *The stronger effect of CEO grandiose narcissism on CEP is less observable with CEO duality.*

Hypothesis 2b: *The weaker effect of CEO vulnerable narcissism on CEP is more observable with CEO duality.*

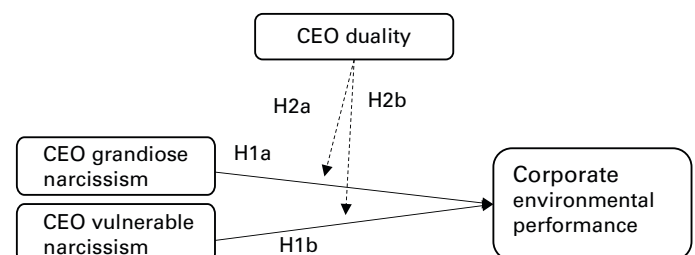


Figure 1
Proposed model

Source: Author's own elaboration.

3. METHODS

3.1. Sample and data sources

The sample procedure is as follows. First, we selected all publicly traded Spanish companies listed on the continuous market of the Madrid Stock Exchange. Spain's growing focus on sustainability, as evidenced by national policies and the EU's Green Deal, offers a valuable context for understanding how CEOs with different narcissistic traits might navigate environmental challenges in a European setting. A market that comprises large, diversified companies across different sectors, that can offer a wide range of companies for sampling. We built a panel dataset for the period 2015-2020. The study is based on 127 listed companies and 167 CEOs.

Second, we took information from CEOs from the annual corporate governance report published on the National Securities Market Commission website. We also hand-collected demographic and other necessary CEO information using Internet sources, including company websites, magazines, and newspaper stories, as well LinkedIn. Frequently, the first year of tenure is often a turbulent year with many changes. The CEO's adjustment process to new position may blur personality traits. Therefore, all CEOs who have held the position for one year or less were eliminated. In this stage, the study is based on 153 CEOs. We hand-collected data on narcissism by revising the sustainability annual reports of the companies as well as annual corporate governance reports. All CEOs for which there is no data about any of the CEO expression of narcissism indicators were eliminated. After this refinement, we arrived at a final sample of 46 Spanish-listed companies, and 54 CEOs with 214 CEO-year observations.

Third, data information on the environmental performance of each company was collected from CSRHub (<https://www.csrhub.com>). This data hub provided information split into four main categories: community, employees, environment, and governance. We used the environment category to test our hypotheses. Finally, financial information was obtained from Iberian Balance Sheet Analysis System (SABI). Table 1 provides the sample distribution by industry.

Table 1
Sample description by industry

	Freq.	%
Consumer goods	26	12.150%
Basic materials, industry, and construction	64	29.907%
Oil and energy	27	12.617%
Consumer services	44	20.561%
Financial services	30	14.019%
Real estate services	5	2.336%
Technology and telecommunications	14	6.542%
Transport and communications	4	1.869%

Source: Author's own elaboration.

3.2. Measures

A. DEPENDENT VARIABLE: CEP

CEP was measured using the yearly median score from CSRHub's monthly environmental category, ranging from 0 to 100, with higher scores indicating better company ratings. We used a one-year lagged period for the dependent variable. This conservative lagged design helps to neutralize potential effects stemming from CEO succession events, providing a more robust test for our hypotheses.

B. INDEPENDENT VARIABLES: CEO GRANDIOSE AND VULNERABLE NARCISSISM

CEOs of publicly traded companies are generally reluctant to participate in surveys that relate to aspects of their narcissistic personality. Moreover, in instances where they do choose to respond, there is a heightened likelihood of their responses being swayed by social desirability bias (Agnihotri & Bhattacharya, 2019; Chatterjee & Hambrick, 2007; García-Meca *et al.*, 2021). Given these limitations, and following previous studies (Cragun *et al.*, 2020), we used secondary sources to extract this information.

