

Chasing—or Escaping—the Limelight of Sustainability Media Attention? Narcissism's Opposing Effects for Women and Men CEOs on Environmental Performance

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Chasing—Or Escaping—The Limelight of Sustainability Media Attention? Narcissism's Opposing Effects for Women and Men CEOs on Environmental Performance. © 2026 by Gloor, J.L., Chiu, S., Walls, J., et al. is licensed under CC BY 4.0. To view a copy of this license, visit [here](https://creativecommons.org/licenses/by/4.0/). Forthcoming in the *Journal of Management Studies* (formally accepted on 31 March 2026).

ABSTRACT

According to strategy research, firms with more narcissistic CEOs and firms with women CEOs exhibit better environmental performance (EP); however, we propose that better EP is *unexpected* when jointly considering these characteristics. Although positive attention theoretically drives more narcissistic CEOs' EP, by considering the gendered factors influencing CEO cognition and behavior, we propose this effect reverses for women. We develop and validate a novel, earnings-call-based machine learning measure of CEO narcissism (which we also compare with existing measures by Chatterjee and Hambrick [2011] and Petrenko et al. [2016]) to test how CEO sex, narcissism, and positive attention shape EP. We triangulate evidence supporting our hypotheses from S&P 1500 firm panel data (Study 1) and an experiment with strategic leaders (Study 2): when EP generates more positive media attention, more narcissism negatively (positively) affects EP with women (men) leaders. Advancing a more precise understanding of how CEO narcissism affects EP for men *and* women CEOs, we explain the mixed effects of CEO narcissism and CEO sex in separately developing literatures; we also contribute to the microfoundations of (environmental) strategy with important implications for scholarship and practice while also mitigating measurement constraints in understanding the relations between CEO narcissism and firm action.

Keywords:

CEO, environmental performance, gender, measurement, narcissism, sustainability

Addressing sustainability challenges like climate change is an urgent corporate priority (DTTL, 2022; George et al., 2016) that CEOs are uniquely positioned to tackle (Walls and Berrone, 2017). CEOs' values, personalities, and experiences significantly influence strategic outcomes, including sustainability performance (Hambrick and Mason, 1984; Hambrick, 2007). Recently, strategy scholars have sought to open the proverbial "black box" by exploring the underlying psychological dynamics that drive CEO decisions around corporate strategy, known as "behavioral strategy" or "microfoundations research" (e.g., Levinthal, 2011; Powell et al., 2011). As part of this rapidly emerging microfoundations of strategy research grounded in psychology (Salaiz et al., 2021), Wernicke and colleagues (2022) showed that CEO attributes account for up to one-third of corporate sustainability outcomes.

Of particular importance among leaders and CEOs is the prevalent, underlying psychological trait of narcissism (Braun, 2017; Cragun et al., 2020). Prior research shows CEO narcissism shapes corporate strategy (see Cragun et al., 2020, for a review) through actions that generate narcissistic esteem (Kernberg, 1975; Morf and Horvath, 2007; Morf and Rhodewalt, 2001) and attract positive attention (Chatterjee and Hambrick, 2011; Gerstner et al., 2016). Narcissistic CEOs' deep-seated need for positive regard also predicts better corporate sustainability (e.g., Gupta et al., 2019; Petrenko et al., 2016) because sustainability performance often elicits positive media attention (Sander et al., 2021; Tavakolifar et al., 2021).

However, most studies on CEO narcissism and sustainability outcomes, including environmental performance (EP), have focused on men CEOs (e.g., Al-Shammari et al., 2019; Bildirici et al., 2024; Bouzouitina et al., 2021; Kind et al., 2023; Petrenko et al., 2016; Tang et al., 2018),¹ mostly due to the historical scarcity of women CEOs. Yet, theoretically, gender² stereotypes likely drive different dynamics for women versus men CEOs (Joshi et al., 2024; Mui

and Hill, 2023; Shea and Hawn, 2019). Consequently, how CEO narcissism influences corporate outcomes like EP may differ for women—a small but growing share of CEOs (Buchholz, 2022)—has been overlooked, and our understanding remains incomplete. Here, we aim to productively change the scholarly conversation (Healey et al., 2023) on the microfoundations of sustainability by proposing distinct processes for men and women to explain the CEO narcissism-EP link.

Sustainable strategies closely align with gender stereotypes for women (e.g., warmth and communality; Mui and Hill, 2023; Shea and Hawn, 2019)—a congruence facilitating women’s sustainability endeavors (Byron and Post, 2016; Mui and Hill, 2023). However, if narcissistic CEOs seek attention, and if sustainability both garners attention and aligns with women leaders’ stereotypic strengths, one might reasonably expect narcissistic women CEOs to be especially effective champions of environmental performance. Yet, this expectation rests on a largely unexamined assumption: narcissism equally motivates men and women CEOs.

In this research, we predict a different dynamic when *jointly* considering CEO narcissism and sex due to the attention dynamics that motivate narcissists, which requires a new theoretical approach. Here, we use gender role incongruence (which explains how people are judged more when they behave in ways that conflict with societal expectations for their gender; Eagly and Karau, 2002) as our central theoretical lens, with the extended agency model of narcissism (which explains how narcissists seek rewards like adulation; Campbell and Foster, 2007) as our overarching framework. Specifically, we argue that narcissism’s dynamics operate differently for men and women CEOs, based on the extended agency model of narcissism driving processes within CEOs and the shifting standards model (i.e., how others’ subjective evaluations are anchored to gender stereotypes; Biernat et al., 1991) driving processes within the media.

Together, these complementary frameworks explain how media attention (de)motivates CEOs to pursue EP depending on their sex and narcissism, and why narcissistic female CEOs respond differently, while also advancing the simpler story portrayed in the literature (i.e., that all narcissistic CEOs seek attention because EP garners attention; e.g., by Petrenko et al., 2016).

Integrating and testing new theory that CEOs' impact on firm EP is based on their narcissism *and* sex, we propose the media amplifies this combined effect through subjective observers who rely on gender stereotypes (Joshi et al., 2024). Grounded in the shifting standards model (Biernat et al., 1991), we theorize that ostensibly equal positive media visibility is differently perceived and motivating for men and women CEOs, further differentiating their EP. In doing so, we distinguish between media expectations (i.e., CEOs' beliefs about anticipated media praise and visibility) and media reactions (i.e., the actual recognition CEOs receive through media coverage after actions, shaping their subsequent reinforcement or discouragement from similar actions). The extended agency model of narcissism (Campbell and Foster, 2007), explains how CEOs' expectations of recognition motivate narcissistic CEOs to pursue visibility, while the shifting standards framework (Biernat et al., 1991) describes how gendered media reactions may differentially reward or penalize behaviors by men and women CEOs. Following Turner and coauthors (2017), we triangulate our findings using longitudinal data from S&P 1500 firms (Study 1) and a strategy simulation with strategic leaders (Study 2). This multi-method approach is valuable for management research and CEO narcissism studies, especially since “[different] methods...[have contributed] to divergent results,” stymieing theoretical advancement and sensemaking in the CEO narcissism literature (Cragun et al., 2020, p. 909).

This research provides several contributions to the management literature. First, we enrich theory and research on CEO narcissism, which is often guided by upper echelons theory (see

Cragun et al., 2020, for a review). By integrating psychological theory, we outline and test the precise self-regulatory processes that generate narcissistic esteem among men and women CEOs, which are driven by positive media attention related to EP. Specifically, we argue (and show) that more narcissistic CEOs do not always generate better EP as suggested by previous research guided by upper echelons theory (e.g., Bouzouitina et al., 2021; Petrenko et al., 2016; Tang et al., 2018). Instead, our replicated patterns of results from mixed-method studies show that this effect depends on CEO sex and the positive media attention that ostensibly drives EP. While emerging research considers the direct links between CEO sex and behavior (see Anglin et al., 2022; Mah et al., 2023, for reviews), our deeper examination of heterogeneity within female CEOs and demonstration of their effects on EP add theoretical and practical value; it also advances the strategic management literature, which has traditionally presumed women leaders and CEOs are a homogeneous group exhibiting similar decision-making and impacts on organizational outcomes, further building on recent advancements (e.g., Mui and Hill, 2023).

Second, we extend behavioral (microfoundations) strategy research by introducing the shifting standards framework (Biernat et al., 1991) to explain variation in narcissistic women CEOs' EP. Prior research shows female CEOs who align closely with *prescriptive* gender stereotypes may be rewarded for sustainability-related action (e.g., Mui and Hill, 2023). Yet narcissism represents a *proscriptive* trait for women (De Hoogh et al., 2015; Grijalva et al., 2015), rendering existing explanations incomplete. We thus focus on an unexplored and undertheorized phenomenon: how women CEOs' EP is evaluated when they simultaneously display stereotypic (sustainability-oriented) *and* counter-stereotypic (narcissistic) characteristics. With media attention as a critical, social evaluative mechanism, we show how increased visibility recalibrates third parties' evaluative criteria in gendered ways. Specifically, the media

applies stricter criteria to women CEOs' EP than to men's, discounting women's performance and diminishing the positive regard that typically motivates narcissists' prosocial behavior. In doing so, we move beyond trait-based accounts to demonstrate how gendered social evaluation processes shape firm-level EP.

Third, we contribute to narcissism and leadership research by theorizing and testing a gender-contingent, motivational feedback process through which media responses differentially reinforce or discourage narcissistic men and women CEOs over time. Dominant perspectives treat narcissism as largely gender-agnostic, assuming self-enhancing motives operate similarly for *all* individuals in positions of authority (Campbell and Foster, 2007; see Grijalva et al., 2015, for a meta-analytic review). However, such perspectives overlook how leaders' narcissistic motivation is dynamically conditioned by their social context (Morf and Horvath, 2007). Drawing on the shifting standards framework which argues that evaluation standards shift when men and women's roles are being judged (Biernat et al., 1991), we theorize and show how media praise for EP reinforces narcissistic men's EP but discourages narcissistic women's EP. These asymmetrical feedback patterns explain why men and women CEOs with comparable levels of narcissism adapt their EP behavior in divergent ways. In doing so, we enrich emerging work on gender differences in narcissistic leadership (Ingersoll et al., 2019; Pullen and Rhodes, 2008) and reveal how a nominally stable personality trait (Bouzouitina et al., 2021; Ingersoll et al., 2019; Petrenko et al., 2016; Tang et al., 2018) is also situational malleable when embedded within gendered evaluative contexts.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

How CEO Narcissism and Sex Affect Corporate Environmental Performance

Here, we focus on sub-clinical, grandiose narcissism³—more simply referred to as “narcissism” in the CEO and leadership literatures—which is the most prevalent form of narcissism among executives (Cragun et al., 2020). Characterized by a grand sense of self-importance, arrogance, and self-esteem (Campbell et al., 2011; Judge et al., 2006), more narcissistic CEOs engage in more dynamic, grandiose strategic actions for their firms because they seek social praise (Chatterjee and Hambrick, 2011). That is, narcissistic CEOs are highly sensitive to and motivated by praise, which emboldens them to pursue initiatives they believe will generate personal recognition and achievement.

