



The influence of CEO power on explorative and exploitative organizational innovation☆☆☆



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ABSTRACT

Despite the growing research evidence on the effect of powerful CEOs on organizational outcomes, their role in shaping the firm's innovation agenda has received little scholarly attention. This study examines the effect of CEO power on exploratory and exploitative innovation. Drawing from core arguments of Behavioral Agency Theory, this study proposes that firms led by powerful CEOs are likely to pursue more exploratory and less exploitative innovations. Furthermore, these relationships are significantly strengthened by CEO Outsider Status. Using data from 150 U.S. firms, the results reveal a significant positive relationship between CEO power and explorative innovation. Contrary to predictions, firms led by powerful CEOs engage in more not less exploitative innovation when the CEO is appointed from outside the firm. Overall, the findings provide a more nuanced explanation of the link between CEO power and organizational innovation. Implications for research and practice are discussed.

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1. Introduction

Do powerful CEOs influence corporate strategies and organizational performance? If so, in what ways? Are powerful CEOs attracted to risky and novel corporate strategies? Alternatively, do they instead prefer more measured and conservative actions? These questions continue to attract both scholarly and practitioner attention. The popular business press is ripe with discussions on powerful CEOs and their daring corporate actions (Helft, 2014). Corporate governance researchers have examined this issue under the broader “executive effects” literature using the upper echelons research tradition (Crossland, Zyung, Hiller, & Hambrick, 2014). More specifically, scholarly discussion on this topic has empirically examined the link between CEO power and organizational performance (Adams, Almeida, & Ferreira, 2005; Lee, Park, & Park, 2015; Tang, Crossan, & Rowe, 2011). Recent studies have also identified a significant relationship between CEO power and the choice

of various corporate strategies such as mergers and acquisitions (Brown & Sarma, 2007; Chikh & Filbien, 2011). So far, growing empirical evidence of the influence of CEO power on both the choice of corporate strategies and organizational performance exists (Tang et al., 2011).

Despite the mounting evidence on the effect of powerful CEOs on organizational decision-making and performance, their role in shaping the firm's innovation agenda is less clear. While current scholarly work has shown a significant link between powerful CEOs and the choice of certain corporate strategies, neither the corporate governance nor the organizational innovation literatures specifically outline whether and how powerful CEOs influence organizational innovation activities. Exploring the role of CEO power on organizational innovation is important for several reasons: first, CEOs hold a prominent structural position in the upper echelons and play a critical role in shaping strategic decisions (Crossland et al., 2014). Second, while other top management team members and board of directors are also involved in strategic decision-making, CEOs are expected to maintain an active and aggressive role in strategy formulation. CEOs are often expected by key stakeholders to be the principal architects of the firm's innovation agenda (Berger, Dutta, Raffel, & Samuels, 2016). The purpose of this study is to explore the link between CEO power and the choice of organizational innovation strategies. Specifically, the relationship between CEO power and two types of organizational innovation strategies (exploratory and exploitative innovation) is empirically investigated (Mueller, Rosenbusch, & Bausch, 2013). Drawing from core arguments of Behavioral Agency Theory (Wiseman & Gomez-Mejia, 1998; Pepper

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& Gore, 2015), the differential impacts of powerful CEOs on organizational innovation activity is developed and empirically tested to extend the theory's key tenets to innovation research with an emphasis on risk-taking tendencies that surround innovation strategies. The current research proposes that firms led by powerful CEOs are more likely to pursue exploratory as opposed to exploitative innovations. Furthermore, this study argues that the link between CEO power and organizational innovation strategies is significantly strengthened when the CEO was recruited from outsider of the firm.

This study makes a number of contributions to the on-going scholarly research on the role of strategic leadership and firm innovation. First, this study improves scholarly understanding of the role these key leaders play in shaping the firm's innovation agenda. Surprisingly, relatively little is known on how powerful CEOs impact organizational innovation (Berger et al., 2016). Second, this study contributes to research on strategic leadership and executive succession by highlighting the important role of CEO outsider/insider status in shaping the choice of organizational innovation strategies. Specifically, drawing from insights from behavioral agency theory and strategic leadership literature, the current study explores how the risk-taking tendencies of outsider CEOs might influence the choice of organizational innovation strategies. In doing so, this research extends the current work in corporate governance (Karavli, 2007) and human capital transfer (Hamori & Koyuncu, 2015) literatures by exploring the implications of executive succession on organizational innovation. Additionally, this work provides practical insights on how the executive succession and selection process might be considered in developing the firm's innovation agenda. In the following section, the major findings on CEO power and organizational outcomes as well as executive determinants of organizational innovation are reviewed.