The literature on instruments for measuring CEO narcissism is relatively scarce (Zhu & Chen, 2015), especially in the case of vulnerable narcissism (Jauk & Kanske, 2021). Cragun *et al.* (2020) prompt that most previous studies have mainly used Chatterjee and Hambrick (2007) scale, itself based on Emmons' version of the Narcissistic Personality Inventory, but without delving into the two possible dimensions of narcissism. Although the two dimensions of narcissism has some overlap, evidence indicates that they evaluate distinct constructs (Hart *et al.*, 2017; Krizan & Herlache, 2018). In this research we suggested the possibility of measuring both dimensions of CEO narcissism, grandiose and vulnerable, with the Chatterjee and Hambrick (2007) scale. To do so, we propose to distinguish, based on the scale measures, those facets that characterise grandiose narcissism more in front of the vulnerable narcissism (Dickinson & Pincus, 2003).

Since narcissistic personality "is a relatively stable disposition over time and temporally precedes the measurement of firm performance" (Chatterjee & Hambrick, 2007, p. 362), we consider as a rule the initial year of the study (2015) to measure CEO narcissism. However, when 2015 was the CEO's first year in office or if there was a change of CEO during the study period, we take the next year with available information.

In line with Dickinson and Pincus (2003) proposal and following the methodology of previous work (Khanichel *et al.*, 2024), the steps involved in obtaining our measure are as follows. First, we use four measures for CEO narcissism (Chatterjee & Hambrick, 2007), used extensively in previous studies.

(1) **CEO photograph**: the prominence of a CEO photograph in the letter to stakeholders either the annual report or the sustainability report. We scored this indicator following Chatterjee and Hambrick (2007): four points if the photo was of the CEO alone and took up more than half a page; three points if the photo was of the CEO alone and took up less than half a page; two points if the CEO was photographed with one or more fellow executives; one point if there was no photograph of the CEO

(García-Meca *et al.*, 2021); and zero points when there is no CEO's letter.

(2) **CEO in press:** CEO prominence in the press releases of the organisation. "We calculated the number of times the CEO was mentioned by name in the press releases on each company's website and divided by the total number of words in all the company's press releases" (Chatterjee & Hambrick, 2007). We multiplied this CEO narcissism measure by 1,000 to be able to work with it more conveniently.

(3) **CEO I-ism:** the CEO's use of the first-person singular in the CEO letter either the annual report or the sustainability report. We counted the number of first-person singular pronouns (I, me, mine, my, and myself) that the CEO used, divided by the sum of those pronouns plus all first-person plural pronouns (we, us, our, and ourselves). Thus, our measure is the relative ratio of all first-person pronouns that were singular' (Chatterjee & Hambrick, 2007). As we were studying Spanish companies, we first translated any letters that had already been published in Spanish into English. Moreover, we scored zero when there was no CEO letter either the annual report or the sustainability report.

(4) **CEO relative cash pay:** CEO cash compensation divided by the average TMT salary. We calculated the average salary of TMT members and compared it with the salary of the CEO obtained from the annual corporate governance reports available from the Spanish Securities and Exchange Commission (CNMV).

According to our theoretical arguments, these two dimensions must be measured, in each case, through indicators that reflect the main motivation used to achieve the goal of feeling superior to others. In this sense, grandiose narcissism should be measured using indicators that reveal an overt and exaggerated search for social recognition; conversely, vulnerable narcissism should be assessed using more covert and less publicly perceptible indicators, but ones that contribute to reinforcing that feeling of self-esteem and superiority over others, such as monetary recognition. These measurement approaches reflect the different nature of each dimension of narcissism, capturing the exhibitionism of grandiose narcissism and the confidence and self-belief of vulnerable narcissism.

In second step, we conducted a correlation analysis (Table 2). This analysis showed that the correlation among CEO photograph, CEO press and CEO I-ism items are positives and significantly correlated ($p < 0.01$). In contrast, CEO relative cash pay correlates with CEO press negatively and significantly. Then, we standardized these four measures to build our indicator. In third step, we conduct a factor analysis (Agnihotri & Bhattacharya, 2019).