Upper echelons theory (Hambrick and Mason, 1984; Hambrick, 2007) is often used to explain how CEO attributes shape firm outcomes, including EP. While upper echelon’s theory has yielded fruitful research, it “does not necessarily provide an impetus to delve deeper into the underlying mechanisms and processes that drive narcissistic behavior” (Cragun et al., 2020, p. 926). As a result, strategy scholars have started to apply microfoundations perspectives, so-called “behavioral strategy” (Levinthal, 2011; Powell, Lovullo, and Fox, 2011), to better understand the social and psychological dynamics that explain the CEO-corporate strategy link. The microfoundations perspective is likewise rapidly gaining traction as a lens for understanding the link between top executives and sustainability outcomes (e.g., Salaiz et al., 2021). Thus, we similarly ground our theorizing in psychology to understand the precipitating conditions for CEO narcissism and EP.

Specifically, the extended agency model of narcissism (Campbell and Foster, 2007; Morf and Rhodewalt, 2001) focuses on reward-seeking to explain how narcissism shapes leaders’ behavior toward certain strategies and initiatives (Bogart et al., 2004; Kernberg, 1975; Wallace and Baumeister, 2002). Rewards like adulation from others motivate narcissists’ behavior due to

their strong need to uphold a positive self-image (Kernberg, 1975; Wallace and Baumeister, 2002). To achieve this, narcissistic individuals think and act in ways to keep a positive self-image viable while avoiding thoughts and actions that could undermine it. These dynamic self-regulatory processes of constructing, maintaining, defending, and enhancing their desired self-views in transaction with the context (Morf and Horvath, 2007) create a dominant sense of self-esteem (i.e., “narcissistic supply” or “esteem;” Campbell and Foster, 2007; Kernberg, 1975).

Among the various strategies CEOs employ, EP offers numerous opportunities for grandiosity and visibility. This makes EP particularly appealing for narcissists, potentially overcoming EP’s initial unattractiveness due to its longer-term, altruistic focus (i.e., narcissists tend to prefer more immediate, self-serving rewards; Campbell et al., 2005). Essentially, the potential praise from EP can encourage narcissists’ pursuit because it bolsters their positive self-image and narcissistic supply (Petrenko et al., 2016).

Although rarely explicitly theorized, tested, or discussed in the literature on CEOs and narcissism (with the rare exception of Ingersoll et al., 2019, who examined CEO risk-taking), we propose the existing strategy research and its associated processes explain the behavior of narcissistic men—but not women—CEOs. Specifically, the aforementioned gender stereotypes influence how others evaluate CEOs’ EP driven by cognitive processes of social comparison and evaluation. Thus, gender stereotypes are important because they inform the expectations; however, they are insufficient to explain the more complex nature of concurrently having both pre-scripted (sustainability) and pro-scripted (narcissism) traits—the former of which we describe here, and the latter of which we explore further in building up to the next hypothesis.

The Critical Role of Media Bias

Integrating the shifting standards model (Biernat et al., 1991), we theorize that the same level of EP garners less positive attention (i.e., praise) for women CEOs from whom EP is expected than for men CEOs for whom it exceeds lower initial EP expectations (Mui and Hill, 2023), i.e. the CEO's anticipatory beliefs about praise and visibility they will receive for acting on EP. Indeed, gender is a salient social category, which means it is a prominent factor evaluators notice and encode about others (Martin and Slepian, 2021). This also means that targets are compared to expectations within the category of sex, such that women's performance is compared to the expectations of other women's performance. Because women are more congruent with—and thus stereotype-consistent with (Lee and Huang, 2018; Mui and Hill, 2023; Shea and Hawn, 2019)—EP, then these shifting standards of social comparison mean that the same level of EP generated by a man versus a woman will exhibit differential media reactions, i.e. the evaluative feedback CEOs receive via media coverage for their actions. As such, men CEOs who pursue EP will be seen by the media as exceeding expectations, whereas the same EP actions from women CEOs will be seen as underwhelming. To illustrate, if one reads about a “high-performing CEO in the area of EP,” fluctuating, subjective benchmarks change what qualifies as “high-performing” depending on the target CEO's sex, such that the bar to qualify as “high-performing” is higher for women than for men. In contrast, because men are not expected to be warm and communal (Hentschel et al., 2017), they are not penalized for communal behavior. Instead, men are often rewarded for communal behavior (e.g., being a “family man” or pursuing corporate social responsibility [CSR]; Gloor et al., 2026; Greenberg, 2015; Hekman et al., 2017)—especially when they have higher status (Glauber, 2008; Gloor et al., forthcoming; Hodges and Budig, 2010) as is the case for leaders and CEOs.

The media plays a crucial role in our theorizing because, as less invested and more distal stakeholders, it often evaluates women (vs. men) CEOs' actions more stereotypically and harshly (Joshi et al., 2024). The shifting standards model also conceptually supports our focus on the media, because dynamic benchmarks for social evaluations are more evident in subjective (vs. objective) assessments (Biernat et al., 1991; Biernat and Vescio, 2002); and, critically, the media is also often described as having a subjective and interpretive approach (Joshi et al., 2024). Thus, while other types of positive attention may still matter, the media is a far-reaching communication source that impacts a wide range of stakeholders and is of key importance to CEOs, often offering tangible, positive rewards (e.g., Kang and Kim, 2017).

How CEO Sex and Narcissism Shape EP

Because narcissists are profoundly motivated by praise from others (Campbell and Foster, 2007), we further theorize that these expectations of media attention decrease the motivation for and enactment of EP for narcissistic women CEOs while increasing EP for narcissistic men CEOs. If there is no (or simply less) praise to be gained from certain strategies (Kernberg, 1975; Paulhus, 2001; Wallace and Baumeister, 2002), then more narcissistic leaders are less likely to pursue them (Morf and Rhodewalt, 2001). Given time constraints, it would be rational for more narcissistic leaders to devote their time to other strategies that would yield more praise (or more praise with less effort). Hence, we theorize that more narcissistic women CEOs do not expect as much media adulation from EP as narcissistic men CEOs, and therefore narcissistic women CEOs will tend to avoid pursuing additional EP.

Taken together, these dynamics help us to understand how CEO sex and narcissism jointly affect firm EP, highlighting the unique pathways for narcissistic men and women CEOs that have been overlooked by research to date. Existing research on CEO narcissism and

sustainability outcomes (including EP) implicitly—and, as we argue here, incorrectly—implies that their theorizing applies to *all* CEOs. Consistent with prior research on sustainability outcomes, we predict that increasing narcissism improves EP for men CEOs (e.g., Al-Shammari et al., 2019; Bouzouitina et al., 2021; Gupta et al., 2019; Petrenko et al., 2016; Tang et al., 2018), but not for women CEOs. The potential praise gleaned from EP can counteract aspects of narcissism that would otherwise increase a CEO’s focus on the self and strategies prioritizing self-serving rewards (Buchholz et al., 2020), potentially at the expense of other-regarding strategies like sustainability (see Cragun et al., 2020, for a review). Accordingly, more narcissistic women CEOs are less likely to engage in more EP. In comparison, less narcissistic women CEOs are likely to excel in EP, because EP is congruent with feminine stereotypes and socialization, showing a “female sustainability advantage” (Byron and Post, 2016; Glass et al., 2016; Gloor et al., 2022; Mui and Hill, 2023); they are also less attuned to—and less motivated by—the potential praise gleaned from it. By integrating psychological theory with strategy research, we propose new pathways for narcissistic women CEOs. Specifically:

Hypothesis 1: CEO sex moderates the relation between CEO narcissism and corporate environmental performance (EP) such that the CEO narcissism-EP link is less positive (or more attenuated) when firms are led by women (vs. men) CEOs.

The Polarizing Role of Positive EP Media Attention

Drawing on the extended agency model of narcissism (Campbell and Foster, 2007; Morf and Rhodewalt, 2001), we enhance our theorizing by contextualizing it with insights about CEO sex and gender stereotypes (e.g., Eagly and Karau, 2002; Hall et al., 2019; Mui and Hill, 2023; Triana et al., 2024), because the extended agency model does not articulate gender differences in narcissists’ internal states, structures, or expressions (Campbell and Foster, 2007).

Focusing on a key aspect of narcissists' dynamic social environment to maintain positive self-views (Morf and Horvath, 2007), we identify media attention as a crucial factor in CEOs' social environments. While our first hypothesis reflects how narcissistic men and women CEOs differ in their expectations of attention for EP, our second hypothesis captures how actual positive media reactions amplify or dampen these effects. In general, the media tends to credit firm actions and outcomes to CEOs, reinforcing narcissists' overconfidence and "celebrity" status by excessively praising these individuals (Hayward et al., 2004). More specifically, regarding gender stereotypes, we theorize that the media attention CEOs receive for their EP alters the expression of CEO narcissism (i.e., reward-seeking) and behavior (i.e., EP, assuming it garners rewards) differently for men and women. Having previously described the sex-based patterns of praise for EP, we focus more squarely on positive media attention as a specific form of praise; we also outline two reasons why the EP of narcissistic men and women CEOs becomes more polarized under similar positive media attention.

First, we propose that women CEOs who receive media attention for EP also garner media attention for other, undesirable reasons. Because sustainability is considered a "feminine" (warm and communal) topic, it highlights women's incongruity in the CEO role (see Triana et al., 2024, for a review). To illustrate, Marissa Mayer and Mary Barra faced intense scrutiny during their tenures as CEOs for ostensibly "feminine" topics (e.g., telecommuting and parental leave; Alter, 2014; Walters, 2015). Senior women executives also show an acute awareness of this gendered media attention (Dwivedi et al., 2021) and how undesirable it is (Weisul, 2015). And critically, narcissistic women may particularly prefer to suppress feminine aspects of their identity as an effort to fit in, compete, and "win" (Pullen and Rhodes, 2008). A closer inspection of media coverage of the narcissistic women in our data further supports this idea, as feminine

topics are clearly and prominently referenced in articles discussing their professional duties (e.g., Bryant, 2015; Peltz, 2014), further highlighting the incongruence with their roles as CEOs.

Second, expanding on the idea that narcissistic women draw more undesirable reactions as they gain more visibility, we propose that narcissistic women are especially aware of and affected by such media scrutiny. Women who have made it to the top have effectively navigated the “double bind” of others’ perceptions and evaluations (see Glass and Cook, 2016, for a review), demonstrating their keen awareness of how others perceive them and their ability to manage those impressions (Trzebiatowski et al., 2023). But this is quite challenging to accomplish because narcissistic women are more distinct and visible (De Hoogh et al., 2015; Green et al., 2021; van Gerven et al., 2022), making them more likely to be more strongly attended to and easily remembered by evaluators (including the media). Even in seemingly positive media articles about their EP, images or quotes from these leaders still reveal their narcissism (e.g., via their language; Holtzman et al., 2010; Vazire et al., 2008), thus highlighting their incongruity.

Accordingly, it follows that more narcissistic women CEOs are also unlikely to interpret positive attention from EP as uniformly positive as men CEOs do (see Petrenko et al., 2016). As previously described, narcissists are hypervigilant to dynamics that potentially undermine their positive self-images. In the case of more narcissistic women leaders, the desired positive self-image is preferably dominant and masculine—*not* sustainable and feminine. Because “feminine” EP and irrelevant references to their “feminine” roles (e.g., mothers) contradict the desired, dominant, and agentic self-image of narcissistic women (Campbell et al., 2002; Campbell and Foster, 2007), we theorize that they pursue less EP, because it increases their visibility for undesirable reasons as well as increasing their incongruity with their role as CEO. Prior research

supports this idea, showing that endorsements of women CEOs that (also) highlight stereotype-violating achievements negatively impact women CEOs (Dwivedi et al., 2021; Lee and James, 2007). Consequently, narcissistic women react more strongly to the qualitatively different media reactions they receive compared to non-narcissistic women and men—even if it seems quantitatively similar—thus undermining their efforts toward (and also performing less) EP.

