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# The double-edged sword of CEO narcissism: A meta-analysis of innovation and firm performance implications

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## Abstract

Despite a growing body of research, the role of chief executive officer (CEO) narcissism for firm performance is subject to a controversial discussion in the literature. To help advance the discussion, I build on upper echelon theory to propose that innovation is a crucial mediating mechanism that helps explain how CEO narcissism may be beneficial for firm performance. To better understand the conditions under which CEO narcissism may be beneficial for innovation and ultimately firm performance, I investigate the moderating role of CEO gender and managerial discretion. Building on 68 studies, results from meta-analytical structural equation modeling confirm that CEO narcissism can be beneficial for firm performance through stimulating innovation. However, the results further caution that these performance benefits are likely to be canceled out by other detrimental actions pursued by narcissistic CEOs, indicating that they can be a double-edged sword for firms. Moreover, the results support that narcissistic female CEOs engage less in innovation (compared to their male counterparts). Interestingly, they seem to engage in other beneficial actions which ultimately improve overall firm performance, whereas their male counterparts engage in other harmful actions which hurt overall firm performance. The results further highlight that, while the upsides of narcissistic CEOs for performance through innovation increase in high managerial discretion contexts, their greater leeway enhances their downsides even more, so that they do not only offset the benefits of narcissistic CEOs, but even lead to detrimental effects for performance. This study contributes to the literature on CEO narcissism by theorizing and empirically demonstrating that the relationship between CEO narcissism and performance is more complex than previously depicted and requires a more nuanced investigation of the underlying mechanism as well as of potential contingencies. Building on these findings, future research opportunities are identified to further advance the literature on CEO narcissism.

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## KEYWORDS

CEO narcissism, firm performance, innovation, meta-analysis, upper echelon theory

## 1 | INTRODUCTION

*“If I am a narcissist (which might be true), at least I am a useful one”.* (Elon Musk on Twitter, 2018)

Drawing on upper echelon theory (Finkelstein et al., 2009; Hambrick & Mason, 1984), research is characterized by an increasing interest in understanding how the personality characteristics of CEOs affect firm outcomes (Liu et al., 2018; Smith et al., 2018; Steinberg et al., 2022; Stock et al., 2019; You et al., 2020). In particular, scholars have been paying increasing attention to the influence of CEO narcissism, which refers to the degree to which an individual has an inflated self-view and has a strong need to have that self-view continuously reinforced (Campbell et al., 2004; Chatterjee & Hambrick, 2007), on firm performance (Chatterjee & Hambrick, 2011; Cragun et al., 2020; Reina et al., 2014; Wang et al., 2016).

However, the role of narcissistic CEOs for firm performance is subject to a controversial discussion in the literature (Braun, 2017; Cragun et al., 2020; Smith et al., 2018). On the one hand, the predominant view in the literature considers narcissism as an undesirable CEO personality characteristic or “dark trait” that inevitably leads to negative effects for firms, such as overpaying for acquisitions (Chatterjee & Hambrick, 2007), excessive risk taking (Chatterjee & Hambrick, 2011), or legal risks (O’Reilly et al., 2018) which harm firm performance (Ham et al., 2018). On the other hand, however, studies point to potential positive aspects of narcissistic CEOs, such as their higher productivity (Maccoby, 2004) and willingness to engage in novel endeavors (Gerstner et al., 2013). Narcissistic CEOs are often perceived as charismatic leaders that have the ability to inspire followers through their bold visions and thus to engage in innovative behaviors (Galvin et al., 2010; Maccoby, 2004). For instance, several successful firms are led by narcissistic CEOs, such as Tesla’s Elon Musk or Apple’s previous CEO Steve Jobs. In addition, empirical research on the relationship between CEO narcissism and performance has yielded inconclusive evidence as highlighted by a recent review by Cragun et al. (2020), thus further fueling the discussion. While some studies find a positive effect of narcissistic CEOs on firm performance (Olsen et al., 2014), others find no significant (Chatterjee & Hambrick, 2007), or even a negative effect (Ham et al., 2018). Consequently, the question arises how and when may narcissistic CEOs be beneficial for firm performance?

## Practitioner points

- Narcissistic CEOs can be beneficial for firm performance through stimulating innovation. However, these performance benefits are likely to be canceled out by their other harmful actions for firm performance (“dark sides”) so that firms should carefully monitor the strategic actions of narcissistic CEOs.
- Monitoring the actions of narcissistic CEOs is especially important for firms embedded in high discretion contexts because the greater latitude enhances the detrimental actions of narcissistic CEOs even more than their performance benefits resulting from innovation, so that they might ultimately hurt overall firm performance.
- Firms should particularly monitor the strategic actions of narcissistic male CEOs to prevent performances losses from their “dark sides” and thus to benefit from the positive performance implications of their innovation endeavors.

To extend this stream of research, I propose that the relationship between CEO narcissism and performance is more complex than previously depicted and requires a more nuanced investigation of the underlying mechanisms. Specifically, prior studies have typically focused on the performance consequences of CEO narcissism “without adequately theorizing about the mediating mechanisms” (Chatterjee & Pollock, 2017, p. 703). Consistent with the upper echelon perspective, the first aim of this study is thus to extend this stream of research by theorizing that innovation is an important mediating mechanism through which narcissistic CEOs may positively influence firm performance. While prior research suggests that narcissistic CEOs are particularly prone to engage in bold and risky actions to receive attention and admiration (e.g., Buyl et al., 2017; Gerstner et al., 2013), extant research has so far neglected to theoretically and empirically examine how the influence of CEO narcissism on innovation helps to explain their influence on firm performance.

The second aim of this study is to examine the conditions that help explain when narcissistic CEOs may be

beneficial for innovation and thus, in turn, for firm performance. Specifically, I focus on CEO gender because we know from prior research that narcissistic behaviors are perceived differently when they are displayed by female leaders than by their male counterparts (De Hoogh et al., 2015). However, research on the consequences of CEO narcissism has typically neglected to examine the moderating influence of gender differences as highlighted by the recent review of Cragun et al. (2020). A notable exception is the study by Ingersoll et al. (2019) which shows that narcissistic female CEOs engage less in risk-taking. Building on this research and insights from role congruity theory (Eagly & Karau, 2002), I examine the moderating role of CEO gender on the effect CEO narcissism has on innovation and ultimately firm performance.

In addition, research has shown that the actions of narcissistic CEOs are not taken within a “contextual vacuum” (Crossland & Hambrick, 2007, p. 771), but rather are embedded in environments that substantially shape the level of managerial discretion (Crossland & Hambrick, 2007, 2011). Building on this research, and consistent with upper echelon theory, I further examine the influence of managerial discretion as an important boundary condition of the influence narcissistic CEOs have on innovation and thus, in turn, on firm performance.

To empirically examine the predictions of this study, I performed a meta-analytic study based on 68 studies, covering 20 different countries from 2011 to 2022. Specifically, I used meta-analytical structural equation modeling (MASEM; Bergh et al., 2016; Viswesvaran & Ones, 1995) to examine the theorized moderated mediation model. This advanced meta-analytic method is particularly appropriate to examine the predictions of this study as it, compared to traditional meta-analytic methods, enables to go beyond direct effects and thus to analyze mediation models (Bergh et al., 2016; Combs et al., 2019).

This study contributes to upper echelon research on CEO narcissism in the following ways. First, this study contributes to the controversial discussion in the literature about the performance implications of CEO narcissism (e.g., Cragun et al., 2020; Reina et al., 2014; Smith et al., 2018) by shedding light on an important positive strategic mechanism (i.e., innovation) that helps explain how narcissistic CEOs may be beneficial for firm performance. Guided by upper echelon theory, I integrate insights from parallel research streams (Cragun et al., 2020) either focusing on the influence of CEO narcissism on innovation (e.g., Kashmiri et al., 2017) or on performance (Reina et al., 2014), to provide a more holistic picture of the influence CEO narcissism has on

innovation and thus ultimately on firm performance. While the results support that narcissistic CEOs can be beneficial for performance through stimulating innovation, the results from the partial mediation model further uncover that these benefits are likely to be canceled out by other detrimental actions pursued by those executives, indicating that they can be a double-edged sword for firms.

Second, this study contributes to the literature on CEO narcissism by building on role congruity theory (Eagly & Karau, 2002) to provide novel insights into the moderating influence of CEO gender on the effect CEO narcissism has on innovation and ultimately performance. The results suggest that narcissistic female CEOs tend to forgo innovation benefits, but, interestingly, seem to engage in other beneficial actions which are overall beneficial for firm performance. Instead, narcissistic male CEOs, who provide performance benefits resulting from pursuing innovation, seem to harm overall firm performance because they tend to engage in other rather detrimental actions.

Third, this study extends prior research by highlighting that the influence of CEO narcissism on innovation and ultimately performance depends on the level of managerial discretion provided by the environment (Crossland & Hambrick, 2011). While the findings based on 20 different countries suggest that higher levels of managerial discretion enhance the ability of narcissistic CEOs to engage in innovation, the results uncover that their greater leeway also enhances other actions that harm firm performance. As a result, their positive performance implications through innovation are offset by their other detrimental decisions that ultimately hurt performance. Thereby, this study answers the call from Cragun et al. (2020) to explain the mixed findings in prior research on the influence CEO narcissism has on innovation as well as on firm performance.