Table 2
Pearson correlation matrix

	Mean	S.D.	1	2	3	4
1. CEO photograph	2.580	1.297	1	0.242**	0.369**	0.165*
2. CEO in press	0.599	0.883		1	0.231**	-0.259**
3. CEO I-ism	0.102	0.111			1	0.099
4. CEO relative cash pay	2.882	2.173				1

* Correlation is significant to 0.05 (bilateral) and **correlation is significant to 0.01 (bilateral)

Source: Author's own elaboration.

The CEO photograph, CEO press and CEO I-ism loaded on a first factor, while the CEO relative cash pay loaded in a second factor, both with an eigenvalue greater than one. To assess the validity of the identified factors, the Kaiser-Meyer-Olkin (KMO) sample adequacy statistic was 0.516, exceeding the threshold of 0.5. In addition, Bartlett's test of sphericity yielded statistical significance at the 99% confidence level (Hair *et al.*, 2019).

Items that loaded on the first factor reflected the CEO's desire for recognition and vanity enhancement (García-Meca *et al.*, 2021), underscoring the perceived importance of their leadership (Zhu & Chen, 2015). In sum, they were indicators associated with the search for social dominance and reflecting the high degree of extroversion of the CEO, particular characteristics of grandiose narcissism CEOs (**Grandiose_N**) (Jauk & Kanske, 2021). The second factor was composed exclusively of the relative cash remuneration received by the CEO. It showed the search for recognition of a superior position in relation to others and their desire for power (Agnihotri & Bhattacharya, 2019); but always far from the social focus and in terms of monetary reward. This social withdrawal and introversion were characteristics of vulnerable narcissism CEOs (**Vulnerable_N**) (Jauk & Kanske, 2021). Finally, the two indices of narcissism were calculated (Grandiose_N y Vulnerable_N). For this, we computed the mean of the scores for each item.

C. MODERATOR VARIABLES: CEO DUALITY

CEO duality (**Duality**) was indicated with a dichotomous variable that assumed a value of 1 when the CEO and the chairperson of the board were the same person and 0 if otherwise.

D. CONTROL VARIABLES

We have integrated several corporate governance and firm-level controls, relying on insights from prior empirical research that has identified key variables recognised for their impact on environmental performance.

We controlled for corporate governance —CEO tenure (**CE-Otenure**), CEO gender (**CEOgender**), board size (**Bsize**), board independence (**Bindpendence**) and the ratio of women on board (**Bwomen**)— and organisational —firm size (**Fsize**), company financial performance (**ROA**) and company sector (**Sector**)—.

Past studies have shown that *CEO tenure* is inversely related to environmental performance (Khan *et al.*, 2020). We measure the *CEO tenure* the number of years since a CEO had been appointed and we then calculate its natural log. The CEO gender has showed positively related to green innovations (Galbreath, 2019). We measured *CEO gender* as a dichotomous variable that assumed a value of 1 when the CEO is a man and zero if she is a woman.

Previous literature has concluded that *board size* is positively related to CEP (de Villiers *et al.*, 2011; Aguilera *et al.*, 2021). We measured *board size* as the number of directors sitting on a board. Previous studies have shown positive relations between *board independence* and environmental performance (de Villiers *et al.*, 2011). We measured the independence of the board as the ratio of board members that are independent to the company to the total number of board members (Webb, 2004). The *percent-*

age of women on the board has also been positively related to the environmental performance of the company. We, therefore, controlled for the proportion of women on the board, measured as the number of women on the board divided by the total number of board members.

The control variables of the company were as follows: *firm size* (Díaz Chica *et al.*, 2019), measured as the natural log of all company employees, *company financial performance* using Return on Assets (ROA) and company sector measured as a categorical variable using the Madrid Stock Exchange classification.

A description of all the variables is presented in Table 3.

Table 3
Variables definition

Variables	Description
CEP	Yearly median of a monthly score which range from 0 to 100.
Grandiose_N	The factor composed of: CEO photograph, CEO in press and CEO I-ism.
Vulnerable_N	The factor composed of: CEO relative cash pay.
Duality	Dummy variable that equals 1 if the CEO is also the chairperson of the board and 0 otherwise.
CEOtenure	The natural logarithm of the number of years since a CEO had been appointed.
CEOgender	Dummy variable that equals 1 if the CEO is a man 0 if she is a woman.
Bsize	The number of directors sitting on a board.
Bindependence	The ratio of board members that are independent to the company to the total number of board members.
Bwomen	The number of women on the board divided by the total number of boards members
Fsize	The natural logarithm of all company employees.
ROA	Return on assets measured as the proportion of operating income before interest and taxes divided by the total assets.
Sector	Categorical variable using the Madrid Stock Exchange classification.