2. Theory and hypothesis development

2.1. Executive predictors of organizational innovation

Innovation is pertinent to firms as a strategic tool used to strengthen their competitive position (Crossan & Apaydin, 2010). This study adopts Damanpour (1991)'s definition of innovation as: "innovation is a means of changing an organization, whether as a response to changes in its internal or external environment or as a preemptive action taken to influence an environment" (p. 556). Consistent with previous studies (e.g. He & Wong, 2004; Jansen, Van Den Bosch, & Volberda, 2006), innovation is classified as either explorative or exploitative.¹ This classification addresses whether the innovation speaks to the needs of existing customers (i.e. exploitative) or whether the innovation is designed for completely new target markets (i.e. explorative) (Benner & Tushman, 2003). Products that require a departure from existing products or activities are those that result from new knowledge and hence considered explorative (March, 1991; Levinthal & March, 1993). Exploratory activities are captured by "terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, and innovation" (March, 1991, p. 71). In contrast, products that meet the needs of existing customers and result from present knowledge are exploitative by nature (March, 1991; Levinthal & March, 1993). Exploitative activities are captured by "terms such as refinement, choice, production, efficiency, selection, implementation, and execution" (March, 1991, p. 71). These two activities draw upon unique resources and processes thereby producing different outputs that in turn, differentially impact firm performance (O'Reilly & Tushman, 2013).

¹ The term innovation has been conceptualized in various ways including the classic Schumpeterian view of innovation as creative destruction (Schumpeter, 1934) as well as recent conceptualizations as incremental vs. radical, process vs. product (Damanpour, 1991; Crossan & Apaydin, 2010). However, the current conceptualization of innovation as exploratory and exploitative innovation has also been extensively employed in the innovation and corporate governance literatures. This approach was chosen to help address the specific research questions.

Because of the differences in expected outcomes, research argues that exploration and exploitation do not carry the same levels of risk and consequently, require different investments (He & Wong, 2004). Considering the *ex-ante* risk of each type of innovation allows for better assessment of the risk threshold executives perceive as allowable in their strategic decisions given their level of power. That said, explorative innovations are characterized as riskier than exploitative innovations due to their outcome's uncertainty. Consistent with the innovation and organizational learning literature, firms that engage in *both* exploration and exploitation are more likely to ensure optimal firm performance² (O'Reilly & Tushman, 2013). Firms that solely focus on either exploration or exploitation risk not being able to adapt to environmental changes (O'Reilly & Tushman, 2013). As such, a firm's long-term survival depends on its ability to "engage in enough exploitation to ensure the organization's current viability and to engage in enough exploration to ensure future viability" (Levinthal & March, 1993, p. 105). However, powerful executives tend to disproportionately focus organizational effort on specific strategies they believe will provide the greatest chance for creating a sustainable competitive advantage and high performance (Jansen et al., 2006). Research supports the notion that executives significantly influence strategic decisions and by extension, organizational outcomes (Tang, Li, & Yang, 2015). Furthermore, research also shows that individual differences may bear *more* influence on approaches to innovation than do other predictors such as organizational and environmental factors (Damanpour & Schneider, 2006). Such studies look at executives' demographic characteristics as well as attitudes toward innovation (Damanpour & Schneider, 2006; Abebe & Angriawan, 2014).

2.2. CEO power and organizational outcomes

Executives have been shown to directly shape various organizational outcomes in important ways (Finkelstein, Hambrick, & Cannella, 2009). Variations in firm outcomes are the direct result of the strategic choices made by executives with varying career experiences, trainings and networks (Finkelstein et al., 2009). Among top executives, the CEO occupies a position of unique influence over firm processes and outcomes, which in turn dictate the firm's likelihood for success (Combs, Ketchen, Perryman, & Donahue, 2007). CEOs have a great deal of discretion in their strategic choices and subsequent decision-making because of their power. Power, here, is defined as the "capacity of individual actors to exert their will" (Finkelstein, 1992, p. 506) as a means of pursuing his/her goals. Finkelstein (1992) proposed four dimensions of CEO power: structural, ownership, expert, and prestige power. Structural power pertains to the positional influence relating to the formal organizational structure of the firm. Ownership power accumulates to CEOs who maintain ownership within the firm and is further indicated by the individual's ability to act on behalf of both management and shareholders alike (Ting, 2013). Expert power accrues to CEOs who are able to effectively manage the firm's uncertainty in the external environment through their experience and relevant expertise (Hamori & Koyuncu, 2015). Lastly, prestige power stems from the CEO's reputation within the market that shapes the perceptions others hold of him/her. CEO power is exercised across a wide range of strategic decisions that differentially impact organizational outcomes (Adams et al., 2005). In the next section, the role of CEO power in shaping the firm's innovation agenda is discussed.

² While significant scholarly work points to the strategic benefit of ambidexterity, an extensive empirical work has also shown that firms don't always seek ambidexterity and that some firms under- or over-emphasize exploitation or exploration innovation depending on the organizational attributes and the level of uncertainty and technological complexity of their competitive environment (Jurni, Sarala, Taras, & Tarba, 2013; O'Reilly & Tushman, 2013). The contingency conditions for ambidexterity are not explored given the scope of the present research.