## 2 | THEORETICAL BACKGROUND AND HYPOTHESES

### 2.1 | CEO narcissism and firm performance

Since the seminal paper by Hambrick and Mason (1984) which posits that the decisions and behaviors of upper echelons are influenced by their personalities and cognitive abilities, research on the influence of CEO personality on firm outcomes, such as innovation and firm performance, has grown rapidly (Braun, 2017; Cragun et al., 2020; Liu et al., 2018; Smith et al., 2018). Specifically, CEO personality determines how information and

stimuli are received, filtered, interpreted and thus influences the executive's strategic decision-making (Finkelstein et al., 2009; Hambrick & Mason, 1984). Building on this perspective, a large stream of research has relied on demographic variables, such as age, education, or tenure as proxies for CEO's personality (for a review, see e.g., Hoskisson et al., 2017). More recent research has increasingly used other proxies that attempt to capture executive's personality and attitudes more precisely, such as CEO narcissism (Chatterjee & Hambrick, 2007, 2011; Cragun et al., 2020).<sup>1</sup>

An increasing body of research has focused on CEO narcissism which refers to the degree to which an individual has an inflated self-view and has a strong need to have that self-view continuously reinforced (Campbell et al., 2004; Chatterjee & Hambrick, 2007). While early psychology research considered narcissism to be a clinical disorder, narcissism has been reconceptualized by personality theorists as a personality characteristic or trait on which all individuals may be placed (Chatterjee & Hambrick, 2007; Emmons, 1987). Narcissism is considered to be a relative stable personality trait that is particularly prevalent among CEOs (Campbell & Miller, 2011; Chatterjee & Hambrick, 2007; Rovelli & Curnis, 2021). Narcissistic CEOs are characterized as individuals who believe that they are unique and superior to others and who have strong need for their inflated self-view to be reinforced (Campbell et al., 2004; Chatterjee & Hambrick, 2007).

Narcissism differs from related personality characteristics, such as overconfidence. Specifically, both, narcissism and overconfidence share the notion of an overly positive self-concept and prior research views them as related but distinct constructs (Liu et al., 2018; Tang et al., 2018). The major difference between narcissism and overconfidence is that narcissistic CEOs seek to garner constant attention and admiration to reaffirm their inflated positive self-view, whereas overconfident CEOs do not care so much about what others think of them (Campbell et al., 2004; Tang et al., 2018).

The literature is characterized by a controversial discussion about whether CEO narcissism is detrimental for firms and their performance or whether they may also provide upsides for firms (Cragun et al., 2020; Reina et al., 2014; Smith et al., 2018). The predominant view suggests that CEO narcissism is a “dark side” personality that leads to negative effects for firms, such as excessive risk taking (Chatterjee & Hambrick, 2011), accounting data manipulation (Ham et al., 2018), or fraud (O'Reilly

et al., 2018; Rijsenbilt & Commandeur, 2013), thus ultimately hurting firm performance (Ham et al., 2018). However, several scholars have also pointed to the potential positive aspects of CEO narcissism, such as their bold visions and charismatic leadership style which enables them to inspire followers (Galvin et al., 2010). MacCoby (2004, p. 2) refers to them as “productive narcissists” who “have the audacity to push through the massive transformation that society periodically undertakes.” This controversy is also reflected in inconclusive empirical findings of the relationship between CEO narcissism and firm performance (Cragun et al., 2020). While some studies find a positive relationship between narcissistic CEOs and firm performance (Olsen et al., 2014), others find no significant (Chatterjee & Hambrick, 2007), or even a negative effect (Ham et al., 2018; Reina et al., 2014). A recent meta-analytic review by Cragun et al. (2020) finds evidence for a small significant positive relationship between CEO narcissism and firm performance which is characterized by a large amount of variance, thus indicating the presence of moderators. While informative, they conclude that “more studies are needed to reach a more definite conclusion” and call for more research on that topic (Cragun et al., 2020, p. 917).

To extend this stream of research, the aim of this study is not to propose arguments for an overall positive or negative effect of CEO narcissism on firm performance. Rather, I theorize in the following that the relationship between CEO narcissism and firm performance is more complex and requires a more nuanced investigation of the underlying mechanisms (Chatterjee & Pollock, 2017; Reina et al., 2014), such as their strategic choices (Hambrick & Mason, 1984). Consistent with upper echelon theory (Hambrick & Mason, 1984), I theorize in the following that innovation is an important mechanism through which narcissistic CEOs may positively influence firm performance. Building from that, I investigate the moderating role of CEO gender and managerial discretion to better understand the conditions under which CEO narcissism may be beneficial for innovation and ultimately firm performance. Figure 1 summarizes the research model.

## 2.2 | CEO narcissism, innovation, and firm performance

Upper echelon theory posits that executives interpret information and make decisions on the basis of their personality (Finkelstein et al., 2009; Hambrick & Mason, 1984). As Hambrick and Mason (1984, p. 197) note “the heart of the theory is the portrayal of upper echelon characteristics as determinants of strategic

<sup>1</sup>Prior research has investigated a variety of CEO personality characteristics, such as core-self-evaluation or overconfidence. For an overview see, Liu et al. (2018) or Smith et al. (2018).



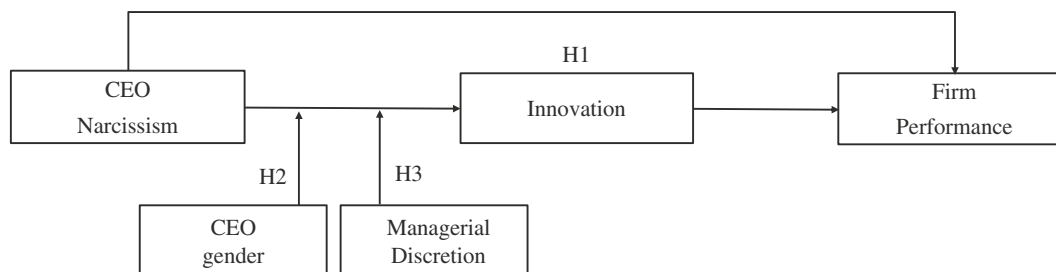


FIGURE 1 Research model

choices and, through these choices, of organizational performance.” Building on this perspective, I propose that CEO narcissism positively influences innovation and thus ultimately firm performance for the following reasons.

First, prior research has demonstrated that narcissistic CEOs tend to engage in bold and risky actions to satisfy their need for constant attention and appraisal (Chatterjee & Hambrick, 2011; Kets de Vries & Miller, 1985). For instance, Gerstner et al. (2013) find that narcissistic CEOs are particularly prone to invest in discontinuous technologies when they expect widespread admiration for their bold actions. Narcissistic CEOs are thus more likely (than their less narcissistic counterparts) to engage in innovation because they give them the opportunity to demonstrate their superiority (Wallace & Baumeister, 2002) and to gain visibility and “glory” (Maccoby, 2004, p. 3). Through innovations, narcissistic CEOs are able to deviate from their competitors and thus to be seen as visionary which helps them to attract attention and applause and thus to have their self-view continuously reinforced (Chatterjee & Hambrick, 2011).

Second, narcissistic CEOs tend to overestimate their abilities (Judge et al., 2006) and thus to perceive lower levels of risks associated with pursuing risky endeavors because of their inflated self-view (Campbell et al., 2004). As they tend to perceive unrealistic high probabilities of success (Campbell et al., 2004), they are more likely to engage in innovation than less narcissistic CEOs (Kashmiri et al., 2017). Due to their superior self-view, narcissistic CEOs tend to remain optimistic that they can succeed and thus tend to remain persistent when they are confronted with challenges (Gerstner et al., 2013) which are associated with pursuing risky endeavors (Zhang et al., 2017). Narcissistic CEOs thus typically get less deterred by the uncertainties associated with innovation (i.e., costs, resources) and thus push their firms towards novel endeavors (Wales et al., 2013).

Third, narcissistic CEOs have the ability to encourage innovative behaviors among their followers through inspiring them to “break new ground” (Maccoby, 2004, p. 1). Specifically, narcissistic CEOs are often perceived as inspirational and charismatic because of their passion,

boldness, grand visions, and confidence (Galvin et al., 2010; Rosenthal & Pittinsky, 2006). For instance, Steve Jobs was famous for his charismatic and inspirational leadership style to motivate employees and to successfully launch new products. Similarly, Elon Musk is well known for his bold visions to change or even to disrupt the world. Through their charismatic leadership, narcissistic CEOs attract followers (Maccoby, 2004) and inspire them to engage in creative behaviors in their firms. As a result, firms led by narcissistic CEOs are more likely to achieve innovation than firms with less narcissistic CEOs.

Following upper echelon theory, which posits that executives make strategic choices based on their personality characteristics, which ultimately influence firm performance (Finkelstein et al., 2009; Hambrick & Mason, 1984), I further suggest that the positive effect of CEO narcissism on innovation will positively influence firm performance. According to Schumpeter (1934), innovations enable firms to gain rents through a temporary quasi-monopoly position and thus are crucial for the long-term success of firms. Extant research has confirmed that innovation enables firms to create or maintain their competitive advantage and thus constitutes a crucial element for long-term performance and survival of firms (Anderson et al., 2014; Calantone et al., 2010; Crossan & Apaydin, 2010). For instance, Rubera and Kirca (2012) provide meta-analytic evidence based on 153 studies that firm innovativeness strongly increases a firm’s market position (e.g., market share), financial position (e.g., return on assets [ROA]), and value (e.g., market-to-book [MTB] ratio). Building on these arguments, I propose that:

**Hypothesis 1. (H1):** *CEO narcissism has a positive indirect effect on firm performance through promoting innovation.*

## 2.3 | The moderating role of CEO gender

While I hypothesized that narcissistic CEOs increase innovation and thus, in turn, firm performance, I further

propose that gender differences represent an important boundary condition of these relationships. Drawing on role congruity theory (Eagly & Karau, 2002), I propose that narcissistic female CEOs are less accepted and thus face more constraints in their firms compared to their narcissistic male counterparts which reduce their ability to influence firm strategies, such as innovation, and thus ultimately performance. Specifically, role congruity theory (Eagly & Karau, 2002) suggests that female leaders are less favorably evaluated than men due to the perceived incongruity between female social roles and leadership roles (Eagly & Karau, 2002). When female leaders display leadership behaviors (e.g., competitiveness), they often get punished for it (e.g., through negative evaluations) because they violate the social role expectations associated with their gender (i.e., friendly, supportive) (Eagly et al., 1995; Eagly & Karau, 2002). Narcissistic female leaders tend to display an even higher level of gender role incongruity because they do not only fail to conform to their expected gender stereotypes, but even display undesirable behaviors (e.g., dominance, inflated view of self-importance) which are (more) associated with the other gender (De Hoogh et al., 2015). As a result of this role incongruity, research has shown that narcissistic female leaders are perceived as less effective compared to their male counterparts (De Hoogh et al., 2015), indicating that they face challenges in their firms that their male counterparts do not. Recent research thus suggests that narcissistic female leaders are less able to implement their strategic goals in their firms, resulting, for instance, in less risk-taking strategies (Ingersoll et al., 2019). Building on this research, I propose that narcissistic female CEOs are less capable to pursue innovation than narcissistic male CEOs for the following reasons.