Source: Author's own elaboration.

3.3. Regression model and technique of analysis

Our research aims to seeks to furnish empirical evidence on two interconnected focal points. Firstly, it delves into the influence of CEO grandiose and vulnerable narcissism on CEP. To address the hypotheses 1a and 1b, we built Model 1, as follows (1):

$$CEP_{it} = \beta_0 + \beta_1 Grandiose_{Nit} + \beta_2 Vulnerable_{Nit} + \beta_3 CEOtenure_{it} + \beta_4 CEOgender_{it} + \beta_5 Bsize_{it} + \beta_6 Bindependence_{it} + \beta_7 Bwomen_{it} + \beta_8 Fsize_{it} + \beta_9 ROA_{it} + \beta_{10} Sector_{it} + \eta_i + \mu_{it} \quad (1)$$

Secondly, it explores the potential contingent nature of this impact in the context of CEO-chairperson duality. In addition, it should be highlighted that prior literature points to CEO-chairperson duality as important mechanisms involved in decreasing environmental sustainability of firms (Aguilera *et al.*, 2021). For this reason, our second objective is to assess the moderating effect that CEO-chairperson duality has on CEP. To test hypotheses 2a and 2b, we built Model 2, as follows (2):

$$CEP_{it} = \beta_0 + \beta_1 Grandiose_{Nit} + \beta_2 Vulnerable_{Nit} + \beta_3 Duality_{it} + \beta'_1 Grandiose_{Nit} \times Duality_{it} + \beta'_2 Vulnerable_{Nit} \times Duality_{it} + \beta_4 CEOtenure_{it} + \beta_5 CEOgender_{it} + \beta_6 Bsize_{it} + \beta_7 Bindependence_{it} + \beta_8 Bwomen_{it} + \beta_9 Fsize_{it} + \beta_{10} ROA_{it} + \beta_{11} Sector_{it} + \eta_i + \mu_{it} \quad (2)$$

This study employs the panel data regression model using the STATA 15.1 software. First, we run a power analysis for a multiple linear regression model which showed that the sample was sufficiently large, (estimated sample size = 151), statistical power is adequate (80%) and R2 test is significant ($p = 0.050$). Second, the Breusch and Pagan Lagrangian multiplier test and White test was run to check whether to use ordinary least square model or random effects model. The test showed significant result ($p = 0.000$) which proves that OLS is not an appropriate test given the heterogenous nature of the data set.

Third, the Hausman test was run to choose between fixed effects model and random effects model. The significant result ($p = 0.005$) showed that fixed effects model would provide a better estimation of results. Fourth, multicollinearity was checked using variance inflation factor (VIF) (Table 4) which confirmed that data does not have a multicollinearity problem as all the VIF values were within the acceptable limit of 10 (Kutner *et al.*, 2005). Fifth, the panel data was checked for heteroskedasticity, Wald test which should significant results ($p = 0.000$). Thus, the diagnostic tests have revealed that the data suffers from the problem of heteroskedasticity. It can be removed by clustering across the cross sections i.e. years in the fixed effects model. Lastly, there is no evidence of endogeneity due to the lack a correlation between explanatory variables and residuals.