Taken together, we theorize that positive media attention exacerbates the joint effect of sex and narcissism on EP for CEOs. As the media spotlight increases, more narcissistic women CEOs also face greater scrutiny and accentuated incongruity. However, because less narcissistic women CEOs are still socialized by the aforementioned gender stereotypes, even though they are less motivated by EP-related media attention, they are still likely to pursue EP. Moreover, EP efforts by less narcissistic CEOs may also be more genuine or less superficial (vs. more narcissistic CEOs) and thus more likely to generate authentically positive media attention as well as potential financial gains for the firm (Petrenko et al., 2016), which would also motivate less narcissistic women CEOs for more EP. In contrast, less narcissistic men are not socialized to pursue EP, nor are they particularly motivated by EP-related media attention; thus, they are less likely to pursue EP. Finally, as previously argued, the lack of intrinsic interest in EP by more narcissistic men may be counteracted by EP-related positive media attention (Petrenko et al., 2016), thereby increasing their EP. As such, we propose:

Hypothesis 2: There is a three-way interaction between CEO narcissism, CEO sex, and positive attention on EP, such that with more positive attention, the narcissism-EP link becomes more positive for men CEOs but more negative for women CEOs.

Overview of Studies

We conducted six studies in total (two main studies: Study 1 and 2, three pilot studies of our new measure in the Appendix, and one post-hoc study of an important chain in our

theorizing) to test our theoretical model (see Figure 1). We provide our materials, data (when possible), and code on the Open Science Framework (OSF).⁴ First, we examined the effects of CEO narcissism and sex on EP, and the moderator, media attention, in 8,773 firm-year observations from 1,392 firms (Study 1). Then, we causally replicated these findings with a between-subjects vignette experiment with 504 strategic leaders (Study 2), manipulating our media attention moderator. We also describe a post-hoc study we conducted with a sample of 170 media professionals and stakeholders to test a key aspect of our theorizing, i.e., that high-EP men [vs. women] CEOs generate more positive reactions from the media; we explain and empirically support this idea (in Appendix 2).

INSERT FIGURE 1 ABOUT HERE

NEW MEASURE OF CEO NARCISSISM

To make our proposed theoretical contributions, we also make a methodological contribution by introducing a new measure of CEO narcissism based on personality psychology (Campbell et al., 2011; Paulhus, 2001; for more details, see Appendix 0).⁵ Because personality psychologists have long referred to narcissists as “agentic extraverts” (Crowe et al., 2019, p. 1163) and “disagreeable extraverts” (e.g., Paulhus, 2001), we measure narcissism with two of the Big Five personality measures: agreeableness (reverse-coded) and extraversion, which we multiply to create a composite measure of narcissism. Using CEO Big Five traits developed via Machine Learning open language-based techniques by Harrison and colleagues (2019), our new CEO narcissism measure advances upon existing strategy measures that lack female data (e.g., Gupta et al., 2019; Petrenko et al., 2016; Tang et al., 2018) and/or are biased toward men. For example, 50% of the most common measure by Chatterjee and Hambrick (2007, 2011) is based on gender-biased CEO pay data (Cragun et al., 2020; Lewellyn and Muller-Kahle, 2021; see also

Hill et al. (2022), implying the results are at least mixed if pay data is an unbiased indicator of narcissism for male and female CEOs. Indeed, personality research has long shown the Big Five measures are equally valid to assess men's and women's personality (Gosling et al., 2003).

In a 6-step process following Lambert and Newman's (2023) three basic steps of construct development and validation (construct definition, matching operationalization, and empirical evidence of validity), we defined and validated our new, Big Five-based measure of CEO narcissism. We analyzed samples of experts ($N = 20$) and leaders ($N_{total} = 577$) to qualitatively and quantitatively assess and compare our measure to existing measures of narcissism (e.g., NPI-16), the related construct of hubris, and other facets of personality (e.g., neuroticism, openness). In doing so, we tested our measure's convergent and divergent validity (see Appendix 1A-1B); we also compared our new measure to three widely used, existing measures of CEO narcissism.

Results from our pilot studies showed a moderate, positive correlation between our new narcissism measure and an existing, validated narcissism measure (i.e., NPI-16; Ames et al., 2006; $r = .40, p < .001$ [$n = 277$], $r = .41, p < .001$ [$N = 300$])—echoing previous validation studies of narcissism measures; Petrenko et al., 2016) and exceeding correlations between the NPI-16 and other narcissism measures (e.g., CEO signature size, which ranged from $r = .23$ to $.38$; Ham et al., 2018). The correlation between our new measure and the NPI-16 was also larger than with the highly related construct of hubris ($r = .35, p < .001$ [$n = 277$], $r = .36, p < .001$ [$N = 300$]). Additional results from Study 2 showed that our measure did not strongly correlate with Chatterjee and Hambrick's (2011) measure ($r = -.05, p = .015$) but was positively and moderately correlated with Petrenko et al.'s (2016) measure ($r = .52, p < .001$)—an advancement on Chatterjee and Hambrick's (2011) measure. Furthermore, only CEO (dis)agreeableness and extraversion are theoretically relevant to narcissism *and* highly correlated with our narcissism

measure ($r_s = 0.53$ and 0.38 , $p_s < .001$, respectively); the other CEO Big Five traits of neuroticism, openness, and conscientiousness showed weakly positive or weakly negative correlations with our new narcissism measure ($r_s = -.17$ to $.13$, $p_s < .001$). Results from the expert validation study showed general agreement that our measure is a valid indicator of narcissism for men *and* women CEOs ($M = 3.5$, $SE = .24$; range: 1.2 to 5); most (80.0%) of the experts also agreed that our measure is an improvement on existing measures. Finally, we conducted a preregistered pilot study to address expert concerns raised in previous pilot study and to compare our measure with a new LinkedIn-based measure of CEO narcissism by Junge et al. (2024), which was published while we were developing this research. These analyses almost exactly replicated the previously mentioned pilot study (see Appendix 1A) while also showing stronger evidence of divergent validity. However, a proxy we created for the new measure by Junge et al. was not correlated with our new measure ($r = -.05$, $p = .534$), nor with a validated measure of narcissism (i.e., NPI-16; $r = -.12$, $p = .120$; see Appendix 1B). These analyses show additional evidence of the validity of our measure as an appropriate indicator of leader narcissism.

Taken together, these results suggest our measure is an adequate proxy for narcissism. Notably, our correlations also exceeded correlations of previous strategic management advancements on measures of narcissism (i.e., Petrenko et al., [2016] videometric vs. Chatterjee and Hambrick [2011] proxy measure [$r = .40$, $p < .001$]; Petrenko et al., 2016: 269; see Appendix 1A). By developing a new measure of CEO narcissism that is equally valid for men and women CEOs and based on a measure of CEO personality (rather than more distal proxies which are likely confounded by other variables, not directly under CEO direct influence such as signature size, LinkedIn profiles, or pay, and/or poor predictors of firm performance outcomes;

Harms et al., 2025), we also answer calls for better CEO narcissism measures that do not rely on distant proxies and use more modern, sophisticated machine learning methods (e.g., see Cragun et al., 2020, p. 916; see also our overview of existing measures of CEO narcissism, their operationalization, validity, strengths, and limitations, in Table 1A).

STUDY 1 (ARCHIVAL PANEL)

We developed and validated our new measure of CEO narcissism in a 6-step process (see Appendix 1-2 and Table 2A). Now, we apply our new, Big Five-based measure to validate the interaction of CEO sex, narcissism, and positive media attention on EP.

Sample

We collected data on S&P 1500 firms from various archival databases commonly used in strategy research. We started with the BoardEx database to capture CEO-related data (e.g., name, sex, age, tenure, education, etc.). We then added the CEO narcissism data based on the Big Five (see below for more details). We matched the Execucomp data with BoardEx and the CEO Big Five and checked for discrepancies. We merged data on corporate environmental activities using the MSCI/KLD database, a comprehensive data source widely used in prior sustainability research (e.g., Chiu and Sharfman, 2011). We added additional firm-level data (e.g., financial performance, size) from Compustat. Our timeframe starts in 2001 (the first year BoardEx data is available) and ends in 2015 (the last year with complete sustainability data from MSCI/KLD) at manuscript preparation; this range aligns with recent research published on CEO narcissism (e.g., ending in fiscal year 2015; Tuggle et al., 2024) and on women CEOs (e.g., 2001 to 2018; Mui and Hill, 2023). After accounting for missing data, our sample had an unbalanced panel of 8,773 firm-year observations from 1,392 firms (1,778 CEOs in total: 65 unique women CEOs and 1,713 unique men CEOs).

Given the low base rate (3.8%) of women CEOs among S&P 1500 firms, we employed Coarsened Exact Matching (CEM) to create a matched sample by CEO sex to reduce potential bias in the analysis (Zalata et al., 2019). CEM has been shown to effectively achieve covariate balance while reducing potential confounding in causal inference (Iacus et al., 2011, 2017). For the matching criteria, we included firm size (i.e., the natural logarithm of total employees) because larger firms are more visible and garner more attention and legitimacy from sustainability (Chiu and Sharfman, 2011) and have more resources to implement sustainability. We also included firm performance (ROA) and sales growth (change in sales over the previous year) because women leaders are more likely to be appointed to top positions when firms are in (financial) crisis (i.e., the “glass cliff;” Reinwald et al., 2022). We included women’s board representation, as women CEOs are more likely to be appointed in firms with a critical mass of women directors (You, 2019). Finally, we also included the standard deviation of board directors’ age because age and especially age cohort effects are evident in pro-environmental behavior (e.g., Gifford and Nilsson, 2014). Our matching was effective.⁶ Thus, we report the results based on the CEM-matched sample analysis: an unbalanced panel of 1,493 firm-year observations from 562 unique firms (643 CEOs in total: 61 unique women CEOs and 582 unique men CEOs, raising our rate of women CEOs to 10.5% reflecting 61 industries (i.e., 2-digit SIC).

Measures

Environmental performance. Following prior research (e.g., DesJardine et al., 2019; Walls et al., 2012), we measured EP using the environmental ratings from KLD (now called MSCI ESG), which cover a wide range of domains such as green products and services, pollution prevention, biodiversity, recycling, and clean energy. These indicators are coded by MSCI ESG Research Analysts based on company disclosures and external sources, including

government databases, media, Non-Governmental Organizations (NGOs), and other stakeholder materials. Each environmental indicator was coded using a binary scheme: 1 if the firm meets the assessment criteria for that strength, 0 if it does not. We first constructed a raw EP measure by summing the environmental strength indicator for each firm-year. The raw EP score ranged from 0 to 6, with higher values reflecting more environmental strengths. Because KLD/MSCI adopted an industry-based key-issue model in 2010 (i.e., focusing on the ESG issues most relevant to a firm's industry), the upper bound of the raw score may vary across firm-years. To account for year-to-year shifts in KLD/MSCI coverage, we standardized the summed score within year across the study period (Ioannou and Serafeim, 2015). Higher values on the standardized EP measure indicate stronger environmental performance relative to other firms in the same year.