First, given that narcissistic female leaders are less accepted and thus face more biases and resistance in their firms (than their male counterparts), they are less likely to receive peer and work-related support in their organizations (Athanasopoulou et al., 2018; Glass & Cook, 2016) necessary for pursuing risky strategies (Ingersoll et al., 2019), such as innovation. Due to their perceived gender role incongruity, peers as well as subordinates may have difficulties to identify with them and to follow their vision to pursue innovation. This argument is supported by research which shows that female leaders tend to be less integrated in informal networks compared to their male counterparts (Moore, 1988).

Second, narcissistic female CEOs may face more difficulties in getting resources necessary for pursuing innovation because they lack sufficient authority. Specifically, prior research has demonstrated that female CEOs often have less structural power in their firms compared to

their male counterparts (Muller-Kahle & Schiehl, 2013). As a result, female CEOs are more constrained by corporate board and top management team members compared to male CEOs which limits their ability to pursue risky strategies, such as innovation. In case of boards or top management teams which lack diversity, there might be a lack of social similarity between them and narcissistic female CEOs, which might hinder collaboration and trust and thus, in the end, lead to lower influence over board decisions (Glass & Cook, 2016; Westphal, 1999). Taken together, narcissistic female CEOs have (compared to their male counterparts) less support and authority to get resources in their firms necessary for pursuing innovation. Hence, narcissistic female CEOs will be less likely to promote innovation and thus, in turn, will have a weaker positive indirect effect on firm performance than narcissistic male CEOs. Building on these arguments, I propose that:

**Hypothesis 2a.** (H2a): *The positive relationship between CEO narcissism and innovation is weaker for narcissistic female CEOs than for narcissistic male CEOs.*

**Hypothesis 2b.** (H2b): *The positive indirect effect of CEO narcissism on firm performance through promoting innovation is weaker for narcissistic female CEOs than for narcissistic male CEOs.*

## 2.4 | The moderating role of managerial discretion

Finally, I propose that the influence of narcissistic CEOs on innovation and thus, in turn, on firm performance depends on their level of managerial discretion which is defined as their latitude of action (Finkelstein et al., 2009; Hambrick & Finkelstein, 1987). It is widely established that executives have a stronger ability to shape firm strategy (i.e., innovation) and thus to influence firm performance when they have high managerial discretion. Specifically, managerial discretion emanates from three sources: the individual (e.g., persistence), the organization (e.g., resource availability), and the environment (e.g., institutional environment) (Finkelstein et al., 2009).<sup>2</sup> I concentrate on the environmental conditions in which CEOs operate in as prior research demonstrates that they shape the executives' latitude of action and thus how much they matter for firm decisions and

<sup>2</sup>For more information see, for instance, Finkelstein et al. (2009) and Hambrick and Finkelstein (1987).

outcomes (Burkhard et al., 2022; Crossland & Hambrick, 2011; Jeong & Harrison, 2017; Wang et al., 2019). In particular, institutional environments comprise informal institutions (e.g., national cultural values) and formal institutions (e.g., regulatory and legal systems) that shape and regulate human interaction (North, 1990). Crossland and Hambrick (2007, 2011) provide evidence that both, formal and informal institutions can significantly constrain or support managerial discretion. Specifically, they identify two overarching institutional themes which define the level of managerial discretion: a country's autonomy and risk orientation. A country's autonomy orientation reflects a country's acceptance of individual initiative and decision-making, whereas risk orientation reflects the degree to which a country tolerates change and encourages risky actions (Crossland & Hambrick, 2007, 2011).

Building on this research, I propose that the influence of CEO narcissism on innovation and thus, in turn, on firm performance is stronger in institutional environments that provide greater managerial discretion (i.e., high autonomy and risk orientation) for the CEO. Specifically, narcissistic CEOs tend to have an inflated self-view (Chatterjee & Hambrick, 2011) and thus typically overestimate their abilities and chances of success associated with innovation (Campbell et al., 2004; Kashmiri et al., 2017). In contexts characterized by high autonomy orientation, the individual decision-making of narcissistic CEOs is more accepted and their views and assumptions about, for instance, potential risks associated with pursuing innovation, are less likely to be challenged by their peers and other stakeholders. Thus, contexts which are characterized by a high autonomy orientation provide a greater decision latitude for narcissistic CEOs which strengthens their ability to pursue innovation. By contrast, in contexts characterized by a low autonomy orientation, collective decision-making yielding consensus is typically important (Crossland & Hambrick, 2011). In such a context, the idiosyncratic decision-making of narcissistic CEOs to demonstrate their superiority is less tolerated and may lead to a lack of support from other stakeholders. Hence, narcissistic CEOs are more constrained in their decision-making and thus less able to pursue innovation when autonomy orientation and thus their decision latitude is low (than when it is high).

In countries characterized by a high risk orientation, unpredictable actions are not only tolerated but even encouraged (Crossland & Hambrick, 2011; Hofstede, 2001). While narcissistic CEOs prefer to engage in bold and risky actions to receive attention and applause (Chatterjee & Hambrick, 2007; Gerstner et al., 2013), high discretion contexts provide them with

the latitude to do so. In such contexts, they are more likely to receive support from their peers as well as from other stakeholders to pursue innovation as they are open to engage in uncertain endeavors (Hofstede, 2001). As a result, narcissistic CEOs are expected to pursue innovation to a greater extent when they are embedded in contexts with a high-risk orientation. Instead, countries characterized by a low-risk orientation are less open for actions that depart from the past, thereby constraining the latitude of action for narcissistic CEOs to engage in innovation which often requires to depart from or even destroy existing knowledge and procedures (Abernathy & Clark, 1985). In such contexts, narcissistic CEOs are more likely to be constrained by the interests of other stakeholders and thus less likely to pursue innovation than when discretion is high.

To sum it up, I expect the influence of narcissistic CEOs on innovation to be stronger when they are embedded in high-discretion contexts which provide them a high autonomy and risk orientation. This, in turn, leads to a higher positive indirect effect of CEO narcissism on firm performance through innovation if they are embedded in high-discretion contexts. Building on these arguments, I propose that:

**Hypothesis 3a.** (H3a): *The positive relationship between CEO narcissism and innovation is stronger in countries characterized by high levels of managerial discretion.*

**Hypothesis 3b.** (H3b): *The positive indirect effect of CEO narcissism on firm performance through innovation is stronger in countries characterized by high levels of managerial discretion.*

### 3 | METHODS

#### 3.1 | Sample

To empirically examine the hypothesized model, I conducted a meta-analytic study following established methodological guidelines (Bergh et al., 2016; Combs et al., 2019; Hunter & Schmidt, 2004). In line with current conventions (e.g., Duran et al., 2016; Jeong & Harrison, 2017), I performed several search procedures to provide a representative database for this meta-analysis. First, to identify relevant studies, I searched in major databases including EBSCO, Web of Science, ABI/Inform, Science Direct, Scopus, and Google Scholar using the following keywords: “narcissism,” “innovation,” “innovativeness,” “new product (development),” “exploratory/exploitative innovation,” “radical/incremental



innovation,” and “firm performance.” Second, I manually searched for relevant papers in the most important academic journals in the area of innovation (e.g., *Journal of Product Innovation Management*) and management (e.g., *Academy of Management Journal*, *Administrative Science Quarterly*, *Strategic Management Journal*, *Journal of Management*, *Journal of Management Studies*, *Organization Science*, *Management Science*, *The Leadership Quarterly*). Third, I consulted the references of recent review papers on CEO narcissism (Cragun et al., 2020; Smith et al., 2018) as well as of the primary studies to identify additional relevant studies. Fourth, I searched for unpublished studies to avoid potential publication bias (Harrison et al., 2017; Rosenthal, 1979). Therefore, I searched in relevant conference proceedings (e.g., *Proceedings of the Annual Meeting of the Academy of Management*) and I used the ProQuest database to search for dissertations. Finally, I contacted several authors to retrieve missing information (e.g., correlation coefficients), unpublished studies, or dissertations.

I included studies in this meta-analysis based on the following criteria. First, studies needed to empirically examine the influence of CEO narcissism on innovation and/or firm performance. Second, studies needed to report Pearson's correlation coefficients between the constructs of interest (or statistics that can be converted into correlations; Lipsey & Wilson, 2001). When studies reported several effect sizes of the relationship of interest due to multiple operationalizations of the dependent variable (e.g., multiple indicators of performance), I calculated a single average effect size and included it into the database to avoid independency bias (Geyskens et al., 2009; Jak & Cheung, 2020; Lipsey & Wilson, 2001). Finally, if studies reported results from independent samples, I included them separately. The final database consists of 73 independent samples from 68 studies (57 published papers, 11 unpublished studies), covering 20 different countries from 2011 until 2022. A complete list of the studies included in this meta-analysis is provided in the Appendix.