Table 4
Descriptive statistics, Pearson correlation matrix and VIF

Panel A: Descriptive statistics and Pearson correlation matrix															
	N	Mean	S.D.	Min.	Max.	1	2	3	4	5	6	7	8	9	10
1. CEP	214	63.413	7.912	36.167	82.000	1									
2. Grandiose_N	214	0.000	1.000	-1.743	2.930	0.106	1								
3. Vulnerable_N	214	0.000	1.000	-2.074	3.308	-0.078	0.000	1							
4. CEOtenure	214	2.059	0.720	0.693	3.466	-0.134 ^x	0.211 ^{**}	0.246 ^{**}	1						
5. CEOgender	214	0.953	0.212	0.000	1.000	-0.036	-0.104	0.026	0.079	1					
6. Bsize	214	12.430	2.689	5.000	18.000	0.218 ^{**}	0.107	0.110	-0.206 ^{**}	-0.014	1				
7. Bindependence	214	0.480	0.151	0.150	0.850	0.131 ^x	-0.235 ^{**}	-0.105	-0.053	-0.153 [*]	-0.150 [*]	1			
8. Bwomen	214	0.207	0.105	0.000	0.460	0.162 [*]	-0.133 ^x	0.158 [*]	0.088	-0.212 ^{**}	0.019	0.175 [*]	1		
9. Fsize	214	9.414	1.602	4.963	12.210	0.297 ^{**}	0.149 [*]	0.142 [*]	-0.103	0.014	0.255 ^{**}	0.264 ^{**}	0.104	1	
10. ROA	214	5.744	10.388	-39.250	99.200	-0.149 [*]	-0.038	0.078	0.115 ^x	0.104	-0.144 [*]	0.003	-0.025	-0.134 ^x	1
Panel B: Multicollinearity Diagnostics using Variance Inflation Factor (VIF)															
VIF						1.30	1.19	1.29	1.37	1.37	1.24	1.34	1.15	1.37	1.06

Panel A shows the descriptive statistics and the Pearson correlation values. Panel B shows the Variance Inflation Factor (VIF). ^{**}Correlation is significant to 0.01 (bilateral), ^{*} correlation is significant to 0.05 (bilateral) and ^x correlation is significant to 0.1 (bilateral).

Source: Author's own elaboration.

4. RESULTS

The descriptive statistics are summarized in Table 4. Among the dependent variable, CEP present a mean of 63.413 and range from 36.167 to 82. This indicates that Spanish-listed companies have an acceptable (over 50-points score) CEP following CSRHub scale.

The mean of the natural logarithm of CEO tenure is 2 and more of the 95% of our CEOs are men. The average of board size is 12 members which ranges from 5 to 18, boards have a 48%

of independent directors as average and a 20.662% of women directors. The mean of firm' ROA is 5.744 and of the natural logarithm of firm size is 9.414. Additionally, Table 1 indicates that all the variables present low correlation coefficients (<0.800).

We conducted a panel regressions analysis incorporating fixed- effects, as outlined in Table 5. The objective is to understand the behavioural patterns of CEOs concerning environmental performance in response to varying levels of grandiose or vulnerable narcissism.

Table 5
Results of the regression analysis models considering fixed-effects

Variables	Model 1	Model 2	Modelo 3	Model 4	Hypotheses status
Grandiose_N		1.015* (0.668)	0.614 (0.565)	1.109* (0.668)	H1a Supported
Vulnerable_N		-0.909* (0.535)	-1.485*** (0.560)	1.878** (0.861)	H1b Supported
Duality			3.567*** (1.198)	3.463*** (1.147)	
Grandiose_N*Duality				-1.015 (1.077)	H2a Not supported
Vulnerable_N*Duality				-5.753*** (1.164)	H2b Supported
CEOtenure	-0.881 (0.727)	-0.912 (0.773)	-1.303* (0.769)	-0.978 (0.733)	
CEOgender	0.942 (2.682)	2.229 (2.715)	2.644 (2.665)	4.126 (2.579)	
Bsize	0.416** (0.205)	0.423** (0.203)	0.371* (0.200)	0.654*** (0.200)	
Bindependence	3.818 (3.634)	4.756 (3.776)	4.477 (0.701)	4.343 (3.586)	
Bwomen	10.071** (4.970)	13.032*** (5.105)	10.241** (5.002)	6.987 (4.791)	
Fsize	1.030*** (0.346)	0.979*** (0.359)	0.901** (0.352)	1.166*** (0.346)	
ROA	-0.069 (0.049)	-0.061 (0.049)	-0.059 (0.048)	-0.085* (0.338)	
Sector effects	Yes	Yes	Yes	Yes	
Year effects	Yes	Yes	Yes	Yes	
Constant	75.701*** (5.328)	43.553*** (5.393)	44.416*** (5.293)	44.258*** (5.135)	

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

Source: Author's own elaboration.