2.3. CEO power and explorative organizational innovation - a behavioral agency theory perspective

The Behavioral Agency Theory (BAT), first proposed by Wiseman and Gomez-Mejia (1998), has been extensively used to explain executive risk preferences and associated organizational outcomes (Wu & Tu, 2007; Martin, Gomez-Mejia, & Wiseman, 2013). According to the central tenets of this theory, executives risk preferences significantly vary depending on the specific monitoring context they face. Unlike the classic agency theory (Jensen & Meckling, 1976; Eisenhardt, 1989) arguments, the proponents of BAT describe executive decision-makers as both risk-seekers and risk averse based on insights from prospect theory predictions (Kahneman & Tversky, 1979). This theory suggests that the firm's performance history significantly influences the way an organizational problem is framed (i.e. problem-framing) which in turn affects risk-taking behavior with positively framed problems eliciting less risk-taking while negatively framed problems lead to more aggressive risk-taking. In essence, BAT extends the classic agency theory predictions by viewing executives as risk-takers when confronted with negatively framed organizational problems and risk-averse in conditions of positively framed organizational problems with high perceived losses.

A number of insights can be drawn from BAT's theoretical arguments in the context of organizational innovation. First, BAT arguments are particularly relevant in the study of organizational innovation since innovation activities carry inherent risks with exploratory innovations considered to create a higher level of risk than exploitative innovations (Uotila, Maula, Keil, & Zahra, 2009). Specifically, insights from BAT suggest that executives' decisions to invest resources either in exploratory or exploitative innovation will be driven by their assessment of the relative risk involved and the extent to which they carry risk-bearing responsibility for these decisions. Second, by virtue of their status, powerful CEOs are particularly impacted by such resource allocation decisions because a disproportionate emphasis on either explorative or exploitative innovation will have a substantial consequence to not only minimizing their employment risk but also sustaining their status as powerful actors in the organization. Past research has shown that explorative innovation is associated with both high risk and high reward for firms (Jansen et al., 2006). Explorative innovations bring novelty to the firm's product portfolio and market presence by expanding the scope of its product offerings and the associated target markets. Explorative innovations are radical and thus require firms to acquire new knowledge to develop new products in order to meet the demands of new customers (Benner & Tushman, 2003) that leave the firm facing high uncertainty about the probability of success (Jansen et al., 2006). The current study contends that powerful CEOs are more likely to pursue exploratory innovations for several reasons. First, powerful CEOs are concerned with maintaining their status as powerful actors in terms of shaping the organization's direction. Powerful CEOs are more likely to view explorative innovations as "loss aversion" strategic decisions³ that help minimize the loss of their wealth despite the fact that such types of innovation carry a high level of uncertainty and risk in their payoffs. Explorative innovations provide powerful CEOs with the greatest opportunity to not only preserve their wealth, but also enhance their employment security and social status (Lewellyn & Muller-Kahle, 2012). Second, exploratory innovations serve to substantially expand the firm's current product-market portfolio and size. Accordingly, leading a larger, more complex and highly diversified firm could potentially contribute to the CEO's power and influence over the firm and its

stakeholders. This "empire-building" argument has been extensively documented in the corporate governance literature (Baker, Dutta, Saadi, & Zhu, 2012). The above arguments collectively suggest that powerful CEOs are more inclined to pursue exploratory innovation. As such, the following hypothesis is presented:

H 1. CEO Power is positively related to Explorative Organizational Innovation.

2.4. CEO power and exploitative organizational innovation

Exploitative innovations primarily provide firms with incremental innovation opportunities. Such innovation types are often associated with extending the current product-market portfolio and market presence by launching new generation products and services as well as expanding the firm's presence to serve the needs of a new target market that is significantly related to the firm's current target market. Exploitative innovations focus on enhancing the efficiency and productivity of current product offerings and creating ways of better serving the needs of current and related target markets (Jansen et al., 2006; Mueller et al., 2013). The types of innovation distinguished result in easily discernable outcomes that CEOs choose. In other words, a CEO who pursues (or does not pursue) more exploitative innovation does so in a conscious effort to produce different outcomes than those of explorative innovation (Visser & Faems, 2015). This decision compels the CEO to face a trade-off between the two activities because of limited resources (March, 1991).

This study contends that powerful CEOs are less likely to pursue exploitative innovation. Drawing from BAT theoretical insights, this study also argues that exploitative innovations are viewed by executives (in this case powerful CEOs) as essentially incremental steps that lack significant gains (expected values). Unlike explorative innovations, exploitative innovations do not produce outcomes that can expand or solidify executive power in meaningful ways. While continuously improving the efficiency and productivity of the firm's current products and services is an important part of CEOs' responsibility (Lubatkin, Simsek, Ling, & Veiga, 2006; Visser & Faems, 2015), this research argues that disproportionately allocating more resources to such types of innovations may not be appealing to powerful CEOs. Such innovations, from an executive decision-makers' perspective, have limited payoffs and therefore do not provide big gains and protection against loss. Accordingly, powerful CEOs are less likely to see important value in pursuing such types of innovations aggressively since doing so does not extend their personal wealth and power in significant ways. This study argues that, to the extent that a CEO's power is derived from expanding the scope and presence of the firm's product-market, powerful CEOs are less likely to aggressively pursue exploitative innovations. The above arguments lead to the following hypothesis:

H 2. CEO Power is negatively related to Exploitative Organizational Innovation.