### 3.2 | Coding

Prior to analysis, a coding protocol was developed to reduce coding errors (Lipsey & Wilson, 2001). I coded all of the constructs used in this meta-analysis. In addition, an experienced rater separately coded 50% of the sample. Given the well-established conceptualizations and measurements of the variables of interest, the interrater reliability was quite high (97%) (Cohen's kappa; Cohen, 1960).

## 3.3 | Dependent variables

### 3.3.1 | Innovation

Previous research has not reached consensus about the operationalization of innovation. In line with the definition of innovation which comprises the development and implementation of new ideas (Van de Ven, 1986), I followed prior meta-analysis (Duran et al., 2016) and included input and output indicators of innovation. Specifically, input indicators refer to the financial investments made toward innovation, such as R&D intensity (e.g., Ham et al., 2018) as well as to the organization's orientation toward innovation, such as entrepreneurial orientation (Engelen et al., 2016; Wales et al., 2013) or firm innovative culture (e.g., Zhang et al., 2017). Output indicators refer to the ability to implement innovations (Duran et al., 2016), such as the number of new product introductions (e.g., Kashmiri et al., 2017), exploitative/exploratory innovation (e.g., Nie et al., 2022), green technology innovations (e.g., Yang et al., 2021), or number of patents (e.g., Zhang et al., 2021).

### 3.3.2 | Firm performance

Prior research has used several indicators to capture firm performance. Following prior meta-analysis (Jeong & Harrison, 2017), I included accounting-based measures, such as ROA (e.g., Reina et al., 2014), or return on equity (e.g., Bassyouny et al., 2020) and market-based measures, such as Tobin's Q (Engelen et al., 2016) or MTB value (Tang et al., 2018). If a study reported several measures, I incorporated a single average measure to avoid independency bias (Geyskens et al., 2009).

## 3.4 | Independent variable: CEO narcissism

Prior research has used different approaches to measure CEO narcissism (Cragun et al., 2020). Most of the underlying studies (37 out of 68 papers) measure CEO narcissism through the index developed by Chatterjee and Hambrick (2007) (e.g., Byun & Al-Shammari, 2021; Gerstner et al., 2013; Kashmiri et al., 2017; Zhu & Chen, 2015). The original index is a composite measure which consists of five unobtrusive indicators: size of the CEO's picture in the company's annual report, number of first-person singular pronouns used by the CEO in speeches, prominence of the CEO in press releases, CEO's relative cash compensation (salary and bonuses compared to the second highest paid executive in the

firm), and CEO's relative noncash compensation (deferred income, stock grants, and stock options compared to the second highest paid executive in the firm). In addition, seven studies in the sample used measures of the index as stand-alone measures to capture CEO narcissism, such as signature size (e.g., Ham et al., 2018; Wang et al., 2022) or singular pronoun (e.g., I, me, mine, myself) usage (e.g., Capalbo et al., 2018). Three studies used an alternative index created by Rijsenbilt and Commandeur (2013) which consists of 15 items covering, for instance, private jet use and publicity (e.g., Buchholz et al., 2018). Moreover, 17 studies in the sample used self-report measures, with most of them (14 studies) using the Narcissistic Personality Inventory (NPI) (e.g., Reina et al., 2014; Wales et al., 2013; Zhang et al., 2017) or the scale developed by Resick et al. (2009) (e.g., Nie et al., 2022). Finally, four studies used third-party ratings of video samples to score assessments of the NPI (e.g., Gupta et al., 2019; Petrenko et al., 2016).

### 3.5 | Moderating variables

#### 3.5.1 | CEO gender

CEO gender is a dichotomous variable in the primary studies. However, the underlying studies differ whether female CEOs are coded as 1 or 0 in contrast to their male counterparts. The operationalization was thus carefully checked and recoded when necessary to represent consistency (1 for female CEOs and 0 for male CEOs in this study). I included the mean value for CEO gender from the primary studies.

#### 3.5.2 | Managerial discretion

Following Crossland and Hambrick (2011), I operationalized country-level managerial discretion as an index consisting of six institutional variables that reflect two overarching country-level constructs: autonomy orientation and risk orientation. Specifically, a country's autonomy orientation reflects a country's acceptance of individual initiative and accountability and consists of two informal dimensions: *individualism* and *cultural looseness*. A country's risk orientation reflects a country's tolerance for change and encouragement of risk taking and consists of four institutions: *uncertainly tolerance*, *legal origin*, *employer flexibility*, and *ownership dispersion* (Crossland & Hambrick, 2011). To construct the index, I used Hofstede's cultural values (Hofstede, 2001) of *individualism* and *uncertainty tolerance* (uncertainty

avoidance reverse coded).<sup>3</sup> To operationalize *cultural looseness*, I used the reverse coded cultural tightness score developed by Gelfand et al. (2011). I used the Organization for Economic Cooperation and Development Corporate Governance Factbook (OECD, 2021) for information about *ownership dispersion* (Wang et al., 2019). *Legal origin* was captured by assigning countries to either have a common law tradition (coded as 1) or a civil law tradition (coded as 0) based on the data from La Porta et al. (1998). Country-level employer flexibility data were gathered from the index provided by Botero et al. (2004). Standardized values of these indicators were used to create an composite index of country-level managerial discretion (Jeong & Harrison, 2017; Wang et al., 2019). Higher values of the index reflect higher levels of country-level managerial discretion.

### 3.6 | Control variables

Following prior research (e.g., Chatterjee & Hambrick, 2011; Zhang et al., 2017), I controlled for *CEO age* (measured in years), *CEO tenure* (measured as the years in office), and *firm size* (measured as logarithm of total assets).

### 3.7 | MASEM procedures

To examine the hypothesized model, I performed MASEM following current conventions (Bergh et al., 2016; Combs et al., 2019; Viswesvaran & Ones, 1995). In contrast to traditional meta-analytic methods, MASEM allows to examine more complex structural models and thus mediation hypothesis. MASEM is conducted in two steps: First, I created a meta-analytic correlation matrix that serves as the basis for the path analysis. Specifically, I calculated meta-analytic effect sizes for each relationship in the correlation matrix following the established procedures by Hunter and Schmidt (2004). Before aggregating the average effect size across all studies, I corrected for sampling error using the inverse variance of each study as weights (Hedges & Olkin, 1985). In line with current conventions, I applied the random effects approach to synthesize effect sizes which is more conservative than the fixed effects method (Geyskens et al., 2009; Hunter & Schmidt, 2004). The fixed-effects approach builds on the assumption that variability only stems from within-study (sampling error) variance, whereas the random effects

<sup>3</sup>Crossland and Hambrick (2011) find that power distance is not associated with managerial discretion. Following their study, I did not include power distance into the index of managerial discretion.

TABLE 1 Pooled meta-analytic correlation matrix

Variables	1	2	3	4	5
1. Firm performance					
2. Innovation					
<i>r</i>	0.16				
95% CI	[0.09: 0.22]				
<i>N</i> ( <i>k</i> )	7899 (23)				
3. CEO narcissism					
<i>r</i>	0.01	0.09			
95% CI	[−0.02: 0.03]	[0.04: 0.15]			
<i>N</i> ( <i>k</i> )	20,941 (61)	11,923 (37)			
4. CEO age					
<i>r</i>	0.02	0.01	0.04		
95% CI	[0.00: 0.04]	[−0.02: 0.04]	[0.01: 0.06]		
<i>N</i> ( <i>k</i> )	9978 (37)	3850 (18)	12,109 (44)		
5. CEO tenure					
<i>r</i>	0.03	0.03	0.04	0.24	
95% CI	[0.01: 0.05]	[−0.01: 0.07]	[0.02: 0.07]	[0.17: 0.32]	
<i>N</i> ( <i>k</i> )	7212 (25)	2277 (11)	8735 (29)	7560 (26)	
6. Firm size					
<i>r</i>	0.07	0.01	0.10	0.11	0.00
95% CI	[0.02: 0.13]	[−0.03: 0.06]	[0.06: 0.10]	[0.07: 0.15]	[−0.03: 0.03]
<i>N</i> ( <i>k</i> )	16,257 (47)	8323 (23)	17,264 (53)	10,765 (38)	7363 (25)

Note: CI 95% = 95% confidence interval; harmonic mean  $N = 7524$ ;  $k$  = number of independent samples;  $N$  = total sample size;  $r$  = inverse variance weighted effect size.

model attributes variability from both within-study variance and between-study variance (Lipsey & Wilson, 2001).

In the next step, I used the meta-analytic correlation matrix as input for the path analysis conducted in Amos 28 using maximum likelihood estimation procedures (Bergh et al., 2016; Viswesvaran & Ones, 1995). Since the relationships were based on different sample sizes, I used the harmonic mean of the sample sizes across all cells ( $N = 7524$ ) for the path analysis (Bergh et al., 2016; Viswesvaran & Ones, 1995). I evaluated the model fit by calculating several fit indices in addition to chi-square test statistics (Bergh et al., 2016): root mean square error of approximation (RMSEA), standard root mean square residual (SRMR), adjusted goodness-of-fit index (AGFI), and normative fit index (NFI).