While the KLD environmental category includes both strengths and concerns, we analyze *only* KLD strengths for three reasons. First, leaders of companies who care about stakeholder attention actively manage such ratings as part of their overall stakeholder outreach and positive reputation (Lee et al., 2013; Lewis and Carlos, 2023). Second, more narcissistic CEOs seek positive attention and praise from stakeholders (Kernberg, 1975; Wallace and Baumeister, 2002), and KLD strengths ratings not only reflect the level of attention firms pay to primary stakeholders, but also how firms shape their strategies accordingly (e.g., Kacperczyk, 2009). Third, KLD strengths and concerns ratings are theoretically and empirically distinct constructs that can confound when combined or factored (Kacperczyk, 2009; Mattingly and Berman, 2006; Strike et al., 2006). Prior research shows that KLD environmental strengths (but not KLD environmental concerns) ratings predict future EP (Walls et al., 2011), supporting our focus on KLD strengths; however, our findings remain highly consistent even after controlling for KLD concern ratings. Finally, as alternate EP measures to test robustness, we also used the rating

(score) from the Carbon Disclosure Project (CDP) and ESG scores from Reuters' Refinitiv data (ASSET4) and found similar patterns of results (more details below).

CEO sex. We coded man (0) or woman (1) using the Execucomp database.

CEO narcissism. Pilot Studies 1-3 provided initial evidence of the validity of our Big Five-based disagreeable extraversion narcissism measure (see Appendix 1A-1B and Table 2A). We also performed Latent Profile Analysis (LPA) based on disagreeableness and extraversion, which further supported the validity of our measure.⁷ Thus, with permission from Harrison and colleagues (2019), we used their validated Big Five personality data from CEOs collected through text and machine learning (ML) techniques. Harrison and colleagues used two datasets: spoken text from 100,000+ transcripts of earnings calls from LexisNexis' Full Disclosure Wire from 3,573 CEOs of S&P 1500 firms, which they compared to existing, psychometrically validated CEO personality information from Hill et al. (2019), who used videometric data and a 50-item IPIP. Through a large-scale, open-language, 3-step method conducted with ML (i.e., text vectorization, training and model selection, then trait prediction) in R, Harrison et al. (2019) produced reliable, psychometrically valid measures of CEO personality in the form of a single, 7-point estimate for each Big Five personality trait.⁸ We used 2 of these 5 traits to capture narcissism as "disagreeable extraverts" in our panel data (i.e., reverse-coded agreeableness multiplied by extraversion).

Attention. To measure attention related to a firm's environmental practices, we employed the event sentiment score (ESS) ratings from RavenPack News Analytics, which has been widely used in prior research to examine the tone of firm-specific news (e.g., Dang et al., 2015; Gao et al., 2018; Yang et al., 2020). RavenPack News Analytics uses algorithms that were "developed and evaluated by effectively combining traditional language analysis, financial expert consensus,

and market response methodologies” (Dang et al., 2015, p. 83) from major business media outlets (e.g., *Wall Street Journal*). ESS ratings (i.e., including environment, social, and governance) indicate the strength and the direction (i.e., positive, neutral, or negative) of news sentiment, ranging from zero (most negative) to 100 (most positive); 50 is neutral. Here, we focused on the environment category containing news sentiments towards a firm’s practices related to airborne emissions, biodiversity and land usage, pollution, environmental compliance, etc. We followed prior research (e.g., Gao et al., 2018) and rescaled the ESS ratings (subtracting 50 from the raw score and dividing by 50) so that a positive (negative) score represents positive (negative) attention (range: -1 to 1). We calculated the mean sentiment score for firms with multiple environmental activities each year.

Control variables. We included several control variables based on prior research (e.g., Lewis et al., 2014; McWilliams and Siegel, 2000; Walls and Berrone, 2017). At the CEO level, we controlled for CEO age, position tenure, and MBA degree (=1 if yes). We also controlled for CEO duality (= 1 if a CEO also served as the board chair), as research shows that narcissistic CEOs who also serve as board chair are more likely to allocate more resources to risky strategies (Tuggle et al., 2024). Following Walls and Hoffman (2013), we also controlled for CEO environmental expertise, based on CEO’s previous job roles (years), board sub-committee appointments (years), awards and honors (number), and activities (number) on environmental topics; we aggregated these to gain a total score of “environmental expertise.” At the firm level, we controlled for financial performance (ROA), size (natural log of total employees), R&D intensity (R&D expenses/sales), advertising intensity (advertising expenses/ sales), leverage (debt/assets), capital expenditure, and sales growth (change in sales over the previous year). At the board level, we controlled for women’s board representation (share of women directors),

board independence (the ratio of independent directors), and whether the board had an environmental committee (= 1 if yes). Finally, we controlled for shareholder resolutions using the EthVest database (= 1 if the firm was targeted by shareholder activism in the past two years); the models also included year and industry-fixed effects and an endogeneity control.

Endogeneity and Model Estimations

Because more narcissistic CEOs may select into specific firms, we followed prior work (Petrenko et al., 2016; Tang et al., 2018) to address this endogeneity threat. First, we regressed CEO narcissism against predictors measured in the preceding year ($t-1$), including CEO age, firm performance (ROA), firm size (log of total employees), and board independence. We also included several power-related factors (Finkelstein, 1992), such as duality, firm experience (i.e., position tenure), and social connections/prestige (i.e., the number of listed boards a CEO serves), which might enhance narcissistic tendencies. We included firm sales growth as a positive trend in firm sales may increase CEO narcissistic propensity, and industry-fixed effects, as more narcissistic CEOs may choose to work in certain industries. We then extracted the predicted CEO narcissism value and added it as an endogeneity control in the main models predicting EP.

To further rule out the possibility of omitted variable bias, we conducted the robustness of inference to replacement (RIR) test, because our study focuses on interaction effects (Busenbark et al., 2022). The RIR test calculates the average marginal effect to determine the percentage bias required to overturn a finding. The RIR test result (Stata version 17, procedure “*konfound*”) shows at least 34.6% of the observations would have to be due to bias to overturn the 2-way interaction between CEO sex and narcissism (H1). To invalidate the inference of the 3-way interaction (H2), at least 25.4% of the observations would have to be replaced with an effect of 0. After checking for omitted variable bias, we employed a random-effects estimator to

test our hypotheses, as our key predictor, CEO sex, is time-invariant. We applied robust *SEs* clustered by firms to account for serial correlation and heteroskedasticity in all models.

Results

CEO sex and narcissism correlate at $-.08$, suggesting these are distinct constructs (see Table 1). If ‘high narcissism’ is $+1SD$ above the mean, then 8.5% of women CEOs and 13.3% of men CEOs were highly narcissistic, aligning with statistics reported in narcissism meta-analyses (e.g., Grijalva et al., 2015).

INSERT TABLE 1 ABOUT HERE

See Table 2 for the regression results based on the matched sample. Model 1 includes only control variables. Model 2 shows a joint effect of CEO sex and narcissism ($b = -0.16$, $SE = 0.05$, $p = .003$). Simple slope tests show that the impact of CEO narcissism was more negative for women CEOs (*simple slope* $= -0.17$, $SE = 0.05$, $p < .001$) than for men CEOs (*simple slope* $= -0.02$, $SE = 0.02$, $p = .316$; see Figure 2). The slope for women (vs. men) CEOs was more sensitive and steeper with increasing CEO narcissism: for firms led by women, EP was lower when CEOs were more narcissistic ($+1SD$) compared to when they were less narcissistic ($-1SD$), decreasing by 106%, from 1.09 to $-.07$, moving from less ($-1SD$) to more ($+1SD$) CEO narcissism. Conversely, for firms led by men, EP increased by 38.7%, from 0.31 to 0.43, moving from less ($-1SD$) to more ($+1SD$) CEO narcissism. These results suggest that the negative effect of CEO narcissism on EP is more pronounced for women (vs. men) CEOs, supporting H1.

We then tested narcissistic men and women CEOs’ EP, moderated by the positive attention they receive for it. For these analyses, the sample size was reduced to 887 because the analysis was based on firms with ESS scores for their environmental activities in the focal year. Results in Table 3 show a strong interaction between CEO narcissism, media attention, and CEO

sex (Model 3: $b = -0.80$, $SE = 0.30$, $p = .008$): positive attention polarized the narcissism-EP link for women (*simple slope* = -0.73 , $SE = 0.24$, $p = .002$) and men CEOs (*simple slope* = 0.20 , $SE = 0.14$, $p = .179$; contrast slope difference = 0.93 , $SE = 0.30$, $p = .002$; see Figure 2): with more positive attention, EP for firms led by women CEOs decreased by 88%, from 1.68 to 0.2, as CEO narcissism changed from less ($-1SD$) to more ($+1SD$) narcissistic. In comparison, with more positive attention, EP for firms led by men CEOs increased by 4.4%, from 0.45 to 0.47, as CEO narcissism changed from less ($-1SD$) to more ($+1SD$) narcissistic. These results support H2.

INSERT TABLES 2 AND 3 ABOUT HERE

INSERT FIGURE 2 ABOUT HERE

Robustness Checks

Because the merger of MSCI and KLD in 2010 led to several changes in the rating schemes, we checked the robustness of our findings using two alternative timeframes (2001~2009 and 2001~2010); the results remain highly consistent (see Appendix 4). We also removed firms operating in the finance sector (SIC codes = 6000~6999), because strategic leaders from these firms may be subject to different media attention for their firm's EP due to the nature of the industry. These results remain robust (see Appendix 5).

Supplemental Analyses

We conducted five supplemental analyses. First, we used the CDP rating (score) as an alternative outcome measure for EP. CDP's scoring methodology (A-E) assesses a firm's environmental impacts across multiple areas, including climate change, forests, and water security. Firms that achieve an A grade are "among the most transparent when it comes to disclosure and performance on climate change, deforestation or water security" (CDP, 2024; p. 1). Following Fabrizio and Kim (2019), we coded on a scale from 1 to 5 (A = 5). Results again

show firm EP decline with more narcissistic women (vs. men) CEOs ($b = -1.80$, $SE = 0.79$, $p = .023$; see Appendix 6). Second, we tested our models using Refinitiv ESG scores (ASSET4) as an alternative data source for EP and again found consistent results ($b = -8.71$, $SE = 4.42$, $p = .049$), particularly for environmental innovation performance (see Appendix 7). This suggests our results are robust across various EP-related outcomes. Third, we included the other three CEO personality scores as controls in the model, and the results remained consistent ($b = -0.79$, $SE = 0.32$, $p = .014$; see Appendix 8). Fourth, we examined whether not only positive but also overall media attention matters to narcissistic CEOs. However, the results suggest no meaningful effect ($b = -1.23$, $SE = 0.91$, $p = .177$), empirically supporting our theorizing and our focus on *positive* media attention (see Appendix 9).