2.5. The moderating role of CEO outsider status

In examining how powerful CEOs influence a firm's innovation agenda, it's important to additionally consider CEO origin (i.e. insider versus outsider). This distinction is pivotal given that successor origin affects the firm's ability to adapt resulting in different organizational outcomes (Chung & Luo, 2013). Specifically, this study seeks to understand how firms led by outside CEOs (CEOs hired from outside the firm) differ in their decision making from firms led by inside CEOs (CEOs promoted from within the firm). This distinction has drawn vast amounts of scholarly attention because of the differences in experience, knowledge, skill, access to resources each type of CEO brings with him/her (Chung & Luo, 2013). Research supports these differences

³ The Behavioral Agency Theory (BAT) proponents distinguish between loss aversion and risk aversion. For BAT scholars, loss aversion "a preference for riskier actions to avoid an anticipated loss altogether over less risky options to merely minimize the loss" (Wiseman & Gomez-Mejia, 1998, p. 135). Risk aversion on the other hand points to managers preference to a course of action with the highest expected value and manageable level of risk exposure.

noting that outside successors generally bring with them ‘new’ ideas and a fresh outlook while inside successors generally possess firm-specific knowledge they have amassed as a result of their experience within the firm (Chung & Luo, 2013). Thus, the origin of the CEO may influence a firm’s innovation activities.

Past research suggests that firms are more likely to select outside successors when change is needed (Zhang & Rajagopalan, 2010) because these CEOs are expected to pursue new or different strategies (Hambrick & Finkelstein, 1987). In examining the differences between outsider and insider CEOs, Zhang and Rajagopalan (2010) demonstrate that the relationship between the level of strategic change and the firm’s performance differs between firms led by inside and outside CEOs. Particularly, they find that firms led by outside CEOs have more pronounced levels of strategic change. Zhang and Rajagopalan (2010) further note that outside CEOs, because of their limited understanding of the firm’s existing resources and constraints, will often stray from rather than build upon the firm’s existing capabilities. This finding suggests that outside CEOs are more apt to pursue exploratory innovation than exploitative innovation because exploratory innovations depart from the firm’s existing products requiring new knowledge while exploitative innovations cater to the needs of the firm’s existing customers and result from present knowledge (March, 1991; Levinthal & March, 1993). Furthermore, because outside CEOs possess knowledge that is ‘new’ to a firm, they are more likely aware of the associated risks of losing market share to competitors if new products are not introduced. Given the above differences in outsider and insider CEOs, the current study suggests that powerful CEOs with outsider status will engage in more exploratory innovations and less exploitative innovations such that the relationship between CEO power and organizational innovation is strengthened when the CEO is hired externally. As such, the following hypotheses are presented:

H3. CEO Outsider Status positively moderates the relationship between CEO Power and Explorative Organizational Innovation.

H4. CEO Outsider Status positively moderates the relationship between CEO Power and Exploitative Organizational Innovation.

3. Methods

3.1. Sample and data sources

The sample was drawn from the Fortune 500 and Standard and Poor 500’s indices. These indices were used because they contain a wide range of industries with large firms that are characterized by substantial variation in the strategies they pursue. Further, large firms, tend to be more innovative because of their capacity and resources to invest in innovation. Given the dependent variable (new product introductions), however, only manufacturing firms (SIC code 20–39) were considered. After eliminating duplicates, the final sample consisted of 220 firms that were at least 5 years of age at the onset of the sampling window (2006–2013). Firms that were at least five years of age were focused on to ensure that both exploratory and exploitative innovation were likely to be pursued. Each of the 220 firm’s CEOs during the time period was examined. Firms were eliminated if they had >2 CEOs during this time period resulting in 46 eliminations. Next, 24 firms were eliminated because of missing control variable data resulting in a final sample of 150 firms. The average firm in the sample is 70.6 years old (SD = 41.94) and has 34,768 employees (SD = 44,223). The financial data such as R&D intensity and industry sales were collected from Compustat and Mergent Online databases. From these reports, CEO and Board of Directors information was extracted. New product introduction data were obtained from Lexis Nexis Academic Universe, which contains a vast collection of business news and press release information for various business organizations (Li, Maggitti, Smith, Tesluk, & Katila, 2013). Each firm’s history report was extracted which provides detailed information about the

product released during the sampling window. The latter information allowed the coders to decipher whether the new product was exploratory or exploitative relative to each firm.

3.2. Measures

3.2.1. Dependent variable

The dependent variables include the degree of exploitative and explorative innovations. The degree of exploitative and explorative innovation was measured by counting the number of *exploitative New Product Introductions (NPIs)* and *explorative New Product Introductions* for each sample firm during the sampling window (2006–2013). In order to determine the count of exploitative and explorative NPIs, three steps were followed: first, Lexis-Nexis Academic Universe was searched for all new product introduction announcements and firm history reports for sample firms between 2006 and 2013. Second, each NPI announcement was reviewed to ensure that the announcement was not redundant. Additionally, each announcement was examined to ensure that each announcement is indeed an NPI launch and not an announcement of a plan for NPI. Finally, two independent coders categorized each NPI announcement into either exploratory or exploitative NPI. To qualify as an exploitative NPI, the announcement must be an upgrade or extension of the firm’s current product line or a new product line including additional features that use similar technology (e.g. next generation of a drug, similar product with upgraded features and similar product introduced for new geographic markets). Conversely, an announcement was coded exploratory NPI if the NPI is outside of firm’s existing core market that extends current product offerings. The inter-rater reliability for the two coders was 89.09% for exploratory NPIs (Cohen’s Kappa = 0.204, $p < 0.05$) and 88.74% (Cohen’s Kappa = 0.752, $p < 0.01$) for exploitative NPIs. Any difference between coders was resolved by discussion and review of individual announcements.