To examine the moderation hypotheses about CEO gender and managerial discretion, I performed different meta-analytical structural equation models for the different contexts. To do so, I divided all meta-analytic effect sizes of CEO narcissism into subsamples for each moderator variable (i.e., female vs. male CEOs, high vs. low managerial discretion) based on median splits (Jak &

Cheung, 2020). Based on that, I calculated different meta-analytical correlation matrices which were used as input for the different MASEMs (Tables 3, 4, 6 and 7). However, using subsamples for continuous moderators may lead to a loss of information on the moderating variable (Jak & Cheung, 2020). In a series of supplemental analysis, the moderating effects of CEO gender and managerial discretion were thus additionally examined through one-stage MASEM (OSMASEM; Jak & Cheung, 2020; Jak et al., 2021). The results are reported in the Section 4.2.

## 4 | RESULTS

### 4.1 | MASEM results

Table 1 presents the meta-analytic correlation matrix that was used as input for the structural equation model. The results show a significant positive meta-analytic correlation coefficient of the CEO narcissism–innovation relationship ( $r = 0.09$ ,  $p = 0.003$ ). Moreover, I find a significant amount of variance in this relationship

TABLE 2 Pooled MASEM path results

	Innovation	Firm performance
CEO narcissism	0.092 (0.01)***	-0.019 (0.01) <sup>†</sup>
Innovation		0.161 (0.01)***
CEO age	0.001 (0.01)	0.008 (0.01)
CEO tenure	0.022 (0.01) <sup>†</sup>	0.027 (0.01)*
Firm size	-0.005 (0.01)	0.074 (0.01)***
Harmonic mean	7524	
$X^2$ (df)	3.01 (1)	
RMSEA	0.02	
SRMR	0.01	
AGFI	0.99	
NFI	0.99	

Note: Standardized coefficients with standard errors in parentheses are reported (exact  $p$ -values are provided in the text).

Abbreviations: AGFI = adjusted goodness-of-fit index; NFI = normative fit index; RMSEA = root mean square error of approximation;

SRMR = standard root mean square residual.

<sup>†</sup> $p < 0.10$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

( $Q = 326.97$  [ $df = 36$ ],  $p = 0.000$ ). The meta-analytic effect size of CEO narcissism and firm performance is not significant ( $r = 0.01$ ,  $p = 0.700$ ), but also shows a large amount of variance ( $Q = 202.71$  [ $df = 60$ ],  $p = 0.000$ ). This indicates the presence of moderators (Lipsey & Wilson, 2001) and supports the motivation to examine contextual factors that might influence these relationships.

Table 2 presents the standardized path coefficients from MASEM after controlling for CEO age, CEO tenure, and firm size. The fit indices suggest that the hypothesized mediation model fits the data well (RMSEA = 0.02, SRMR = 0.01, AGFI = 0.99, NFI = 0.99). In addition, I followed Iacobucci et al. (2007) and tested different nested models including a direct effects and a full mediation model. The latter includes no direct effects of CEO narcissism on firm performance and presumes innovation to fully mediate the relationship between CEO narcissism and firm performance. In contrast, in the direct effects model, CEO narcissism and innovation only have direct effects on firm performance, excluding any mediating effects. The comparison of the different models shows that the partial mediation model exhibits a significantly better fit compared to the direct effects model ( $\Delta\chi^2(4) = 63.68$ ,  $p = 0.000$ ) and a marginally better fit than the full mediation model ( $\Delta\chi^2(1) = 2.72$ ,  $p = 0.098$ ).

To analyze the mediation hypothesis, I calculated the direct, indirect, and total effects of the structural model and assessed the level of significance of the mediation effects through the use of the bootstrapping method in

Amos 28 (Collier, 2020; Preacher & Hayes, 2008).<sup>4</sup> Specifically, the direct effect refers to the unmediated effect of CEO narcissism on firm performance. The indirect effect represents the product of the paths from CEO narcissism to innovation and from innovation to firm performance. The total effect reflects the sum of both the direct and the indirect effect.

Hypothesis 1 proposed that CEO narcissism has a positive indirect effect on firm performance through promoting innovation. The MASEM results in Table 2 show a significant positive effect of CEO narcissism on innovation ( $\beta = 0.092$ ,  $p = 0.000$ ) and of innovation on firm performance ( $\beta = 0.161$ ,  $p = 0.000$ ). In line with the prediction of Hypothesis 1, the results show a significant positive indirect effect ( $\beta = 0.015$ ,  $p = 0.000$ ) of CEO narcissism on firm performance through innovation.

Moreover, the MASEM results show a marginally significant negative direct effect of CEO narcissism on firm performance ( $\beta = -0.019$ ,  $p = 0.091$ ) which seems to offset the positive indirect effect on performance through innovation ( $\beta = 0.015$ ,  $p = 0.000$ ), resulting in an overall insignificant total effect of CEO narcissism on firm performance ( $\beta = -0.004$ ,  $p = 0.745$ ). While the overall relationship between CEO narcissism and firm performance is thus nonsignificant, this result masks a significant positive mediating effect through innovation as well as a significant negative direct path through which those CEOs influence firm performance. Figure 2 summarizes the path results of the pooled structural model.

Hypothesis 2a predicted that the positive relationship between CEO narcissism and innovation is weaker for female CEOs than for male CEOs. The meta-analytic correlation matrices for female and male CEOs are presented in Tables 3 and 4 respectively. The detailed path results are presented in Table 5 and show that the relationship between narcissistic female CEOs and innovation is insignificant ( $\beta = -0.001$ ,  $p = 0.960$ ) and thus significantly weaker ( $\chi^2(1) = 14.344$ ,  $p = 0.000$ )<sup>5</sup> compared to the significantly positive relationship between narcissistic male CEOs and innovation ( $\beta = 0.085$ ,  $p = 0.000$ ). These findings support Hypothesis 2a.

Hypothesis 2b predicted that the positive indirect effect of CEO narcissism on firm performance through

<sup>4</sup>As summary data (i.e., a correlation matrix) are used as input for the structural model (instead of raw data), the Monte Carlo parametric bootstrap approach was used in Amos 28 which runs a simulation that matches the summary data (for more information, see Collier, 2020).

<sup>5</sup>To analyze the statistical difference of the path coefficients, I compared an unconstrained model with a series of constraint models, each of which forced one specific path to be equal across the two groups in Amos (Byrne, 2004). Based on chi-square difference tests of the different models, the significance of the path coefficients was tested (Byrne, 2004).

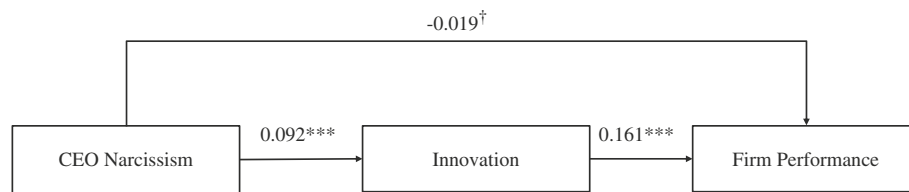


FIGURE 2 Pooled MASEM results.  $\chi^2 (df) = 3.01 (1)$ ; root mean square error of approximation = 0.02; adjusted goodness-of-fit index = 0.99; normative fit index = 0.99; standardized root mean square residual = 0.01.  $^\dagger p < 0.10$ ;  $*p < 0.05$ ;  $**p < 0.01$ ;  $***p < 0.001$ .

TABLE 3 Meta-analytic correlation matrix: Female CEOs

Variables	1	2	3	4	5
1. Firm performance					
2. Innovation					
<i>r</i>	0.16				
95% CI	[0.09: 0.22]				
<i>N (k)</i>	7899 (23)				
3. CEO narcissism					
<i>r</i>	0.03	0.00			
95% CI	[-0.03: 0.08]	[-0.09: 0.08]			
<i>N (k)</i>	2768 (11)	1219 (7)			
4. CEO age					
<i>r</i>	0.02	0.01	0.04		
95% CI	[0.00: 0.04]	[-0.02: 0.04]	[0.00: 0.08]		
<i>N (k)</i>	9978 (37)	3850 (18)	2673 (11)		
5. CEO tenure					
<i>r</i>	0.03	0.03	0.01	0.24	
95% CI	[0.01: 0.05]	[-0.01: 0.07]	[-0.04: 0.06]	[0.17: 0.32]	
<i>N (k)</i>	7212 (25)	2277 (11)	1471 (4)	7560 (26)	
6. Firm size					
<i>r</i>	0.07	0.01	0.01	0.11	0.00
95% CI	[0.02: 0.13]	[-0.03: 0.06]	[-0.05: 0.07]	[0.07: 0.15]	[-0.03: 0.03]
<i>N (k)</i>	16,257 (47)	8323 (23)	2203 (8)	10,765 (38)	7363 (25)

Note: CI 95% = 95% confidence interval; harmonic mean  $N = 3491$ ;  $k$  = number of independent samples;  $N$  = total sample size;  $r$  = inverse variance weighted effect size.

promoting innovation is weaker for female CEOs than for male CEOs. The MASEM results show that the positive indirect effect of CEO narcissism on firm performance through innovation is insignificant for narcissistic female CEOs ( $\beta = 0.000$ ,  $p = 0.946$ ) and thus significantly weaker ( $\chi^2(2) = 14.344$ ,  $p = 0.001$ ) compared to the significantly positive indirect effect of their male counterparts ( $\beta = 0.014$ ,  $p = 0.000$ ). Thus, Hypothesis 2b is supported.

Interestingly, however, the MASEM results further show that narcissistic female CEOs have a marginally significantly positive direct effect on firm performance ( $\beta = 0.028$ ,  $p = 0.088$ ), resulting in a marginally

significantly positive total effect ( $\beta = 0.028$ ,  $p = 0.098$ ). Instead, narcissistic male CEOs have a significant negative direct effect on firm performance ( $\beta = -0.055$ ,  $p = 0.000$ ; difference compared to female CEOs:  $\chi^2(1) = 13.835$ ,  $p = 0.000$ ), resulting in a significant negative total effect on firm performance ( $\beta = -0.041$ ,  $p = 0.004$ ; difference compared to female CEOs:  $\chi^2(3) = 28.192$ ,  $p = 0.000$ ). Figure 3 summarizes the path results.