On the one hand, results provide support for the positive influence that **CEO grandiose narcissism** has on the firm's environmental performance (coef. 1.015, $p < 0.1$). In other words, the presence of grandiose narcissism CEOs results in high level of CEP of firms that they lead. On the other hand, results also provide support for the negative influence that **CEO vulnerable narcissism** has on the firm's environmental performance (coef. -0.909, $p < 0.1$). Thus, the presence of vulnerable narcissism CEOs results in a low level of CEP of firms that they lead. Supporting our hypotheses 1a and 1b.

Regarding Model 4, the aim is to study the moderating effect of CEO-chairperson duality in the above relationships. Concerning the impact of CEO grandiose narcissism on environmental performance of firms, the CEO-chairperson duality did not show a significative relationship. Otherwise, CEO duality strengthens the negative relationship between CEO vulnerable narcissism and CEP (coef. -5.753, $p < 0.01$). Thus, we found support for hypothesis 2b.

5. ROBUSTNESS ANALYSIS

We assess the robustness of our primary findings employing a regression analysis considering robust fixed effects and by using a random sample selection, approximately 75% of the sample, in total 161 cases. After carrying out the robustness (Table 6), we can state that the CEO grandiose narcissism has a positive impact on

environmental performance of firms that he or she leads (1.015, $p < 0.01$) and CEO vulnerable narcissism a negative and significant one (-0.909, $p < 0.05$). In addition, the moderation role of CEO-chairperson duality in the relationship between CEO grandiose narcissism and CEP has not been proven. Lastly the relationship of the CEO vulnerable narcissism and the CEP is strengthened when the CEO also chairs the board (-5.753, $p < 0.01$).

Table 6
Results of the regression analysis models considering for the robustness tests

Variables	Model 1	Model 2	Model 5	Model 6
	Robust fixed-effects	Robust fixed-effects	Random Sample 75%. Fixed-effects	Random Sample 75%. Fixed-effects
Grandiose_N	1.015*** (0.612)	1.109*** (0.400)	1.080* (0.621)	0.931000 (0.736)
Vulnerable_N	-0.909** (0.401)	1.878*** (0.408)	-0.579 0.682	1.301422 (0.941)
Duality		3.463*** (1.040)		4.030000*** (1.377)
Grandiose_N*Duality		-1.015 (0.917)		-0.513000 (1.215)
Vulnerable_N*Duality		-5.753*** (0.902)		-5.606000*** (1.472)
CEOtenure	-0.912* (0.500)	-0.978** (0.404)	-0.419 (0.887)	-0.726000 (0.853)
CEOgender	2.229* (1.725)	4.126*** (1.469)	1.059 (3.035)	3.280000 (2.926)
Bsize	0.423*** (0.097)	0.654*** (0.140)	0.494** (0.237)	0.670000*** (0.235)
Bindependence	4.756*** (1.499)	4.343** (1.912)	6.099 (4.196)	4.927000 (4.051)
Bwomen	13.032*** (1.589)	6.987*** (0.897)	10.511* (5.812)	4.619000 (5.622)
Fsize	0.979*** (0.118)	1.120*** (0.346)	0.817** (0.401)	1.013500*** (0.383)
ROA	-0.061** (0.031)	-0.085*** (0.338)	-0.093* (0.051)	-0.096000** (0.048)
Sector effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Constant	43.130*** (1.323)	38.64*** (1.305)	45.039*** (6.037)	40.572000*** (5.855)

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.16$. Discussion

Source: Author's own elaboration.