3.2.2. Independent variable

CEO Power has been operationalized as a multi-dimensional variable comprising of various sources of executive power including structural, ownership, expert and prestige power (Finkelstein, 1992; Combs et al., 2007). In this study, *CEO Power* is operationalized as the composite measure including ownership power (*CEO founder status*), structural power (*CEO duality*) and expert power (*CEO tenure*) (Tang et al., 2011). While the original measure of *CEO Power* as proposed by Finkelstein (1992) also includes prestige power, subsequent empirical work has noted that this dimension of power is a less effective predictor of executive effects in organization (Combs et al., 2007; Tang et al., 2011). *CEO founder status* is operationalized as a binary variable with a value of “1” if the CEO is a founder or co-founder of the firm and “0” otherwise. *CEO duality* is also operationalized as a binary variable with a value of “1” if the CEO also serves as a chairperson of the board of directors and “0” otherwise. *CEO tenure* is operationalized by counting the number of years the sample firm’s CEO has been in his/her position during the sampling period. Data for each of the dimensions of *CEO power* was collected for the period 2006–2013. The final *CEO Power* composite measure was constructed by first standardizing each dimension and summing to come up with the final variable.

CEO Outsider Status is the study’s moderator variable. This variable was operationalized as a binary variable with a value of “1” if the CEO was hired from outside of the firm and “0” if the CEO was promoted from within the firm. This variable was measured during 2006–2013.

3.2.3. Control variables

Controls include seven total variables that have been shown to influence firm innovation activity including governance (*CEO Replacement*, *Board Size*), organizational (*Firm Size*, *Firm Age*, *Organizational Slack* and *R&D Intensity*) and industry (*Industry Sales*) predictors. *CEO Replacement* refers to whether a CEO replacement took place during the sampling window (2006–2013) and was coded “1” if CEO replacement

occurred during this period and “0” otherwise. *Board Size* was measured as the total number of directors on the board for the 2004–2005 period. *Firm Size* was calculated as the average number of employees for each firm for the 2004–2005 period. This variable was log-transformed as the distribution was skewed. *Firm Age* was calculated as the number of years since the sample firm was incorporated with 2013 as being the cut-off year. *Organizational Slack* was operationalized using Debt/Equity ratio for the 2004–2005 period. *R&D Intensity* is measured as the ratio of R&D expenditures to total sales. Finally, *Industry Sales* was measured for the period 2004–2005.

Given that the new product introduction variable is over-dispersed, negative binomial regression with maximum likelihood estimation was used to test the study's predictions (Li et al., 2013). As the study's independent variable, CEO Power is composed of dimensions such as CEO Elite Education and CEO Founder Status are time invariant, the choice of fixed effect estimation will not be appropriate. Furthermore, the Hausman test was not significant suggesting that fixed effect estimation is not appropriate for the model. Accordingly, a population-averaged random effect negative binomial regression was used in the analysis (Hillman, Shropshire, & Cannella, 2007).

4. Results

Table 1 below presents the means, standard deviation and correlations of study's variables. A number of significant correlations among the study's variables present. Explorative innovation is positively correlated to CEO Power ($r = 0.09, p < 0.05$). CEO power is negatively related to Firm Age ($r = -0.13, p < 0.01$), Firm Size ($r = -0.24, p < 0.01$), CEO Replacement ($r = -0.18, p < 0.01$), R&D Intensity ($r = -0.04, p < 0.05$), Organization Slack ($r = -0.09, p < 0.01$). Interestingly, CEO Power is positively related to Board Size ($r = 0.05, p < 0.05$).

Hypothesis 1 proposes that CEO Power is positively related to Explorative Organizational Innovation. Table 2 presents the results of the panel random effects negative binomial regression analysis. As can be seen in Model 2 of Table 2, the coefficient for CEO Power predicting Explorative Organizational Innovation is indeed significant ($B = 0.295, p < 0.01$). Accordingly, CEO Power is found to be a statistically significant predictor of explorative organizational innovation. Hence, Hypothesis 1 is supported. Hypothesis 2 proposes that CEO Power is negatively related to exploitative organizational innovation. The results in Model 2 of Table 2 do not provide a statistically significant coefficient ($B = -0.017, n.s.$). Accordingly, CEO Power is not found to be a significant predictor of Exploitative Organizational Innovation. Hence, Hypothesis 2 is not supported.

Hypothesis 3 proposes that CEO Outsider Status positively moderates the relationship between CEO Power and explorative organizational innovation. Table 3 below presents the results of the data analysis. As

can be seen from Model 2 of Table 3, the cross product (interaction) term is not statistically significant ($B = -1.313, n.s.$). Accordingly, CEO Outsider Status is not found to be a significant moderator of the relationship between CEO Power and explorative organizational innovation. Hence, Hypothesis 3 is not supported. Finally, Hypothesis 4 proposes that CEO Outsider Status positively moderates the relationship between CEO Power and Exploitative Organizational Innovation.