Hypothesis 3a predicted that the positive relationship between CEO narcissism and innovation is stronger in countries characterized by high levels of managerial



TABLE 4 Meta-analytic correlation matrix: Male CEOs

Variables	1	2	3	4	5
1. Firm performance					
2. Innovation					
<i>r</i>	0.16				
95% CI	[0.09: 0.22]				
<i>N</i> ( <i>k</i> )	7899 (23)				
3. CEO narcissism					
<i>r</i>	−0.03	0.09			
95% CI	[−0.06: 0.01]	[0.02: 0.16]			
<i>N</i> ( <i>k</i> )	4650 (11)	2000 (6)			
4. CEO age					
<i>r</i>	0.02	0.01	0.02		
95% CI	[0.00: 0.04]	[−0.02: 0.04]	[−0.03: 0.08]		
<i>N</i> ( <i>k</i> )	9978 (37)	3850 (18)	3441 (9)		
5. CEO tenure					
<i>r</i>	0.03	0.03	0.06	0.24	
95% CI	[0.01: 0.05]	[−0.01: 0.07]	[0.01: 0.10]	[0.17: 0.32]	
<i>N</i> ( <i>k</i> )	7212 (25)	2277 (11)	2344 (5)	7560 (26)	
6. Firm size					
<i>r</i>	0.07	0.01	0.14	0.11	0.00
95% CI	[0.02: 0.13]	[−0.03: 0.06]	[0.05: 0.22]	[0.07: 0.15]	[−0.03: 0.03]
<i>N</i> ( <i>k</i> )	16,257 (47)	8323 (23)	3659 (9)	10,765 (38)	7363 (25)

Note: CI 95% = 95% confidence interval; harmonic mean *N* = 4528; *k* = number of independent samples; *N* = total sample size; *r* = inverse variance weighted effect size.

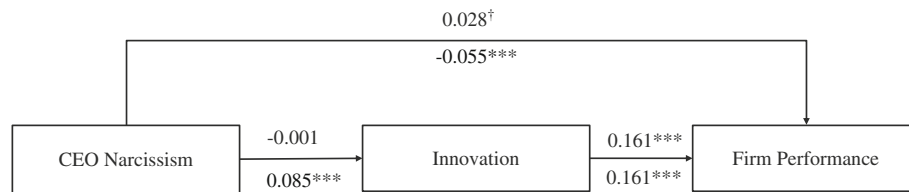
TABLE 5 Meta-analytical structural equation modeling path results: CEO gender

	Narcissistic female CEOs		Narcissistic male CEOs	
	Innovation	Firm performance	Innovation	Firm performance
CEO narcissism	−0.001 (0.02)	0.028 (0.02) <sup>†</sup>	0.085 (0.02) <sup>***</sup>	−0.055 (0.02) <sup>***</sup>
Innovation		0.161 (0.02) <sup>***</sup>		0.161 (0.02) <sup>***</sup>
CEO age	0.012 (0.02)	−0.001 (0.02)	0.002 (0.02)	0.011 (0.02)
CEO tenure	0.027 (0.02)	0.019 (0.02)	0.025 (0.02)	0.019 (0.02)
Firm size	0.008 (0.02)	0.062 (0.02) <sup>***</sup>	−0.002 (0.02)	0.069 (0.02) <sup>***</sup>
Harmonic mean	3491		4528	
$\chi^2$ ( <i>df</i> )	2.18 (1)		1.81 (1)	
RMSEA	0.02		0.01	
SRMR	0.01		0.01	
AGFI	0.99		0.99	
NFI	0.99		0.99	

Note: Standardized coefficients with standard errors in parentheses are reported (exact *p*-values are provided in the text).

Abbreviations: AGFI = adjusted goodness-of-fit index; NFI = normative fit index; RMSEA = root mean square error of approximation; SRMR = standard root mean square residual.

<sup>†</sup>*p* < 0.10; \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001.



**FIGURE 3** Meta-analytical structural equation modeling results for CEO gender. The coefficient above the line represents the group for narcissistic female CEOs; the coefficient below the line represents the group for narcissistic male CEOs. † $p < 0.10$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

**TABLE 6** Meta-analytic correlation matrix: High managerial discretion

Variables	1	2	3	4	5
1. Firm performance					
2. Innovation					
<i>r</i>	0.16				
95% CI	[0.09: 0.22]				
<i>N</i> ( <i>k</i> )	7899 (23)				
3. CEO narcissism					
<i>r</i>	-0.02	0.14			
95% CI	[-0.05: 0.02]	[0.08: 0.19]			
<i>N</i> ( <i>k</i> )	14,589 (35)	7059 (18)			
4. CEO age					
<i>r</i>	0.02	0.01	0.05		
95% CI	[0.00: 0.04]	[-0.02: 0.04]	[0.03: 0.08]		
<i>N</i> ( <i>k</i> )	9978 (37)	3850 (18)	9033 (28)		
5. CEO tenure					
<i>r</i>	0.03	0.03	0.05	0.24	
95% CI	[0.01: 0.05]	[-0.01: 0.07]	[0.02: 0.08]	[0.17: 0.32]	
<i>N</i> ( <i>k</i> )	7212 (25)	2277 (11)	7280 (22)	7560 (26)	
6. Firm size					
<i>r</i>	0.07	0.01	0.10	0.11	0.00
95% CI	[0.02: 0.13]	[-0.03: 0.06]	[0.06: 0.14]	[0.07: 0.15]	[-0.03: 0.03]
<i>N</i> ( <i>k</i> )	16,257 (47)	8323 (23)	13,430 (32)	10,765 (38)	7363 (25)

Note: CI 95% = 95% confidence interval; harmonic mean  $N = 7010$ ;  $k$  = number of independent samples;  $N$  = total sample size;  $r$  = inverse variance weighted effect size.

discretion. The meta-analytic correlation matrices for high and low managerial discretion are presented in Tables 6 and 7, respectively. The detailed path results are presented in Table 8 and show that narcissistic CEOs engage significantly ( $\chi^2(1) = 38.308$ ,  $p = 0.000$ ) more in innovation when they operate in environments providing them with high managerial discretion ( $\beta = 0.138$ ,  $p = 0.000$ ), as compared to environments providing them with low managerial discretion ( $\beta = 0.019$ ,  $p = 0.202$ ). This finding supports Hypothesis 3a.

Hypothesis 3b predicted that the positive indirect effect of CEO narcissism on firm performance through

promoting innovation is stronger in countries characterized by high levels of managerial discretion. In line with this prediction, the positive indirect effect of CEO narcissism on firm performance through innovation is significantly stronger ( $\chi^2(2) = 38.44$ ,  $p = 0.000$ ) in countries characterized by high managerial discretion ( $\beta = 0.023$ ,  $p = 0.000$ ) than in countries characterized by low managerial discretion ( $\beta = 0.003$ ,  $p = 0.197$ ). Thus, Hypothesis 3b is supported.

However, the MASEM results further show that the direct effect of CEO narcissism on firm performance is significantly negative in countries characterized by high

TABLE 7 Meta-analytic correlation matrix: Low managerial discretion

Variables	1	2	3	4	5
1. Firm performance					
2. Innovation					
<i>r</i>	0.16				
95% CI	[0.09: 0.22]				
<i>N</i> ( <i>k</i> )	7899 (23)				
3. CEO narcissism					
<i>r</i>	0.04	0.02			
95% CI	[0.00: 0.08]	[−0.04: 0.08]			
<i>N</i> ( <i>k</i> )	5932 (25)	4295 (17)			
4. CEO age					
<i>r</i>	0.02	0.01	−0.01		
95% CI	[0.00: 0.04]	[−0.02: 0.04]	[−0.02: 0.05]		
<i>N</i> ( <i>k</i> )	9978 (37)	3850 (18)	2927 (15)		
5. CEO tenure					
<i>r</i>	0.03	0.03	0.03	0.24	
95% CI	[0.01: 0.05]	[−0.01: 0.07]	[−0.02: 0.08]	[0.17: 0.32]	
<i>N</i> ( <i>k</i> )	7212 (25)	2277 (11)	1455 (7)	7560 (26)	
6. Firm size					
<i>r</i>	0.07	0.01	0.07	0.11	0.00
95% CI	[0.02: 0.13]	[−0.03: 0.06]	[0.01: 0.14]	[0.07: 0.15]	[−0.03: 0.03]
<i>N</i> ( <i>k</i> )	16,257 (47)	8323 (23)	3265 (19)	10,765 (38)	7363 (25)

Note: CI 95% = 95% confidence interval; harmonic mean *N* = 4486; *k* = number of independent samples; *N* = total sample size; *r* = inverse variance weighted effect size.

TABLE 8 Meta-analytical structural equation modeling path results: Country-level managerial discretion

	High managerial discretion		Low managerial discretion	
	Innovation	Firm performance	Innovation	Firm performance
CEO narcissism	0.138 (0.01)***	−0.046 (0.01)***	0.019 (0.02)	0.034 (0.02)*
Innovation		0.161 (0.01)***		0.158 (0.02)***
CEO age	−0.001 (0.01)	0.010 (0.01)	0.004 (0.02)	0.010 (0.02)
CEO tenure	0.019 (0.01)	0.028 (0.01)*	0.024 (0.02)	0.025 (0.02) <sup>†</sup>
Firm size	−0.009 (0.01)	0.067 (0.01)***	0.003 (0.02)	0.055 (0.02)***
Harmonic mean	7010		4486	
$\chi^2$ ( <i>df</i> )	2.80 (1)		1,79 (1)	
RMSEA	0.02		0.01	
SRMR	0.01		0.01	
AGFI	0.99		0.99	
NFI	0.99		0.99	

Note: Standardized coefficients with standard errors in parentheses are reported (exact *p*-values are provided in the text).