Finally, we analyzed our results alongside previously used CEO narcissism measures in strategy research to ensure transparency and comprehensiveness. Results based on Chatterjee and Hambrick's (2007, 2011) measure showed no meaningful interaction of CEO sex, narcissism, and media attention on EP ($b = 4.92$, $SE = 9.82$, $p = .617$). However, consistent with our findings, results based on Petrenko et al.'s (2016) measure showed a strong interaction ($b = -283.54$, $SE = 124.27$, $p = .023$); however, because we lost many observations here, we urge caution in interpretation (see Appendix 10). Our findings aligned more closely with Petrenko et al.'s (2016) measure but diverged from Chatterjee and Hambrick's (2007, 2011) approach. This divergence is not surprising given the differences in what these measures capture. Both our Big Five-based "disagreeable extraversion" measure and Petrenko's measure reflect narcissists' esteem- and attention-seeking motivations, which are especially relevant for theorizing about media attention and environmental performance. In contrast, Chatterjee and Hambrick's widely used measure relies in part on CEO compensation, which is not only a distal proxy for narcissism

but also systematically embeds gender bias by underestimating women CEOs' narcissism. It therefore may capture more of a power or status orientation than esteem-seeking, which explains why our gendered theorizing yields weaker or inconsistent patterns when using that proxy.

STUDY 2 (REPLICATION EXPERIMENT)

After testing our model in the field (Study 1), we replicate and extend these results in an experiment. In doing so, we can use the method to “extend established theories under certain conditions” (Bolinger et al., 2022; p. 101); experiments also offer empirical advantages, such as ruling out alternative explanations and verifying the causal direction of influence. Finally, the original data collection also facilitates our use of an existing, validated measure of strategic leaders' narcissistic personality, because even if our new measure of CEO narcissism improves on existing measures of CEO narcissism, “psychological scale-based measures are most ideal (to measure narcissism), due to their validity and general reliability” (Cragun et al., 2020, p. 916).

Sample and Procedure

We recruited a gender-balanced sample of 550 employed American adults who were pre-screened to have leadership responsibility for a study of employment and personality. In total, 504 participants (53.2% men, 46.8% women) finished the survey with complete and usable data (7 of the initial 511 had missing data on their strategic influence in their company [i.e., we screened out participants who did not have at least “a little” self-reported “power or decision-making influence” over “strategy decisions in [their] company”]). Participants reported an average of 3.04 ($SD = .87$) or “some” control over the strategy of their organization (range: “a little” [31.0%] to “total” [5.0%]). These participants reported having an average of 10.6 years ($SD = 11.2$) of leadership experience with an average of 8.8 ($SD = 12.0$) direct reports. The

average firm size was 2,486 employees ($SD = 3,580$). Participants worked in various industries (e.g., IT, consulting, finance, and manufacturing).

Participants completed demographics, employment information, and a validated, multiple-item measure of narcissism, given its empirical advantages (e.g., reliability). Participants then imagined they were engaged in a strategy exercise. We asked them to prioritize initiatives for the next year as they would in their role as a leader⁹ in their firm—a simpler version of the bounded rationality game Hambrick (2007) recommended to examine strategic decision-making. Thus, participants were “proxies for firm actors or decision-makers” (Bolinger et al., 2022, p. 99), “making long-term strategic plans and resource allocations” for sustainability (p. 103).

Participants were randomly assigned to 1 of 2 conditions (i.e., a control, which was a “treatment as usual” condition vs. our experimental manipulation or media attention treatment) in a between-subjects experiment. Participants were told, “your board or corporate communications team has just informed you that some initiatives up for consideration...may generate more attention than others (e.g., from the media)...” In the control condition, we did not mention specific initiatives so participants could imagine the initiatives they believed would generate more positive media attention. For the experimental condition, we mentioned “environmental sustainability” initiatives. We focus on positive attention, but we manipulated it subtly as “generating gains” to reduce participant suspicion and potential demand effects. This is also a conservative test, because sustainability has been shown to generate more media attention (Petrenko et al., 2016; Sander et al., 2021), which may be intuitive if not concretely known to participants; our results suggest this was the case, as participants in the control condition noted

this often (48.4%)—although significantly more participants (70.8%) noted this in the treatment condition than in the control condition—which also suggests our manipulation was successful.

Measures

Narcissism. We assessed leader narcissism with a validated measure of narcissism from personality psychology as in Pilot Study 2 (i.e., the NPI; $\alpha = .79$, $\Omega = .78$).

Environmental performance. Participants allocated 100 total points to 12 initiatives, including 4 environmental strengths initiatives from the KLD—our EP measure in Study 1—(i.e., “reducing carbon emissions & footprint,” “clean tech & renewable energy,” “environmental problems (e.g., water stress, biodiversity),” and “toxic emissions & waste,”); we also included additional, filler initiatives (e.g., unrelated but typical corporate initiatives such as “marketing and advertising”). Adapted from previous research (e.g., Crilly et al., 2016), participants could allocate points to the initiatives (0 to 100), with more points indicating higher priority.

Leader sex. Leaders self-identified as a man (0) or a woman (1).

Manipulation check. At the end of the survey, more participants in the attention (vs. control) condition reported EP received the most (positive) attention ($M_{\text{attn}} = 0.71$, $SE = 0.03$, vs. $M_{\text{control}} = 0.48$, $SE = 0.03$; $\chi^2[1, N = 504] = 27.19$, $p < .001$), indicating a successful manipulation.

Results

We used Generalized SEM (GSEM) path analyses in Stata (version 18.0). For model fit statistics, see Appendix 11. The correlation between leader sex and narcissism ($r = .076$, $p = .089$, Table 4) was similar in magnitude and also statistically non-significant, as in Study 1.

The 2-way interaction of leader sex and narcissism on EP was non-significant ($b = -1.08$, $SE_{\text{robust}} = 1.23$, $p = .380$), failing to support H1. However, this null effect was qualified by a

marginally significant interaction between leader sex, narcissism, and positive attention ($b = -4.52$, $SE_{robust} = 2.49$, $p = .070$; see Table 5, Figure 3); of note, this effect would be considered significant if conducted as a one-tailed test, as is common for directional hypotheses and replications ($b = -4.52$, $SE_{robust} = 2.49$, $p = .035$; see Hales, 2024). The effect of leader narcissism on EP did not differ from zero for men leaders in the control condition (*simple slope* = 0.17, $SE_{robust} = 1.06$, $p = .873$) nor in the positive attention condition (*simple slope* = 1.43, $SE_{robust} = 1.18$, $p = .224$). The effect of leader narcissism on EP also did not differ from zero for women leaders in the control condition (*simple slope* = 1.05, $SE_{robust} = 1.05$, $p = .319$) nor in the positive attention condition (*simple slope* = -2.20, $SE_{robust} = 1.60$, $p = .169$). Although no slopes differed from zero, the slopes followed the hypothesized patterns, replicating Study 1; and the effect of leader narcissism on EP differed between men and women when EP received positive attention with marginal significance ($\chi^2[1, N = 504] = 3.29$, $p = .0697$), showing some support for H2.

INSERT TABLES 4 AND 5 ABOUT HERE

INSERT FIGURE 3 ABOUT HERE

Post-Hoc Test

Because we theorized the media differentially responds to narcissistic men and women's EP, but this idea remains untested to our knowledge, we designed an original, between-subjects experiment to test it. A sample of 180 media professionals and stakeholders (e.g., stockholders of publicly traded firms; 170 with complete, usable data: 52.4% female, 47.1% male, .6% other gender) recruited from Western Europe (48.2%) and English-speaking countries (e.g., United States, South Africa, and Australia; 51.8%) viewed ostensible media articles describing a male or a female CEO who was high-performing on EP.¹⁰ Then, they rated our 3-item measure of shifting standards if they were "pleasantly surprised," if their "expectations [were] exceeded,"

and if they were “impressed” by the leader and their behavior in the article (1 = “Strongly Disagree” to 6 = “Strongly Agree”; $\alpha = .81$, $\Omega = .82$).

Results showed more positive reactions to high-performing men ($M = 4.12$, $SD = .11$) than women ($M = 3.82$, $SD = .11$; $d = .29$) CEOs, $b = -0.32$, $SE = .15$, $p = .032$ (see Figure 2A). Robustness checks with and without covariates, with and without sample exclusions, with and without nesting for countries generally showed that our results were robust to various model specifications. These results show causal evidence of media professionals’ gendered reactions to CEO EP performance, empirically supporting a critical chain in our theorizing (see Appendix 2).

DISCUSSION

For a more comprehensive and accurate understanding of how CEOs shape EP, we built and tested a model integrating tenets of psychological theory (i.e., the extended agency model of narcissism and the shifting standards model of social evaluation) with strategic management research to theorize and test under which conditions CEOs are better suited than others for EP. Findings based on our new and improved measure of CEO narcissism and a mixed-methods approach showed a strong interaction between CEO sex and narcissism on firm EP, such that CEO narcissism had a more negative impact on EP among firms led by women CEOs than by men CEOs—especially with positive EP-related media attention (Study 1). We replicated and causally extended these effects in an experiment (Study 2) because the same level of high EP more positively exceeded media professionals’ and key stakeholders’ expectations when performed by a man (vs. a woman). Thus, these results support the idea that more narcissistic women avoid expanding their EP efforts, while more narcissistic men engage in more EP, when they receive positive attention for it. But critically, less narcissistic women still showed the most

EP, echoing previous research showing a “female sustainability advantage” (e.g., Byron and Post, 2016; Glass et al., 2016; Gloor et al., 2022; Pan et al., 2020).

Theoretical Implications

This research makes several contributions to the management literature. First, we enrich theory and research on CEO narcissism by integrating psychological theory to outline and test the self-regulatory processes through which narcissistic esteem is generated among men and women CEOs in response to positive EP-related media attention. Our research showed that CEO personality—in particular, narcissism—predicts EP, but narcissistic men and women CEOs show opposing patterns of effects on EP. This reveals a boundary condition for the relation between CEO sex and EP, which we only uncovered using an intersectional (Crenshaw, 1989; Hall et al., 2019) approach considering how personality *and* sex shape EP. By moving beyond essentialist notions assuming more homogeneity within (vs. between) categories such as sex (Lau et al., 2021), we showed ample heterogeneity within women’s EP according to their narcissism, which was further amplified by positive media attention. While Mui and Hill (2023) advanced the field of CEO sex and sustainability research in valuable ways by exposing heterogeneity among women based on perceived communality and attractiveness, they stopped short of showing an explicit mechanism and of comparing their results with those of male CEOs. Our evidence from mixed-methods studies shows that positive EP-related attention is not simply an amplifier of “more is better” sustainability outcomes; rather, it is the key social reward that differentially motivates narcissistic men and women CEOs, producing opposing patterns of EP. In doing so, we clarified how media attention shapes (women) CEOs’ behavior, answering calls to further explore how context affects CEO behavior (e.g., Cragun et al., 2020; Mah et al., 2023), and

highlighting how the increased scrutiny accompanying more prominent executive roles (Frankort et al., 2026) may differentially affect women (and men) according to their personality.