The results in Model 2 of Table 3 indicate a statistically significant and positive coefficient for the cross product (interaction) term ($B = 0.259, p < 0.01$). Fig. 1 below shows the interaction plot for the moderating effect of CEO Outsider Status on the relationship between CEO Power and exploitative organizational innovation. The interaction plot shows that CEO Power will lead to more exploitative organizational innovation when the CEO is hired from outside the firm. The significant but positive regression coefficient along with the interaction plot indicates that the inclusion of the moderator variable (CEO Outsider Status) significantly alters the direction of the relationship between CEO Power and Exploitative Organizational Innovation. Hence, Hypothesis 4 is not supported.

5. Discussion and implications

This study sought to answer two primary research questions: Does a significant relationship between CEO power and organizational innovation activities exist? And how does CEO Outsider Status influence this relationship? Specifically, this research argues that firms led by powerful CEOs are more likely to pursue more exploratory innovations and less exploitative innovations. The theoretical development argues that the link between CEO Power and organizational innovation activities is significantly moderated by the CEO's Outsider Status (whether or not the CEO is appointed from outside of the firm).

The results of the empirical analysis provide support for the argument that CEO Power is positively related to the degree of explorative organizational innovation. This finding suggests that firms led by powerful CEOs tend to aggressively emphasize explorative organizational innovations as measured in the announcements of new product introductions. This finding is consistent with the overall theoretical argument that, if not monitored, powerful CEOs tend to pursue risky corporate decisions including more risky explorative innovation. Contrary to the predictions, a significant negative relationship between CEO Power and Exploitative Organizational Innovation does not exist. In addition to testing the baseline predictions on the relationship between exploitative and explorative organizational innovation, the current research also empirically examines whether CEO Outsider Status significantly influences the strength and direction of these relationships. The findings did not support the argument that firms led by powerful CEOs pursue more explorative organizational innovation if the CEO is

Table 1
Means, standard deviation and correlations.

| Variables | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-----------------------------------|-----------|-----------|----------|----------|----------|----------|---------|---------|----------|-------|--------|------|----|
| 1 Firm Age | 70.6 | 41.94 | 1 | | | | | | | | | | |
| 2 Firm Size ^b | 34,768 | 44,223 | 0.40*** | 1 | | | | | | | | | |
| 3 CEO Replacement | 0.58 | 0.49 | 0.14*** | -0.02 | 1 | | | | | | | | |
| 4 Board Size | 9.38 | 3.73 | 0.19*** | 0.28*** | -0.08*** | 1 | | | | | | | |
| 5 R&D Intensity ^a | 10.52 | 1.85 | 0.06*** | 0.02 | 0.06*** | -0.21*** | 1 | | | | | | |
| 6 Industry Sales | 13,550.53 | 29,865.74 | 0.23*** | 0.44*** | -0.09*** | 0.16*** | -0.01 | 1 | | | | | |
| 7 Organization Slack ^a | -1.06 | 1.57 | 0.17*** | 0.14*** | 0.10*** | 0.19*** | 0.09*** | 0.01 | 1 | | | | |
| 8 CEO Outsider Status | 0.181 | 0.385 | -0.06 | -0.09** | -0.09** | -0.02 | -0.04 | -0.01 | -0.02 | 1 | | | |
| 9 CEO Power | 0.018 | 2.60 | -0.13*** | -0.24*** | -0.18*** | 0.05** | -0.04** | -0.04** | -0.09*** | -0.06 | 1 | | |
| 10 Exploitative NPI | 1.21 | 3.74 | 0.01 | 0.03 | 0.04 | -0.06 | -0.01 | 0.006 | -0.06 | -0.02 | -0.02 | 1 | |
| 11 Explorative NPI | 0.05 | 2.60 | 0.03 | 0.05 | -0.08* | 0.004 | -0.012 | 0.012 | -0.01 | -0.05 | 0.09** | 0.03 | 1 |

^a Log-transformed.

^b Number of employees.

* $p < 0.10$.

** $p < 0.05$.

*** $p < 0.01$.

Table 2
CEO power and firm innovation intensity-panel negative binomial regression with random effects^a.

| Variables | DV = No. of exploitative NPI | | DV = No. of explorative NPI | |
|---------------------|------------------------------|-------------------|-----------------------------|-------------------|
| | Model 1 | Model 2 | Model 1 | Model 2 |
| Constant | −0.656 (0.344)* | −0.647 (0.358)* | −2.614 (1.05)** | −3.362 (0.969)*** |
| Firm Age | 0.001 (0.002) | 0.001 (0.002) | 0.009 (0.01) | 0.015 (0.006)** |
| Firm Size | 0.225 (0.081)*** | 0.216 (0.083)** | 0.304 (0.249) | 0.513 (0.220)** |
| Board Size | −0.0299 (0.021) | −0.027 (0.022) | −0.092 (0.060) | −0.145 (0.058)** |
| Organization Slack | −0.137 (0.051)*** | −0.146 (0.052)*** | 0.045 (0.141) | 0.104 (0.127) |
| R&D Intensity | −1.02 (2.01) | −1.07 (2.01) | −9.25 (5.62) | −4.15 (4.96) |
| CEO Replacement | 0.359 (0.168)** | 0.369 (0.171)** | −1.60 (0.531)*** | −1.778 (0.533)*** |
| Industry Sales | −3.55 (3.29) | −3.18 (3.19) | −5.76 (7.85) | −6.27 (7.58) |
| CEO Outsider Status | | −0.072 (0.20) | | −2.12 (1.07)** |
| CEO Power | | −0.017 (0.034) | | 0.295 (0.079)*** |
| Wald chi-square | 20.67*** | 21.57** | 13.07* | 25.16*** |
| N | 548 | 532 | 548 | 532 |

NPI = New Product Introductions.