Abbreviations: AGFI = adjusted goodness-of-fit index; NFI = normative fit index; RMSEA = root mean square error of approximation; SRMR = standard root mean square residual.

<sup>†</sup>*p* < 0.10; \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001.

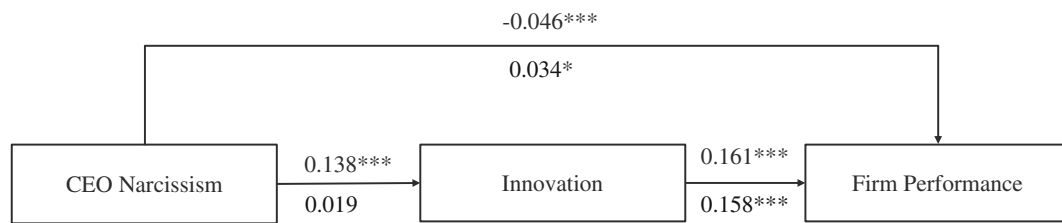


FIGURE 4 MASEM results for managerial discretion. The coefficient above the line represents the group in high managerial discretion countries; the coefficient below the line represents the group in low managerial discretion countries.  $^{\dagger}p < 0.10$ ;  $*p < 0.05$ ;  $**p < 0.01$ ;  $***p < 0.001$ .

TABLE 9 Summary of mediation results

Path	Direct effects on firm performance	Indirect effects on firm performance via innovation	Total effects on firm performance
CEO narcissism – firm performance (pooled)	$-0.019^{\dagger}$	$0.015^{***}$	$-0.004$
CEO narcissism – firm performance (female)	$0.028^{\dagger}$	$0.000$	$0.028^{\dagger}$
CEO narcissism – firm performance (male)	$-0.055^{***}$	$0.014^{***}$	$-0.041^*$
CEO narcissism – firm performance (high discretion)	$-0.046^{***}$	$0.023^{***}$	$-0.023^{\dagger}$
CEO narcissism – firm performance (low discretion)	$0.034^*$	$0.003$	$0.037^*$

Note: Standardized coefficients are reported. Number of bootstrap samples = 5000.

$^{\dagger}p < 0.10$ ;  $*p < 0.05$ ;  $**p < 0.01$ ;  $***p < 0.001$ .

managerial discretion ( $\beta = -0.046$ ,  $p = 0.000$ ), resulting in a marginal significant negative total effect of CEO narcissism on firm performance ( $\beta = -0.023$ ,  $p = 0.054$ ). By contrast, I find that the direct effect of CEO narcissism on firm performance is significantly positive ( $\beta = 0.034$ ,  $p = 0.025$ ) in countries characterized by low managerial discretion (difference to high discretion context:  $X^2(1) = 17.32$ ,  $p = 0.000$ ), resulting in a significant positive total effect of CEO narcissism on firm performance ( $\beta = 0.037$ ,  $p = 0.015$ ; difference compared to high discretion context:  $\chi^2(3) = 56.048$ ,  $p = 0.000$ ). The path results are summarized in Figure 4 and the results of the mediation analysis are summarized in Table 9.

## 4.2 | Supplemental analysis

### 4.2.1 | Post hoc meta-regression

The relationships between CEO narcissism and innovation as well as between CEO narcissism and firm performance might be influenced by the characteristics of the underlying studies. To account for that, I ran a series of post hoc meta-analytic regression analyses which uses the control variables as independent variables and the effect sizes weighted by the inverse variance as the dependent variable to

explain heterogeneity (Hedges & Olkin, 1985). Given that several studies in the sample used multiple operationalizations of performance and innovation, I followed recent recommendations (Cheung, 2019; Fernández-Castilla et al., 2020) and employed a multilevel approach to account for the fact that multiple effect sizes are nested within studies through a multilevel random effects meta-regression using the *metafor* package (Viechtbauer, 2010) in R. In the meta-regressions, I controlled for differences in the *CEO narcissism operationalization* by differentiating between studies using the unobtrusive narcissism index (1) versus other measures (0). Moreover, I controlled for differences in the *innovation operationalization* by differentiating between innovation input (0) and innovation output (1) indicators, as well as for different *performance operationalizations* by distinguishing between accounting (0) and market-based measures (1). To control for different research designs, I included a dummy variable *method* which was coded as (1) for studies using panel data and (0) otherwise. To account for different methodological approaches addressing potential endogeneity concerns in the underlying studies, I included a dummy variable *endogeneity control* which was coded as (1) when primary studies conducted approaches that address such concerns (i.e., instrumental variables) and as (0) otherwise. To control for the potential of publication bias (Rosenthal, 1979), I

TABLE 10 Post hoc meta-regression results

	Innovation		Firm performance	
	Model (1)	Model (2)	Model (3)	Model (4)
Managerial discretion		0.060 (0.03)*		-0.07 (0.03)*
<i>Controls</i>				
CEO narcissism operationalization	0.054 (0.05)	0.040 (0.05)	0.021 (0.02)	0.007 (0.02)
Innovation operationalization	0.023 (0.04)			
Performance operationalization			-0.019 (0.02)	
Method	0.011 (0.058)	-0.035 (0.06)	0.047 (0.05)	0.056 (0.03)*
Endogeneity control	0.026 (0.06)	0.008 (0.04)	0.004 (0.03)	0.003 (0.02)
Publication status	0.052 (0.06)	0.084 (0.06)	0.046 (0.03)	0.017 (0.02)
Year	-0.006 (0.008)	-0.004 (0.01)	0.004 (0.01)	0.004 (0.00)
<i>k</i>	37	36	61	60
$Q_{\text{explained}}$	5.54	11.87 <sup>†</sup>	6.70	15.15*
$Q_{\text{residual}}$	115048***	101.81	221.69***	120.50***
Log-likelihood	29.61	25.91	78.61	62.39
AIC	-41.22	-33.82	-139.21	-106.79
BIC	-25.58	-19.57	-117.02	-87.95

Note: Unstandardized beta-coefficients are reported with standard errors in parentheses.

Abbreviations: AIC = Akaike information criterion; BIC = Bayesian information criterion;  $k$  = number of independent samples;  $Q_{\text{explained}}$  = homogeneity analysis results of the model;  $Q_{\text{residual}}$  = residual variance.

Models 1 and 3 control for different operationalizations of innovation and firm performance respectively. Models 2 and 4 present results from the country-level multilevel meta-regression.

<sup>†</sup> $p < 0.10$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

included a dummy variable *publication status*, denoting whether a study was published (1) or not (0). The *year of publication* was included to account for time-related effects. The results are presented in Table 10 and show that study characteristics, such as publication status, year of publication, and different operationalizations of narcissism as well as of innovation and performance have no significant influence on the meta-analytic effect sizes. Only the relationship between CEO narcissism and firm performance is stronger for studies using panel data.

#### 4.2.2 | Post hoc multilevel meta-regression: Countries

The studies in the database of this meta-analysis are also nested within countries. While it is not possible to analyze multilevel MASEMs, I ran several multilevel meta-regressions which can account for the fact that studies are nested within countries (Hox, 2010; Van den Noortgate et al., 2013). The results are shown in Table 10 (Models 2 and 4) and confirm that managerial discretion moderates the effects of CEO narcissism on innovation (Model 2:  $\beta = 0.060$ ,  $p = 0.041$ ) as well as on firm performance (Model 6:  $\beta = -0.07$ ,  $p = 0.034$ ).

#### 4.2.3 | Endogeneity

To address potential endogeneity concerns, I ran a supplemental MASEM which includes only studies on CEO narcissism that account for endogeneity in their research designs (e.g., Chatterjee & Hambrick, 2011; Petrenko et al., 2016). The results show that the significant positive direct effect of CEO narcissism on innovation ( $\beta = 0.13$ ,  $p = 0.000$ ) is slightly, but not significantly stronger ( $\chi^2(1) = 2.03$ ,  $p = 0.156$ ) compared to the main results (Table 6:  $\beta = 0.09$ ,  $p = 0.000$ ). The results also show no significant difference ( $\chi^2[2] = 2.33$ ,  $p = 0.362$ ) between the indirect effect of CEO narcissism on firm performance through innovation in this supplemental analysis ( $\beta = 0.02$ ,  $p = 0.000$ ) compared to the main analysis ( $\beta = 0.02$ ,  $p = 0.000$ ). While these results indicate that there is no significant difference for the main analysis, it is, however, not possible for meta-analytic methods to further address this concern which is also mentioned in the limitations.

#### 4.2.4 | Post hoc OSMASEM

Using subsamples for continuous moderators may lead to a loss of information on the moderating variable (Jak &



Cheung, 2020). I thus additionally performed OMASEM (Jak et al., 2021; Jak & Cheung, 2020) which allows to analyze continuous moderators in the MASEM.<sup>6</sup> Specifically, I used “webMASEM” which is built on functions from the metaSEM package (Cheung, 2015) and the semPlot package (Epskamp, 2015) and explained in the recent paper by Jak et al. (2021). The results confirm that the relationship between CEO narcissism and innovation (H2a) is significantly ( $p = 0.025$ ) moderated by CEO gender: the regression coefficient of the moderator on the parameter equals  $-0.05$ , meaning that the direct effect of CEO narcissism on innovation is 0.05 smaller for female than for male CEOs. Regarding H3a, the results confirm that the relationship between CEO narcissism and innovation is significantly ( $p = 0.018$ ) moderated by managerial discretion: the regression coefficient of the moderator on the parameter equals 0.10, meaning that the direct effect of CEO narcissism on innovation is 0.10 larger when managerial discretion is high than when it is low.