Nowadays, there is nothing more critical for business than dealing with the environmental degradation (Aguilera *et al.*, 2021). There are many economic and social implications (McWilliams *et al.*, 2006) that can be derived from high or low level of CEP. It presents a challenge for the company's management, especially for its CEO. The CEO's commitment to environmental initiatives depends largely on their beliefs and values, as well as on the personal return they can expect from such decisions. Thus, understanding the CEO's personality attributes and,

more specifically, his/her narcissism, is important for the CEP. Therefore, this study investigates whether and to what extent dimensions of CEO narcissism influence CEP.

Traditionally, the literature has considered that the narcissistic personality of a CEO to be like a two-sided star (Rovelli *et al.*, 2023): the obverse side links this personality attribute with leadership, ability to create new competitive scenarios and taking risks in decisions (Maccoby, 2006); the reverse side, with arrogance (Al-Shammari *et al.*, 2019; Lassoued & Khanchel, 2023;

Petrenko *et al.*, 2016), feeling of superiority, an enormous craving for power (Chatterjee & Hambrick, 2007) avoiding collaboration and teamwork. So, narcissistic CEOs are considered passionate and charismatic people, but they often do not listen to advice, are emotionally isolated, lack empathy, and are distrustful (Knights, 2014; Maccoby, 2003). Considering that there are different levels of intensity of this personality attribute, and that its two sides can be combined in the same individual, *does a narcissism CEO help or hinder the environmental performance achieved by his or her company?*

To properly address this question, we distinguish between the grandiose and vulnerable dimensions of CEO narcissism (Dickinson & Pincus, 2003). These two dimensions, although share common aspects of both the bright and dark sides of narcissism at their root, show clear differences. These dissimilarities, in turn, lead to disparate behaviours (Jauk & Kanske, 2021) that affect the environmental performance of their companies. Specifically, the mechanisms used to achieve their goals through their motivations are different (extraversion versus introversion), and so are their decisions and the results that derive from them.

With insights from UET, we have been led to the conclusion that CEP could be significantly affected by both CEO grandiose and vulnerable narcissism. It is interesting to note that that grandiose narcissism is more present in those CEOs who seek to be always in a “storefront”, as they show a great eagerness for social exhibitionism. Thus, social recognition is central to the reward they seek for their actions. In contrast, vulnerable narcissism is more present in more “discreet” CEOs, who shy away from social recognition and are more covert. In this case, the focus of the reward they seek for their actions is on monetary issues.

Consistent with the logic that grandiose narcissists crave attention, we concluded that grandiose narcissism CEOs promoted higher CEP. The grandiose narcissism CEO are involved in achieving CEP as a mechanism that helps them to achieve their personal goal: a constant need for admiration. The grandiose narcissistic CEOs are aware that an adequate environmental performance brings with it social recognition from different stakeholders as well as from the media and press, which greatly enriches their personal egos. For all these reasons, and despite the shadows that can accompany a narcissistic personality, the grandiose narcissism CEOs embrace the goal of achieving good environmental results. However, in the pursuit of this milestone, they may prioritise their personal interests over the interests of other stakeholders or society.

We extended the integration of UET by applying it to the environmental sustainability literature and showing that environmental performance can be an outcome that helps satisfy a personal need for attention and reinforces the self-image of a grandiose narcissistic CEOs (Petrenko *et al.*, 2016).

On the contrary, we conclude that the vulnerable form of narcissism, reflected through displays of refusal to be part of a social storefront, limits the environmental performance of companies. In this case, the CEOs’ personal interests are not aligned with the potential rewards of high environmental performance. From the perspective of a vulnerable narcissism CEOs, the social implication of this type of company performance is not attractive.

The effects of CEO narcissism on environmental sustainability may differ across countries due to varying cultural values and institutional background, with individualistic cultures potentially fostering bold, recognition-driven initiatives, while collectivist cultures prioritise reputation management and regulatory compliance.

If narcissistic CEOs are also the chairperson of the board, their relevance is significantly increased (Chen *et al.*, 2021). This privileged position in the company does not diminish the grandiose narcissistic CEOs’ drive for their company to achieve high level of environmental performance. On the contrary, the ambition of this type of individuals for social recognition and applause knows no bounds; and despite having other mechanisms to achieve recognition (the dual position), they continue to strive to show society good CEP that allows them to be identified as “superior” managers.