^a Coefficients are estimated using maximum likelihood in negative binomial regression analysis. Standard errors are in parentheses.* $p < 0.10$.** $p < 0.05$.*** $p < 0.01$.

appointed from outside the firm. The lack of empirical support contradicts past empirical works that show a positive link between CEO compensation (which is a component of power) and innovation activities (Wu & Tu, 2007; Lewellyn & Muller-Kahle, 2012). Perhaps the most interesting and unexpected finding in this study pertains to the moderating role of CEO Outsider Status in the relationship between CEO power and exploitative organizational innovation. Contrary to predictions, the results show that firms led by powerful CEOs in fact pursue more Exploitative Organizational Innovation when the CEO is hired from outside of the firm. Past empirical work shows that outsider CEOs pursue more risky corporate strategies (e.g. Lewellyn & Muller-Kahle, 2012). This finding, however, indicates that CEOs hired from outside of the firm tend to emphasize more Exploitative Organizational Innovations. A number of plausible explanations for this finding exist. For example, one explanation could be that these outsider CEOs are wary of “rocking the boat” too much by introducing extensive strategic change, thereby damaging the performance and standing of the firm. In this instance, they perhaps resort to stabilizing the competitive position and performance of the firm before venturing to more aggressive ventures. Another possible explanation for this surprising finding is that outsider CEOs relate to on-the-job learning. As such, outsider CEOs might be less

inclined to steer the firm away from its competitive focus in substantive ways too soon.

While the Behavioral Agency Theory (BAT) has been used to explain executive risk preferences and organizational outcomes (Wu & Tu, 2007; Martin et al., 2013), also important to mention are different theoretical perspectives that have been recently employed among corporate governance researchers. Scholars have considered an alternative theoretical explanation of CEO Power in the literature that suggests the possibility that CEO Power may in fact lead to lower risk-taking behavior. Recent works in this area have empirically examined the link between CEO Power and overall firm risk-taking behavior (e.g. Victoravich, Xu, Buslepp, & Grove, 2011). Victoravich et al. (2011), for instance, found a significant negative association between CEO Power and firm specific risk in a bank risk-taking context. Such a negative relationship between CEO Power and firm risk-taking in general implies that powerful CEOs might pursue less risky innovation strategies including exploitative new product introductions. The findings strengthen this notion of possible risk aversion and caution researchers against considering powerful CEOs as only risk-seekers.

This study has a number of implications for research. First, by investigating the relationship between CEO Power and organizational

Table 3
The moderating effect of CEO outsider status-panel negative binomial regression with random effects^a.

| Variables | DV = No. of exploitative NPI | | DV = No. of explorative NPI | |
|---------------------------------|------------------------------|-------------------|-----------------------------|-----------------|
| | Model 1 | Model 2 | Model 3 | Model 4 |
| Constant | −0.661 (0.351)* | −1.59 (0.7929)** | −3.74 (0.998)*** | −3.96 (1.09)*** |
| Firm Age | 0.001 (0.002) | 0.007 (0.002)*** | 0.015 (0.006)** | 0.015 (0.006)** |
| Firm Size | 0.216 (0.834)** | 0.290 (0.099)*** | 0.513 (0.22)** | 0.540 (0.22)** |
| CEO replacement | 0.369 (0.171)** | 0.530 (0.194)*** | −1.778 (0.533)*** | −1.78 (0.54)*** |
| Board Size | −0.027 (0.022) | −0.02 (0.02) | −0.145 (0.058)** | −0.156 (0.059)* |
| Organization Slack | −0.146 (0.052)*** | −0.157 (0.052)*** | 0.104 (0.128) | 0.108 (0.126) |
| R&D Intensity | −1.07 (2.01) | −9.63 (2.02) | −4.15 (4.96) | −4.03 (4.79) |
| Industry Sales | −3.18 (3.19) | −3.56 (3.21) | −6.27 (7.58) | −5.51 (7.25) |
| CEO Outsider Status | −0.072 (0.20) | −0.072 (0.203) | −2.12 (1.07)** | −3.11 (2.89) |
| CEO Power | −0.017 (0.034) | 0.011 (0.035) | 0.296 (0.079)*** | 0.081 (0.27) |
| CEO Power × CEO Outsider Status | | 0.259 (0.099)*** | | −1.313 (1.48) |
| Wald chi-square | 21.57** | 27.85*** | 25.16 | 25.95*** |
| N | 532 | 532 | 532 | 532 |

NPI = New Product Introductions ($N = 516$).^a Coefficients are estimated using maximum likelihood in negative binomial regression analysis. Standard errors are in parentheses.* $p < 0.10$.** $p < 0.05$.*** $p < 0.01$.