## 5 | DISCUSSION

Although research on the performance implications of CEO narcissism has received significant attention from scholars, the literature is characterized by distinct theoretical views and equivocal empirical research findings. To help advance this discussion, I build on upper echelon theory (Hambrick & Mason, 1984) to theorize that innovation is an important yet overlooked mediating mechanism through which narcissistic CEOs may positively influence firm performance. In line with the predominant view that narcissistic CEOs are prone to engage in risk-taking strategies (e.g., Gerstner et al., 2013; Kashmiri et al., 2017; Wales et al., 2013), the results from MASEM confirm a positive relationship between narcissistic CEOs and innovation. The results further support the theorized mediation model which predicts that narcissistic CEOs stimulate innovation, which, in turn, has a positive influence on firm performance. This finding indicates that CEO narcissism is not detrimental per se, but rather supports that narcissistic CEOs may have benefits or “upsides” for firms through stimulating creativity and innovation (Kashmiri et al., 2017; Smith et al., 2018; Wales et al., 2013).

However, a more comprehensive investigation through MASEM reveals that this is only half of the story. The results from the partial mediation model further show a negative direct effect of CEO narcissism on firm performance, indicating that those executives seem to engage in other actions which harm firm performance.

While the overall influence of CEO narcissism on firm performance is thus nonsignificant, the structural model uncovers that narcissistic CEOs have indeed a positive indirect effect on firm performance through stimulating innovation, which is, however, canceled out by their other detrimental actions.

A more nuanced investigation of the moderating role of gender differences provides further insights into the influence narcissistic CEOs have on innovation and thus, in turn, on firm performance. In line with congruity theory (Eagly & Karau, 2002), the results show that narcissistic female CEOs engage less in innovation compared to their male counterparts. This finding is also in line with prior findings that narcissistic female CEOs engage less in risk-taking in general (Ingersoll et al., 2019). While narcissistic female CEOs tend to forgo innovation benefits, the results from MASEM further uncover that they seem to engage in other beneficial actions for firm performance which results in a positive overall performance effect. Their narcissistic male counterparts, instead, depict a negative influence on firm performance, indicating that they engage in other rather detrimental actions which harm firm performance. The MASEM results show that these detrimental actions do not only offset their benefits resulting from innovation, but even harm overall firm performance.

Finally, the results confirm that the influence narcissistic CEOs have on innovation, and thus, in turn, on firm performance is moderated by different levels of managerial discretion. In line with the theoretical predictions of this study, the findings demonstrate that narcissistic CEOs engage more innovation in high discretion than in low discretion contexts. However, a more comprehensive investigation through MASEM shows that not only the upsides (resulting from innovation), but also the downsides (i.e., other detrimental actions) of narcissistic CEOs for firm performance increase in contexts that provide these CEOs with more leeway to make idiosyncratic decisions. Overall, the findings show that narcissistic CEOs have a negative effect on firm performance in contexts characterized by high managerial discretion. In low discretion contexts, instead, the MASEM results show a positive effect of narcissistic CEO on firm performance, indicating that they engage in other beneficial strategies (in addition to innovation) which result in a positive overall effect on for performance.

### 5.1 | Theoretical implications

This study contributes to upper echelon research on CEO narcissism in the following ways. First, this study contributes to the controversial discussion in the literature about

<sup>6</sup>For more information, see Jak et al. (2021).

the role of CEO narcissism for firm performance (Cragun et al., 2020; Smith et al., 2018) by theorizing and empirically demonstrating why they can be beneficial for firm performance. Specifically, by building on upper echelon theory (Hambrick & Mason, 1984), I integrated insights from the separate research streams either focusing on innovation or on firm performance in isolation (Cragun et al., 2020) to theorize a mediating model which predicts that narcissistic CEOs can be beneficial for firm performance through stimulating innovation. The findings of this study support the idea that innovation represents an important underlying mechanism of how CEO narcissism affects firm performance. Future research is needed to further unravel the underlying mechanisms (e.g., mergers and acquisitions, diversities, internationalization) that help explain the complex relationship between CEO narcissism and firm performance. Another important implication resulting from the finding of the potential harmful effects of narcissistic CEOs on performance is that future research needs to identify helpful mechanisms that prevent firms from the downsides of these CEOs. For instance, future research could examine certain top management team characteristics, such as diversity, that might help to challenge the views and decisions of narcissistic CEOs and thus to improve the decision-making processes. In addition, useful governance mechanisms provide another interesting area for future research to help explain how firms can benefit from narcissistic CEOs while limiting their downsides.

Second, this study extends prior research on CEO narcissism by building on role congruity theory (Eagly & Karau, 2002) to provide novel insights into the moderating influence of CEO gender on the effect CEO narcissism has on innovation and ultimately performance. While prior research on CEO narcissism has typically neglected to analyze the moderating role of gender differences (Cragun et al., 2020; Ingersoll et al., 2019), the results from this study highlight that the consequences of narcissistic CEOs substantially differ by gender. This finding provides several implications for future research to better understand how the strategic actions and thus, in turn, the performance outcomes of narcissistic CEOs differ depending on gender. What are the (different) strategic decision-making processes that lead to these distinct outcomes? Moreover, it would be interesting to understand how narcissistic female CEOs behave in different discretion contexts.

Third, this study contributes to the literature on CEO narcissism by highlighting that the innovation and firm performance implications of those executives depend on the level of managerial discretion (Crossland & Hambrick, 2011). While it is quite established in the literature that CEOs have a larger influence on firm strategies

and outcomes when they have a greater amount of managerial discretion (Hambrick & Finkelstein, 1987), little is known about the role country-level managerial discretion has for the consequences of CEO narcissism. Building on the work by Crossland and Hambrick (2007, 2011), this study provides evidence from 20 different countries that the discretion provided by institutional environments can substantially influence the strategies and outcomes of narcissistic CEOs. Together, these findings also address the recent call by Cragun et al. (2020) to identify boundary conditions that help explain the mixed findings in prior research on CEO narcissism.

## 5.2 | Managerial implications

The results also provide several managerial implications. First, they indicate that narcissistic CEOs may be beneficial for firms by promoting innovation. However, the results further caution that CEOs with narcissistic characteristics also come with substantial dark sides that can harm overall firm performance. In particular, the results show that narcissistic CEOs seem to engage in other harmful decisions for firm performance which tend to completely offset the positive performance implications resulting from pursuing innovation. While narcissistic CEOs are typically famous for the boldness and visionary thinking (Maccoby, 2004), the findings from this study suggest that they can be a double-edged sword for firms and their performance. In contexts characterized by high-managerial discretion, the results of this study highlight that the performance disadvantages of narcissistic CEOs resulting from their detrimental actions are even larger than their benefits resulting from innovation, so that they might ultimately hurt overall firm performance.

The results from this study thus emphasize that firms should be careful when recruiting narcissistic CEOs. Specifically, firms should assess applicants more comprehensively to identify narcissistic personalities. Given that narcissistic CEOs have been proven to be exceptionally successful (e.g., Steve Jobs or Elon Musk), I do not suggest to refrain from recruiting these personalities. Rather, I emphasize the need for firms to carefully monitor the strategic actions of narcissistic CEOs to prevent firms from the dark sides that those CEOs bring with them. This is especially important in contexts which provide executives with a greater decision latitude. The results further indicate that gender differences influence the consequences of narcissistic CEOs and that firms might thus need different governance mechanisms for female than for male CEOs. Specifically, narcissistic female CEOs need more support to engage in innovation as the results indicate that they forgo these performance benefits. For instance, it might be

helpful, to increase diversity among the top management team and the board to reduce perceptions of role incongruity. Narcissistic male CEOs, instead, provide performance benefits for their firms resulting from innovation. However, they seem to engage in other very detrimental strategic actions, which ultimately hurt overall firm performance. This finding cautions firms to particularly monitor the strategic actions associated with them to prevent the dark sides.

### 5.3 | Limitations and future research directions

While this study provides a first step toward identifying a crucial mechanism (i.e., innovation) through which CEO narcissism influences firm performance, future research is needed to investigate the causal nature of these relationships. While I controlled for the research design of the underlying studies and thus the potential of endogeneity affecting the results through supplemental analysis, it is, however, not possible to empirically address causality concerns in meta-analysis with methodological approaches available in primary empirical studies (e.g., instrumental variables). Hence, as with any other meta-analysis/MASEM, the potential of endogeneity affecting the results cannot be ruled out (Bergh et al., 2016; Connelly et al., 2015), so that the results of this study have thus to be seen in light of this limitation. Future studies using, for instance, experimental designs, would be helpful to increase our understanding.

In addition, future studies could build on the findings of this study to examine the role of narcissistic CEOs on different types of innovation. Given that meta-analytic studies are constrained by the nature and content of the underlying primary studies, it was not able to further investigate for instance exploratory versus exploitative innovation or ambidexterity (e.g., Jansen et al., 2006). Finally, while I ran post hoc multilevel meta-regressions to account for the fact that the studies are nested within countries (Fernández-Castilla et al., 2020), it is not possible to run multilevel MASEMs. Hence, future research is necessary to examine the structural model in a multilevel setting (Hox, 2013). Finally, to advance the literature on CEO narcissism, comparing their strategic mechanisms with those pursued by other CEO personality traits (e.g., humility) represents another interesting area for future research that might help to contribute to our understanding of executive personality for firms (see You et al., 2020).

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I have read and agreed to the Committee on Publication Ethics (COPE) international standards for authors.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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