Conversely, when dual CEOs are characterised as vulnerable narcissism, they increase their rejection of pursuing CEP. The rise of their power enhances their rejection of the long-term economic implications of such strategic choices, as well as assertiveness in avoiding other visions put forward by different stakeholders (see Figure 2).

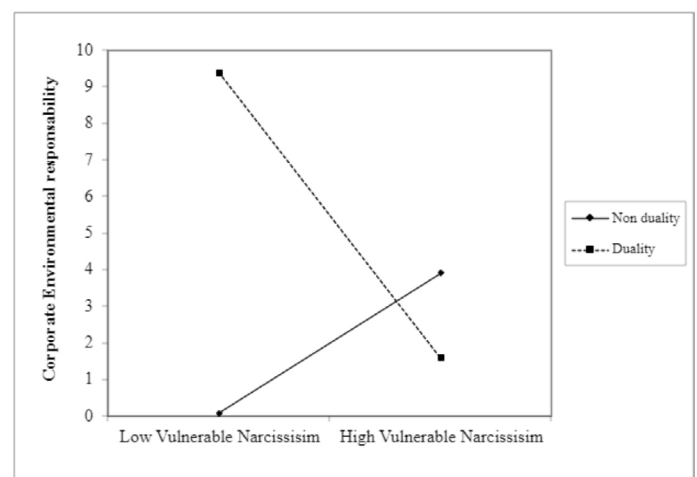


Figure 2

The moderating role of duality between CEO vulnerable narcissism and corporate environmental performance

Source: Author’s own elaboration.

Our research also has implications for corporate governance and CEO appointments. First, the study reveals the predominant form of narcissism —grandiose or vulnerable— impacts on CEP. Companies committed to environmental sustainability, particularly in high-impact sectors, must carefully consider this personality trait in their leadership selection. Second, the findings highlight the critical moderating role of CEO-chairperson duality. This dual role can alter the relationship between both grandiose and vulnerable narcissistic CEOs and CEP, necessitating careful consideration during appointments. Finally, board directors should improve the monitoring and control over corporate decision-making when either grandiose or vulnerable narcissistic CEOs also chair the board. Along the same lines, a company

should further improve corporate governance mechanisms, such as implementing decentralized decision-making processes when the CEO also chairs the board. These recommendations must be nuanced by the significant challenges involved in measuring CEO narcissism and by the presence of different cultural contexts.

7. LIMITATIONS AND FUTURE RESEARCH

This study acknowledges several limitations that pave the way for future research. First, despite the significant difficulty in data collection, expanding the sample size would be desirable to enhance the robustness of our findings. Second, while the use of unobtrusive behavioral measures to assess CEO personality is well-established in upper echelons research, we acknowledge potential concerns regarding construct validity. Our proxies capture the external manifestations of narcissism, which may not fully reflect the internal psychological complexity of the trait. Future research could benefit from employing a multi-method approach, combining secondary data with psychometric surveys to achieve convergent validity, particularly for the vulnerable dimension, which is inherently more covert and difficult to capture through public organisational data. Third, while narcissism is a stable CEO attribute, our observation period was not particularly long, so extending the timeframe would be beneficial. Finally, we used environmental data from CSRHub; future research could compare this with companies' direct environmental disclosures. In summary, research on CEO psychological traits and environmental performance is nascent, offering fertile ground for further exploration.

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9. AUTHORSHIP

Conceptualization: Paula Villalba-Ríos, Julio Vecino-Gravel, Carmen Barroso-Castro, M.^a Mar Villegas-Periñán; Methodology: Julio Vecino-Gravel, Paula Villalba-Ríos; Formal analysis and investigation: Carmen Barroso-Castro, M.^a del Mar Villegas-Periñán; Writing-original draft preparation: Paula Villalba-Ríos, Julio Vecino-Gravel, Carmen Barroso-Castro, M.^a Mar Villegas-Periñán; Funding acquisition: Paula Villalba-Ríos, Julio Vecino-Gravel, Carmen Barroso-Castro, M.^a Mar Villegas-Periñán.

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