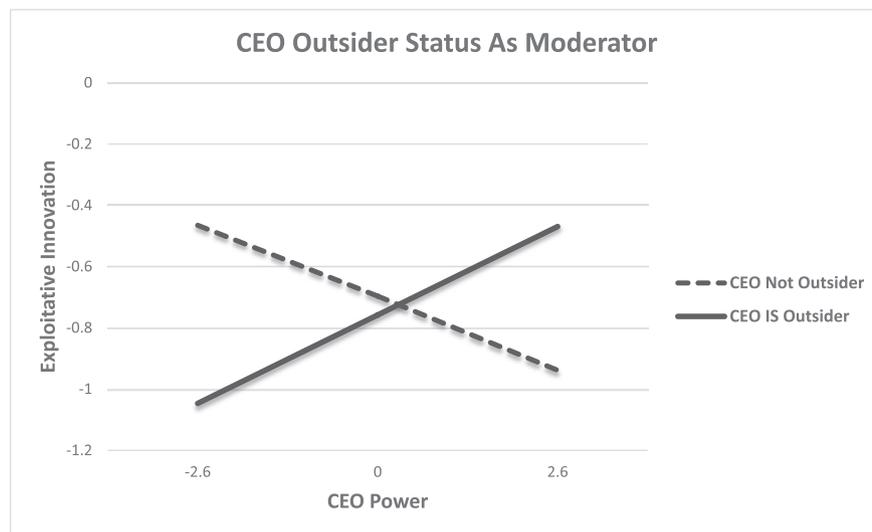


Fig. 1. CEO outsider status as a moderator of the relationship between CEO Power and exploitative innovation.

innovation activities, this study extends the current understanding of the impact powerful CEOs have on the organizations they lead. As such, the findings of this study improve scholar's understanding by providing empirical evidence on the type of organizational innovations that powerful CEOs are more likely to pursue. Second, this study also illustrates the link between powerful CEOs and their outsider status that influence organizational innovation strategies. The findings also hold practical implications that include monitoring of the firm's current viability and executive succession. The negative relationship between CEO Power and exploitative innovation suggests that powerful CEOs concentrate less on incremental innovations that often improve the firm's existing product offerings. Powerful CEOs who disproportionately allocate more resources to exploratory innovation and less resources to exploitative innovation put the firm at risk of losing current viability while seeking future opportunities. This highlights the important monitoring role board of directors' play in ensuring that decisions made are not at the expense of the firm's shareholders. Put differently, Boards need to ensure that the level of CEO Power matches the firm's innovation agenda to properly secure the firm's current and future viability in the market. The findings also hold implications for firms that have a change mandate (i.e. innovation) and are seeking CEO replacement. These firms must carefully consider how the newly appointed CEO may allocate the firm's resources and how such decisions may place the firm at risk based on the incoming CEO's level of power. Boards must therefore carefully determine the level of fit between the desired strategic direction of the firm and the incoming CEO's level of power. Furthermore, the findings of this study also provide insights into the importance of outsider executive succession. Specifically, these findings suggest that firms that hire CEOs from outside of the firm can expect them to be more risk-averse and pursue a rather incremental innovation strategy. Therefore, the findings suggest that firms that seek exploratory innovations should be open to the idea of appointing a new CEO from within the firm.

6. Limitations and future research directions

Despite the significant findings, this study is not without limitations. First, the study's sample size and sampling window are relatively small. While the sample represents large U.S. manufacturing firms, future studies should explore the relationship between CEO Power and organizational innovation using a much larger and more diverse sample in order to enhance the external validity of the findings. Further, the sample window could be expanded to a broad time frame in order to observe a stable relationship over time using a panel data analysis.

Second, the operationalization of CEO Power is not comprehensive. While this study adopted a multi-dimensional operationalization of CEO Power including structural, ownership and expert power, some studies have used different measures of CEO Power such as network-based and executive compensation-based measures that take into account the proportion of CEO's pay to the top five executives (CEO Pay Slices). Future studies in this area could operationalize CEO Power using different approaches to ensure the robustness of the empirical findings. Finally, while this research adopted the number of new product introductions, a widely used measure of organizational innovation, other operationalizations of organizational innovation can be used in future studies. For example, a number of studies have used patent citations and/or R&D intensity as additional measures of organizational innovation. Accordingly, future studies could operationalize organizational innovation both in terms of process (such as R&D intensity) and outcome (such as patent citation, new product introductions).

7. Conclusion

This study proposed that powerful CEOs, given their "empire building" ambitions and higher risk-taking tendencies, will pursue more exploratory and less exploitative innovations. Further, this study argued that these relationships are especially visible if the CEO joined the firm as an outsider. The results showed that powerful CEOs indeed tend to pursue higher risk (exploratory) innovations. Surprisingly, the study revealed that CEO Power is in fact positively related to lower risk (exploitative) innovations when the CEO is an outsider. Overall, the findings of this study provide a more nuanced explanation of the mechanisms through which CEO Power shapes the firm's innovation agenda. From the managerial practice standpoint, these findings have important implications for executive succession and the development of an innovation agenda.

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