Second, we extend behavioral (microfoundations) strategy research by introducing shifting standards to explain variation in narcissistic women CEOs' EP, showing how media attention operates as a critical social-evaluative mechanism that discounts women's EP and diminishes the positive regard that typically motivates narcissists' prosocial behavior. Prior work suggests women leaders may be rewarded for sustainability-oriented action when they align with prescriptive gender stereotypes, yet narcissism is a proscriptive trait for women, making trait-only explanations incomplete. We therefore highlight an undertheorized phenomenon: how women CEOs' EP is evaluated when they simultaneously display stereotypic (sustainability-oriented) and counter-stereotypic (narcissistic) characteristics. With media attention as a critical social-evaluative mechanism, our findings show that visibility recalibrates evaluative criteria in gendered ways, such that comparable EP more readily exceeds expectations when performed by men than by women. This discounting of women's EP diminishes the positive regard that typically fuels narcissists' self-regulatory motives and, in turn, shapes firm-level EP outcomes. Similarly, our findings also challenge the conventional view that *all* women leaders are more caring and concerned about environmental issues (see Lau et al., 2021), while also outlining the conditions under which men leaders show more or less care for the environment. This approach advances beyond explanations that rely solely on CEO sex or narcissism alone to explain firm behavior, providing novel insights into the critical, yet underexplored, role of women CEOs in combination with narcissism. Because prior research has largely focused on men CEOs' narcissism and its impacts on decision-making and firm outcomes, this research makes sense of the mixed effects in the literature on CEO narcissism (e.g., Al-Shammari et al., 2019;

Bouzouitina et al., 2021; Gupta et al., 2019; Petrenko et al., 2016; Tang et al., 2018), executive sex and sustainability (Byron and Post, 2016; Mui and Hill, 2023). This advances the literature on management and psychology by exploring gender differences in how CEO narcissism manifests, answering calls from CEO narcissism reviews (e.g., Cragun et al., 2020). A concrete way to integrate this insight into future theory and research could be not merely controlling for-- but also analyzing the moderating effect of—CEO sex on the proposed relations of interest.

Third, we contribute to narcissism and leadership research by theorizing and testing a gender-contingent motivational feedback process through which social responses to EP differentially reinforce or discourage narcissistic men and women CEOs over time. Dominant perspectives often treat narcissistic self-enhancement motives as largely gender-agnostic; however, our findings show these motives are dynamically conditioned by gendered evaluative contexts. Specifically, media praise for EP provides reinforcing esteem cues for narcissistic men, motivating greater EP, whereas the same attention environment discourages narcissistic women by withholding equivalent positive regard for comparable EP. These asymmetrical feedback patterns help explain why men and women CEOs with similar narcissism levels adapt EP behavior in divergent ways and demonstrate that a nominally stable personality trait can yield systematically different strategic outcomes depending on how third parties evaluate leaders. We do not imply that *all* theory and research on leader narcissism is inherently gendered, as this idea has been rigorously tested via meta-analysis (e.g., Grijalva et al., 2015). However, given the prominence and visibility of the CEO role, as well as the more intense role pre- and proscriptions the CEO role entails (Mui and Hill, 2023), our findings highlight this meaningful exception.

Finally, we were able to test these theoretical claims, in part, because we improved how CEO narcissism is measured in strategy research. Because CEO narcissism measurement has

suffered from several shortcomings (see Brown, 2016; Cragun et al., 2020; Van Scotter, 2020), we moved beyond the traditional use of observable, often distant proxies of strategic leaders' psychological attributes—a method heavily relied on in strategy research due to the difficulties in accessing top managers for “scholarly poking and probing” (Hambrick, 2007, p. 337). Our Big Five-based “disagreeable extraversion” approach offers several advantages: it is more valid for male and female CEOs, because it avoids reliance on compensation that disproportionately reflects male CEOs (and, 40% of compensation may be attributable to firm size; Tosi et al., 2000), and it scales efficiently across large, archival datasets and time-series analyses over many firm-years where executive surveys are infeasible. As such, our measure is useful for archival studies testing CEO narcissism—especially those interested in theorizing and testing potential sex differences without gender-biased proxies; it is also suitable for comparative or mixed-methods research triangulating results across experimental and survey data.

While we repeatedly demonstrated the reliability and validity of our measure and replicated our pattern of effects across panel data and in an experiment, efficient measures face other issues (e.g., they cannot calculate scale reliability). Our measure may also be less ideal for distinguishing narcissism from related traits like dominance or hubris, which require multifaceted scales (although we provide some empirical evidence for distinguishing these in Appendix 1A-1B). Still, we hope subsequent theoretical contributions will follow from new measures and methods contributions like here. By developing a better-aligned measure of CEO narcissism and employing a mixed methods approach (including experiments) through which we showed (gendered) media attention as a key contingency of executive strategy and behavior—we also address 4 of the 5 critiques of upper echelons theory and research recently raised by Neely and colleagues (2020) and provide further support for the idea that management scholars may

need to return to our theories and question those that are heavily (or purely) based on men's data (e.g., Sperber et al., 2025) or ostensibly—but not actually—gender neutral (e.g., Adomako et al., 2025; Anglin et al., 2025).

Practical Implications

Our findings have direct implications for strategic leaders and firms seeking to improve sustainability performance. Because our results showed firm EP differs by CEO sex and narcissism, strategic leaders involved in CEO appointments aiming for meaningful EP progress should consider these factors in the evaluation process. To be clear, we are not suggesting firms should favor narcissistic men—even if they show higher EP when they receive positive media attention for it. Indeed, research on CEO narcissism shows this personality trait can generate both positive *and* negative consequences for firms and their stakeholders (e.g., ethically questionable business practices and aggressive risk-taking; Chatterjee and Hambrick, 2007; Ingersoll et al., 2019; see Cragun et al., 2020, for a review). Rather, because less narcissistic women CEOs performed the most EP under positive media attention, our results further extend the rationale for hiring (less narcissistic) women who may be more authentically or meaningfully committed to sustainability. By including potential sustainability gains, our results also expand existing research's narrow justification for hiring and promoting more women leaders in organizations, which tends to focus on financial gains (see Hoobler et al., 2018, for a review).

Corporate boards also play an indirect role in shaping firm-level EP. For example, they can set mechanisms to try to ensure CEOs with narcissistic tendencies pay attention to sustainability without triggering other firm detriments. Possible solutions may include recasting sustainability as a visible opportunity to acquire prestige and praise (Petrenko et al., 2016)—paired with internal incentives within organizations and accountability mechanisms aligned with

this aim to ensure proper oversight (Sedikides and Campbell, 2017). Alternatively, instead of relying on positive attention levers which can exacerbate leaders' narcissistic tendencies (Campbell and Foster, 2007; Finkelstein et al., 2009), corporate boards can also seek alternative ways to incentivize narcissistic CEOs toward EP. For example, because emphasizing a more communal focus can reduce state narcissism and desire for fame (Giacomin and Jordan, 2014), such a strategy could be employed appropriately for CEOs (e.g., emphasizing the collectivism of the organizations' employees and stakeholders, enhancing organizational identification; Reina et al., 2014), which may increase EP for narcissistic female *and* male CEOs.

Finally, the media can also advance corporate progress in addressing environmental challenges by giving greater positive attention to (legitimate) firm sustainability initiatives. To better assess initiative legitimacy, journalists can interrogate the framing (e.g., technically accurate statements that are strategically misleading) and the facts (e.g., via expert networks of scholars, regulatory bodies, etc.). However, our findings imply the same strategies that seem to be effective for motivating more EP in narcissistic men may not generate the same positive outcomes for women and could even have unintended negative consequences. Part of this might be resolved by reducing bias in media coverage, which could help ensure that both men and women leaders are evaluated more equitably, fostering fairer coverage and more balanced EP over time. For example, Joshi and colleagues (2024) recommend firms could indirectly channel supportive information about (female) leaders to the media as a less proximal, less invested stakeholder that may readily apply negative stereotypes and undervalue women leaders. Alternatively, recently developed guides (e.g., Council of Europe, 2025) provide an overview of the specific norms and recommendations for more gender equality in media reporting to combat

stereotypes and prejudice and respect the ethical codes of the profession (e.g., ensure titles are consistent with the essence of the text and excluding irrelevant details such as marital status).

Strengths, Limitations, and Future Directions

By documenting our theorized effects in a package of mixed-methods studies, we complement strategy research with an experiment—an underused method in this field (Bolinger et al., 2022)—while also complementing psychology and organizational behavior with longitudinal/archival field research, an underused method in the latter field. In the experiment, we causally manipulated the positive attention mechanism to explain the relation between leader narcissism and EP that would not have been possible without such a package of studies. Yet, experiments are also limited, because they are not as context-rich nor as consequential in capturing CEO decision-making processes, strategies, and firm outcomes, which are also subject to factors beyond executives' direct control. Thus, we believe the overall package of triangulated effects is valuable here because the complementary designs mitigate the limitations of the individual studies (Turner et al., 2017).

A few methods comments are also worth noting. First, despite the extra steps we took to maximize the number of women CEO observations in our sample (i.e., using matching to triple our share of female CEOs), 13% remains a small share. While less than ideal, it is more than recent studies of CEO sex (e.g., 9.6% in Ingersoll et al., 2019). Furthermore, our measure of CEO narcissism improves on existing measures; however, we cannot distinguish it from other personality traits with comparable functions (e.g., dominance; Hofstee et al., 1992)—although our mechanism of positive media attention is theoretically better aligned with narcissism.

Finally, while we focused on corporate *environmental* performance, future research could explore the effects of leader sex, narcissism, and media attention on corporate *social*

performance (e.g., diversity and inclusion, employee treatment, human rights violations, etc.). Because women—but not men—leaders are penalized for diversity-valuing behaviors (Hekman et al., 2017), the pattern of results may be similar. However, corporate social performance involves a broader array of activities and stakeholders than EP, making it more challenging to measure; effects may also cancel each other out (Chatterji et al., 2009; Hart and Sharfman, 2012). Initial research suggests the link between women CEOs' CSR and CSiR (corporate social irresponsibility) and firm performance strengthens as women are viewed as more communal and attractive (i.e., aligned with gender stereotypes; Mui and Hill, 2023), but these effects have not yet compared men and women. Thus, more research is needed to test these ideas.

Conclusions

To understand how CEOs shape firm-level EP, it is essential to examine the joint effect of their narcissism and sex, as well as the attention CEOs receive for EP from the media. Our research contributes to the literature on the microfoundations of corporate sustainability by clarifying the conditions under which CEOs exhibit better or worse EP, showing that less narcissistic women CEOs engage in the most EP. While the positive attention from others partially counteracts more narcissistic men CEOs' inclinations towards less EP, more narcissistic women CEOs show the opposite effect. Thus, as alluded to in our title, more narcissistic men CEOs' EP increases as they chase the “limelight” of positive, EP-related attention from the media, while more narcissistic women CEOs' EP decreases as they try to evade the same “limelight.”

ENDNOTES

1. Although this information was not reported in the original manuscripts, our best estimates of the shares of men in previous studies of CEO narcissism and sustainability range from 97% (Gupta, personal communication, 28 March 2024) to nearly 100% (Petrenko et al., 2016) based on the women CEOs in the time frames, incomplete data and exclusions. Prior studies merely added gender/sex as a control variable, if at all.
2. Here and throughout, we use the terms “men” and “women” to refer to the biological sex of male and female CEOs, “sex” to describe these dichotomous categories, and “gender” to refer to the more sociological stereotypes and expectations associated with the roles for men and women. This approach is consistent with previous research on similar topics which are grounded in gendered theories of bias but measuring it as two categories of leaders’ sex as men or women (e.g., Joshi et al., 2024; Mui and Hill, 2023; Shea and Hawn, 2019). We do not wish to improperly conflate sex and gender, as the former is dichotomous while the latter is continuous, yet we are also limited by the research we cite and the data we have (e.g., Buchholz, 2022, Execucomp, etc.).
3. This more global form of narcissism is based on two key traits, (dis)agreeability and extraversion (Miller and Maples, 2011). Critically, grandiose narcissism is the most quickly and easily identified form by others (Miller et al., 2011), which means it is also the most accurate to assess via third-party evaluations—which is part of our process here. Scholars have also argued that narrower personality traits, such as narcissism, can be well approximated by composites of two or more broad traits (Credé et al., 2017; Hofstee et al., 1992), akin to our procedure, which we describe in detail later.
4. https://osf.io/mzwq7/?view_only=bbb6ff8678284706be3d5258faa43472
5. Although these scholars also use other, validated measures of narcissism in their research (e.g., the NPI), these measures are not feasible to use with CEOs due to limited access, time constraints, ethical concerns, etc. (see Cragun et al., 2020). Thus, strategy scholars use proxies of personality based on observable data, such as pay (for CEO narcissism; Chatterjee and Hambrick, 2007; 2011) or LinkedIn profiles (Junge et al., 2024).
6. T-test results show our matching is effective, because all five matching criteria showed no statistical differences between our women and men CEO samples after matching (i.e., firm size: $p = 0.676$; ROA: $p = 0.865$; sales growth: $p = 0.987$; female board representation: $p = 1.000$; *SD* of board director age: $p = 0.810$). The percentage of women CEOs increased to 13% (from 4%) after the CEM matching process. Note that we also considered Propensity Score Matching with the nearest neighbor technique. The one-to-one matching approach helps achieve 50% women observations, but given the low base rate of women CEOs, it also leads to a significant reduction in sample size after matching (i.e., a drop of more than 90% from our original sample), potentially reducing the reliability of our results. These estimates differ slightly from the statistics reported in the main text, which reflect the unique women/men in our data.
7. We performed LPA based on the two personality scores comprising our measure of narcissism. LPA identifies categorically distinguishable or qualitatively different groups as a finite latent mixture of 2 underlying distributions. The LPA analysis shows satisfactory matched results; specifically, 72.1% of the CEOs who were predicted to be highly narcissistic (i.e., high disagreeableness and high extraversion) based on LPA

successfully matched our “high narcissism” classification (i.e., ratings ≥ 4 for both disagreeableness and extraversion) used in the main test (see Appendix 3).

8. Single-item (vs. multiple-item) measures are typically more limited in scope but are not necessarily less reliable (Bernard et al., 2005).
9. We used this framing instead of asking participants to imagine themselves as CEOs to maximize the study’s realism, thus enhancing internal and external validity, because the latter entails extra logical leaps (see Aguinis and Bradley, 2014, for best practices in vignette study design).
10. Following a stimulus sampling approach to strengthen our materials, as well as the content and the external validity of our experiment (Wells and Windschitl, 1999), we had 16 different stimuli (i.e., 8 stimuli for men and 8 stimuli for women—2 examples in Appendix 2 with photos occluded to avoid potential photo Copyright issues) to which participants were randomly assigned to view 1 photo. Thus, we treated the experimental stimulus as a random variable, consistent with best practices (see Judd et al., 2012); this decision was also empirically supported by our data (i.e., the models comparing a random intercept model with a linear model significantly differed, $\chi^2[1] = 6.70, p = .0048$).

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Table 1. Descriptive statistics and correlations (Study 1)

	Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1	Environmental performance(EP)	0.39	1.43										
2	CEO narcissism	18.27	3.53	-0.07									
3	CEO sex (woman=1)	0.13	0.33	-0.03	-0.08								
4	Attention (news sentiment)	0.04	0.06	0.06	0.07	0.01							
5	CEO age	56.21	5.82	0.01	-0.01	-0.07	0.01						
6	CEO position tenure	5.05	4.92	-0.13	-0.13	-0.03	-0.02	0.35					
7	CEO duality	0.57	0.49	0.13	0.01	-0.15	0.06	0.28	0.13				
8	CEO with MBA	0.38	0.48	0.13	0.02	-0.06	0.01	0.02	-0.10	0.06			
9	CEO environmental experience	0.95	5.45	-0.02	0.02	0.05	0.04	-0.01	0.02	-0.06	0.00		
10	Female board representation	0.19	0.07	0.11	-0.01	0.15	0.06	0.08	-0.09	0.10	0.00	0.03	
11	Board independence	0.86	0.06	0.16	0.06	-0.01	0.01	-0.01	-0.14	0.09	0.12	0.03	0.20
12	Environmental committee	0.12	0.32	0.26	0.06	-0.05	0.03	0.04	-0.08	0.05	0.12	0.11	0.12
13	ROA	0.05	0.06	0.13	-0.11	0.04	0.13	0.10	0.10	0.07	0.00	0.00	0.03
14	Firm size (log of employees)	1.95	1.42	0.38	0.03	0.03	0.08	0.12	-0.09	0.14	0.06	-0.08	0.34
15	Leverage	0.58	0.25	0.09	0.12	-0.04	0.02	0.03	-0.07	0.08	0.10	0.02	0.11
16	Capital expenditure	513.41	1712	0.26	-0.02	-0.06	0.13	0.01	-0.05	0.11	0.01	-0.03	0.12
17	Sales growth	0.05	0.15	-0.11	-0.07	0.05	0.12	-0.07	0.11	-0.01	-0.02	0.07	-0.11
18	R&D intensity	185.67	855.54	0.34	-0.13	-0.03	0.07	0.04	-0.04	0.05	0.05	-0.04	0.08
19	Advertising intensity	90.08	359.72	0.32	-0.07	0.04	0.07	0.02	-0.01	0.08	0.02	-0.04	0.18
20	Shareholder activism	0.10	0.35	0.15	0.02	-0.06	-0.01	0.03	-0.05	0.03	0.00	0.00	0.04
21	Endogeneity control	18.35	0.48	0.00	0.18	-0.02	0.08	-0.01	-0.08	0.02	0.04	0.14	0.05

	Variable	11	12	13	14	15	16	17	18	19	20
12	Environmental committee	0.17									
13	ROA	-0.08	0.01								
14	Firm size (log of employees)	0.19	0.20	0.17							
15	Leverage	0.22	0.12	-0.14	0.20						
16	Capital expenditure	0.12	0.09	0.04	0.29	0.04					
17	Sales growth	-0.13	-0.06	0.23	-0.11	-0.16	-0.07				
18	R&D intensity	0.07	0.00	0.15	0.28	-0.07	0.24	-0.02			
19	Advertising intensity	0.10	0.04	0.15	0.37	0.03	0.45	-0.04	0.54		
20	Shareholder activism	0.09	0.07	0.01	0.09	0.06	0.13	-0.05	0.06	0.05	
21	Endogeneity control	0.14	0.04	-0.12	-0.07	0.17	0.11	-0.05	-0.06	-0.10	0.15

Note. Pair-wise correlations reported based on the matched sample. Absolute values of correlations greater than .05 are significant at $p < .05$ level.

Table 2. Effects of CEO sex and narcissism on environmental performance (Study 1)

Variable	Model 1		Model 2	
Constant	-3.853	(15.570)	-3.646	(15.047)
CEO age	-0.003	(0.007)	-0.003	(0.007)
CEO position tenure	-0.026**	(0.008)	-0.026**	(0.008)
CEO duality	0.086	(0.090)	0.058	(0.082)
CEO with MBA	0.153	(0.100)	0.162	(0.100)
CEO environmental experience	-0.002	(0.017)	0.000	(0.016)
Female board representation	-1.096 ⁺	(0.642)	-1.091 ⁺	(0.623)
Board independence	0.194	(0.580)	0.278	(0.580)
Environmental committee	0.767***	(0.180)	0.795***	(0.179)
ROA	1.374**	(0.485)	1.455**	(0.497)
Firm size (log of employees)	0.282***	(0.042)	0.287***	(0.040)
Leverage	0.167	(0.145)	0.129	(0.147)
Capital expenditure	0.000	(0.000)	0.000	(0.000)
Sales growth	-0.445*	(0.183)	-0.458*	(0.182)
R&D intensity	0.000***	(0.000)	0.000***	(0.000)
Advertising intensity	0.000	(0.000)	0.000	(0.000)
Shareholder activism	0.128	(0.124)	0.138	(0.122)
Endogeneity control	0.144	(0.801)	0.110	(0.774)
CEO narcissism	-0.036 ⁺	(0.020)	-0.018	(0.018)
CEO sex (woman=1)	0.230	(0.177)	2.973**	(1.006)
CEO narcissism × Sex			-0.155**	(0.052)
Firm FE	Yes		Yes	
Industry FE	Yes		Yes	
Year FE	Yes		Yes	
χ^2	1488		1519	
Observations	1,493		1,493	

Note: Matched sample used in the analysis. Robust *standard errors* in parentheses. Two-tailed tests.

⁺ $p < 0.10$

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Table 3. Effects of CEO narcissism, sex, and attention on environmental performance (Study 1)

Variable	Model 1		Model 2		Model 3	
Constant	-15.778	(18.526)	-14.344	(17.729)	-13.973	(17.750)
CEO age	-0.014	(0.009)	-0.013	(0.009)	-0.014	(0.009)
CEO position tenure	-0.028**	(0.011)	-0.028**	(0.011)	-0.028*	(0.011)
CEO duality	0.003	(0.106)	-0.034	(0.106)	-0.031	(0.107)
CEO with MBA	0.023	(0.129)	0.030	(0.129)	0.035	(0.130)
CEO environmental experience	-0.000	(0.020)	0.001	(0.020)	0.001	(0.020)
Female board representation	-0.838	(0.817)	-0.928	(0.807)	-0.926	(0.801)
Board independence	-1.038	(0.798)	-0.909	(0.782)	-1.016	(0.809)
Environmental committee	0.838***	(0.231)	0.859***	(0.233)	0.862***	(0.234)
ROA	1.517+	(0.810)	1.541+	(0.825)	1.532+	(0.840)
Firm size (log of employees)	0.306***	(0.056)	0.309***	(0.056)	0.307***	(0.056)
Leverage	0.169	(0.177)	0.161	(0.177)	0.167	(0.178)
Capital expenditure	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Sales growth	-0.224	(0.268)	-0.246	(0.268)	-0.227	(0.272)
R&D intensity	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
Advertising intensity	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Shareholder activism	0.218	(0.148)	0.226	(0.145)	0.228	(0.143)
Endogeneity control	0.951	(1.045)	0.853	(0.995)	0.850	(0.997)
CEO narcissism	-0.023	(0.020)	-0.012	(0.020)	-0.023	(0.021)
CEO sex (woman=1)	0.354	(0.247)	3.120**	(1.189)	2.651*	(1.043)
Attention (news sentiment)	0.291	(0.552)	0.353	(0.552)	-3.789	(2.861)
CEO narcissism × gender			-0.153*	(0.059)	-0.129*	(0.053)
CEO narcissism × attention					0.219	(0.151)
CEO sex x attention					16.061**	(5.537)
CEO narcissism × sex × attention					-0.796**	(0.302)
Firm FE	Yes		Yes		Yes	
Industry FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
χ^2	490		596		775	
Observations	887		887		887	

Note: Matched sample used in the analysis. Robust *standard errors* in parentheses. Two-tailed tests. The variable ‘Attention’ is based on the event sentiment scores (ESS), where a higher value indicates more positive attention.

+ $p < 0.10$

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Table 4. Descriptive statistics and correlations (Study 2)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1 Environmental performance (EP)	21.80	15.10				
2 Leader sex	.47	.50	.061			
3 Positive attention condition	.49	.50	.208	-.045		
4 Leader narcissism	20.81	3.59	.050	.076	.055	
5 Leader strategic influence	3.04	.87	-.095	-.150	.067	-.150

Note. Absolute values of correlations greater than or equal to .088 are significant at the $p < .05$ level. $N = 504$.

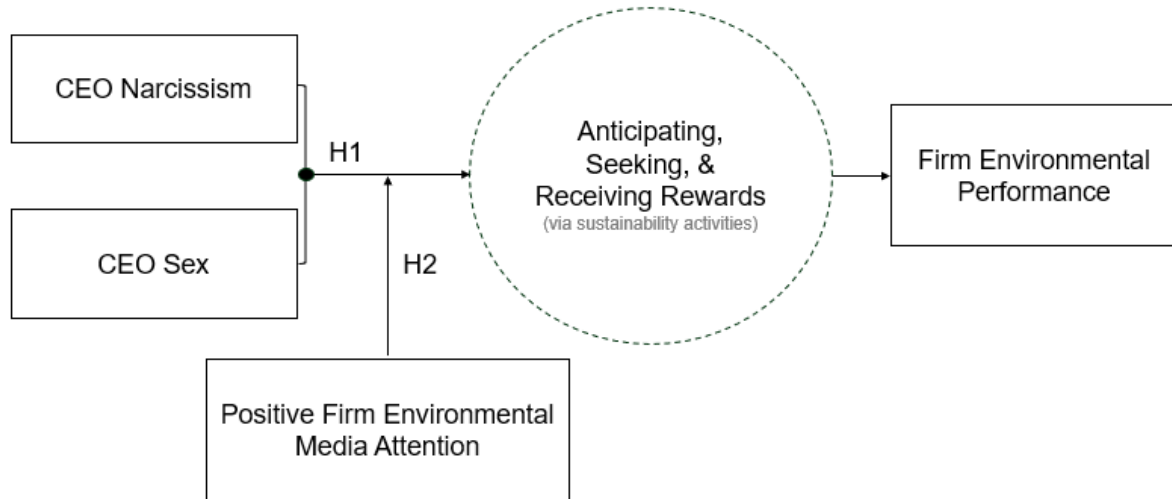
Table 5. Path model results predicting environmental performance (Study 2)

	Model 1		Model 2		Model 3	
Leader narcissism	0.271	(0.602)	0.715	(0.788)	0.169	(1.061)
Leader sex (Woman = 1)	1.660	(1.381)	1.690	(1.377)	-0.166	(1.643)
Positive attention condition	6.539***	(1.329)	6.483***	(1.326)	4.809**	(1.860)
Leader sex $\times$ leader narcissism			-1.083	(1.234)	0.877	(1.496)
Leader narcissism $\times$ positive attention					1.270	(1.605)
Leader sex $\times$ positive attention					3.937	(2.627)
Leader sex $\times$ leader narcissism $\times$ positive attention					-4.519 ⁺	(2.492)
Some Strategy Influence	-4.103*	(1.698)	-4.156*	(1.703)	-4.232*	(1.691)
A Lot of Strategy Influence	-3.007 ⁺	(1.827)	-3.029 ⁺	(1.829)	-3.013 ⁺	(1.819)
Total Strategy Influence	-6.576*	(3.199)	-6.516*	(3.216)	-6.455*	(3.267)
Constant	20.463***	(1.760)	20.541***	(1.776)	21.360***	(1.838)
-2LL	-2065.772		-2065.454		-2062.972	

Note. Leader narcissism is standardized. Robust *SEs* in parentheses. Strategy reference category = a little control over strategy. $N = 504$.

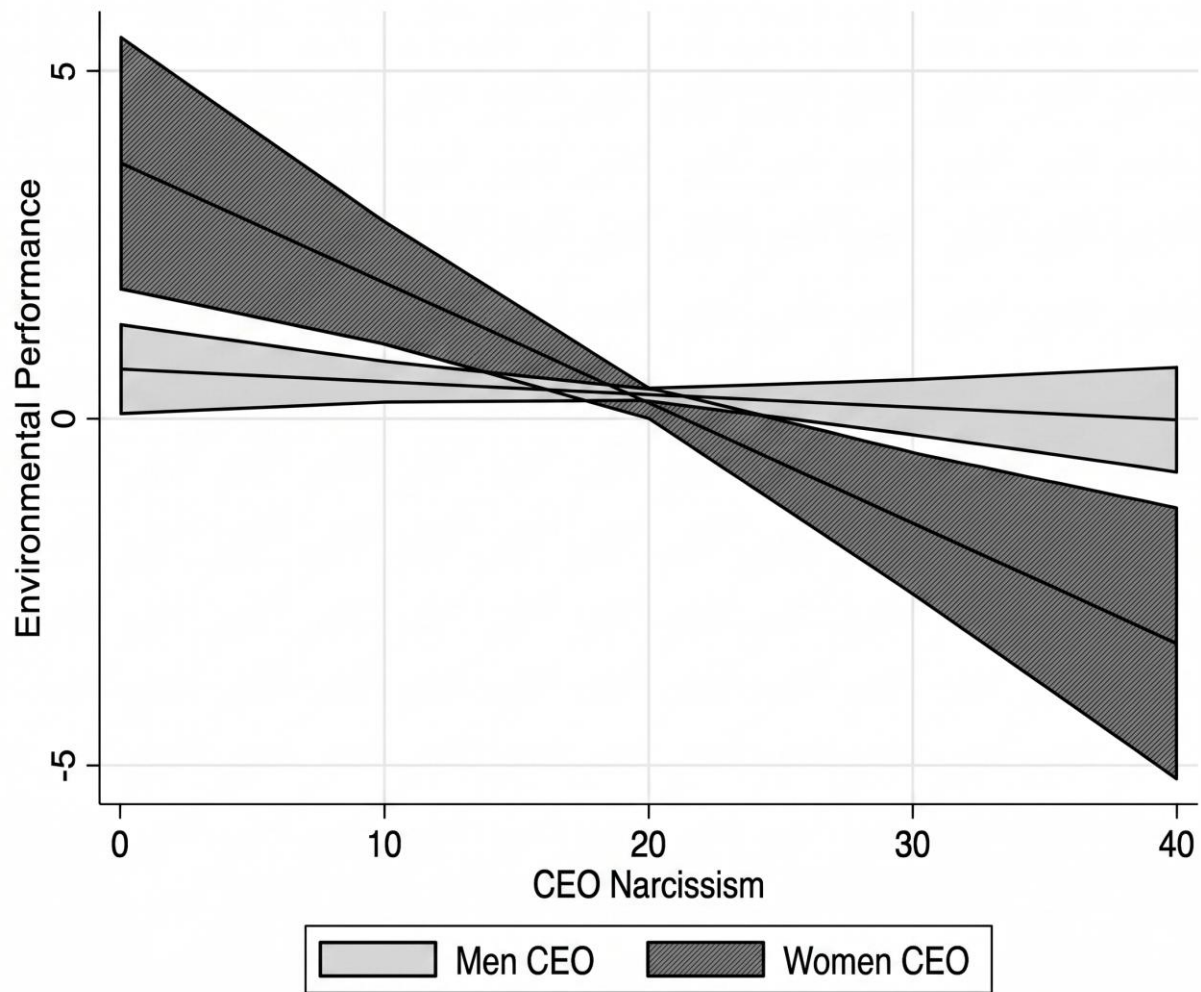
⁺ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

Figure 1. Complete conceptual model



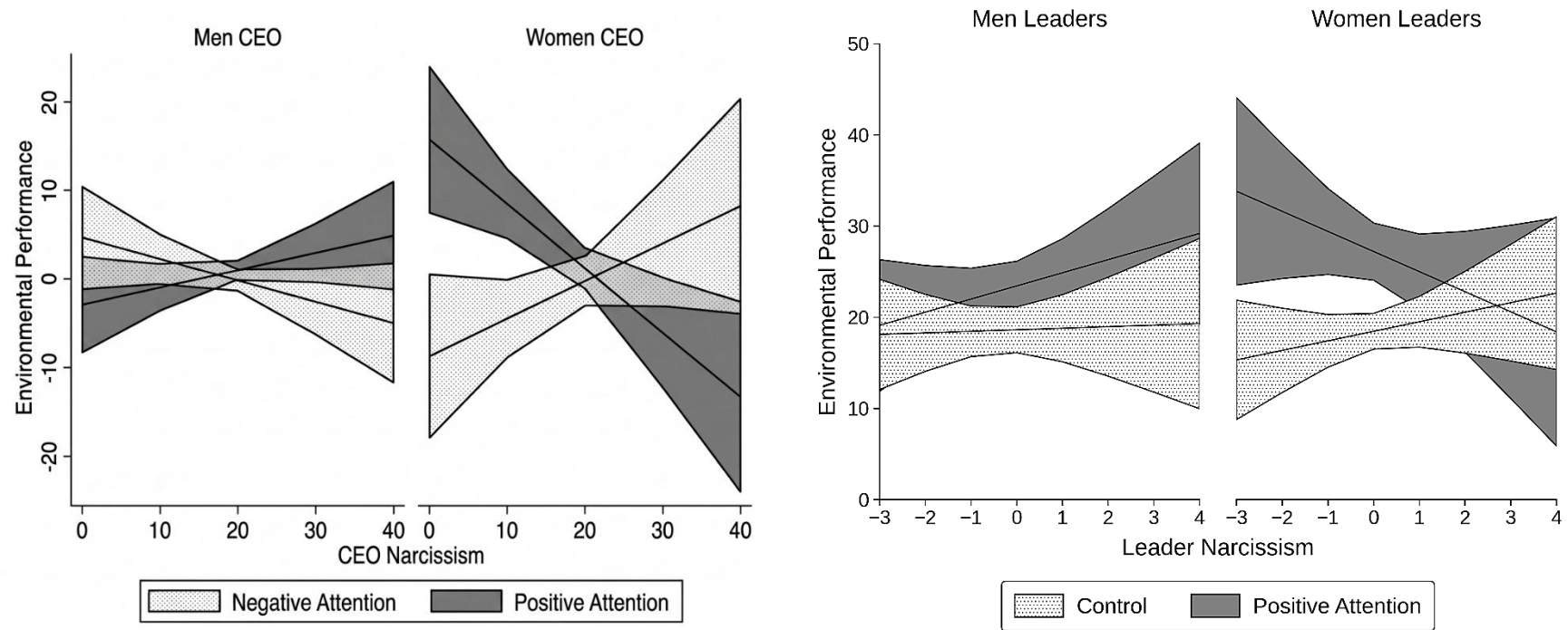
Note. The boxes represent measured variables in our models (Studies 1-2); the dotted oval represents the theory-based, latent mechanism linking these measured variables with our outcome (Studies 1-2). The predictor box represents the joint effect of CEO narcissism and sex.

Figure 2. Environmental performance by CEO sex and narcissism (Study 1)



Note. Shaded regions represent 95% CIs.

Figure 3. EP by CEO/leader narcissism, sex, and attention (Study 1, left; Study 2, right)



Note. While both Environmental Performance outcome measures reflect the KLD strengths (Study 1 – left) or a measure we developed based on the KLD strengths (Study 2 – right), they reflect different ranges (i.e., the predicted values based on the standardized KLD strengths in Study 1 and the predicted values based on participants' ratings from 0 – 100 in Study 2). Shaded regions represent 95% CIs.