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CEO Machiavellianism and Strategic Alliances in Family Firms

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Abstract

In this study, we build on upper echelons theory and insights from psychology to suggest that CEO Machiavellianism is manifested in the alliance behaviors of family firms. Specifically, we argue that more Machiavellian chief executive officers (CEOs) seek out strategic alliances—as doing so provides opportunities to manipulate, control, and exploit others—and that their tendency toward manipulative and controlling behaviors results in less sustainable alliances. We also argue that the effect of CEO Machiavellianism on the engagement and sustainability of strategic alliances is affected by operating in family firms. Since the owning family often intervenes and mitigates any concerns regarding the organization or its leadership, we argue that any concerns that alliance partners have regarding more Machiavellian CEOs will be weaker as family ownership increases; as such, we argue that as family ownership increases, the positive relationship between CEO Machiavellianism and strategic alliance engagement will be more strongly positive while the negative relationship between CEO Machiavellianism and alliance sustainability will be less strongly negative. Our study presents and tests a theory of how more Machiavellian CEOs affect the decisions surrounding strategic alliances by providing a novel antecedent of the decisions surrounding strategic alliances in family firms. We find support for our arguments with a sample of Standard & Poor's 500 firms.

Keywords

upper echelons theory, CEO Machiavellianism, strategic alliances, managerial discretion, family firms

Family business researchers have long been interested in understanding the influence of chief executive officers (CEOs; Barach & Ganitsky, 1995; Braun & Sharma, 2007; Dumas, 1990; Tsai et al., 2006). Consistent with this interest, a wealth of studies have examined how CEOs' characteristics are manifested in the strategic choices of family firms (e.g., Boling et al., 2016; Campbell et al., 2019; Picone et al., 2014). The underlying logic of this stream of research builds on the premise of bounded rationality (Cyert & March, 1963; March & Simon, 1958) and is often guided by upper echelons theory, which posits that individual characteristics shape executives' interpretations of the situations they face and, in turn, the choices they make for their organizations (Hambrick & Mason, 1984). Studies also note that this logic is particularly important to family businesses (Sharma et al., 2020) given that the unique ownership structure of family firms allows CEOs to exert greater influence in organizational decisions compared with nonfamily firms (Nicholson, 2008). As such, family business researchers have found considerable evidence that a number of CEO characteristics have a significant impact on the decisions and choices family businesses make. For example, Ahrens et al. (2019) explore family versus nonfamily CEOs and their educational levels and commitment to the status quo, while Campbell et al. (2019) investigate how CEO birth order affects risk taking. Likewise, Gomez-Mejia et al. (2019) investigate family and nonfamily CEO risk aversion and risk

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seeking, while Kelleci et al. (2019) examine the differences in family and nonfamily CEO personality traits.

However, despite significant insights regarding CEOs in family firms (Barach & Ganitsky, 1995; Braun & Sharma, 2007; Dumas, 1990), almost no attention has been devoted to one of the most prominent qualities seen in some CEOs: Machiavellianism (Nsehe, 2011). Machiavellianism is a personality trait that refers to individuals' tendency to invoke interpersonal strategies that advocate deep self-interest, deception, manipulation, and the exploitation of others (Christie & Geis, 1970). Furthermore, individuals high in Machiavellianism are characterized by a pragmatic focus on the outcomes of exchanges and a psychological obsession with winning in social transactions (McHoskey, 1999; Wiggins & Broughton, 1985). As noted in articles in the popular press (Kinni, 2013), Machiavellianism is a prevalent bias that guides the decisions of corporate executives toward social transactions (Tobak, 2011) and is considered to be more pronounced in CEOs than in the general population (Nsehe, 2011). As such, a better understanding of the implications of CEO Machiavellianism is particularly important for the family business literature since such a prevalent cognitive bias in CEOs suggests an alternative means by which executives affect strategic choices besides the classical mechanisms of familial biases argued to explain the actions of family firms (e.g., Zellweger et al., 2013).

Considering the unique psychological bias of Machiavellianism (Wiggins & Broughton, 1985), we examine the effect that CEO Machiavellianism has on strategic alliances, or voluntary agreements between two or more CEOs to pursue agreed-upon objectives for their organizations while remaining independent (Das & Teng, 1998). Of the many strategic decisions CEOs may make, strategic alliances are unique in that they might both be attractive to more Machiavellian CEOs and allow them to fulfill their personal desires (e.g., self-interest, deception, manipulation, and the exploitation of others). In this study, we propose that firms led by more Machiavellian CEOs are more likely to enter strategic alliances to fulfill their need to manipulate, control, and exploit others but these same manipulative behaviors negatively affect the sustainability of their strategic alliances, or a firm's ability to maintain its alliance activities over time. Furthermore, as the owning family often intervenes and mitigates concerns regarding the firm or its leadership (Ward, 2016), we also argue that any concerns that (potential) alliance partners might have about Machiavellian CEOs are diminished with increased family ownership, therefore making it more likely that firms will partner with more Machiavellian CEOs and less likely that concerned partners will attempt to end alliances as family ownership in the firm increases. Taken together, our study offers a number of contributions to family business and strategic leadership research.

Theory and Hypotheses

Upper Echelons Theory

Building on the premise of bounded rationality that stems from the Carnegie Mellon school of thought (Cyert & March, 1963; March & Simon, 1958), researchers have used upper echelons theory to trace a variety of organizational decisions and actions to the characteristics of CEOs (e.g., Chatterjee & Hambrick, 2007, 2011; Hayward & Hambrick, 1997; Li & Tang, 2010). As Hambrick (2007) notes, upper echelons theory, which states that "executives' experiences, values, and personalities greatly influence their interpretations of the situations they face and, in turn, affect their choices" (p. 334), is constructed of two interconnected parts: (1) executives act on the basis of their personalized interpretations of the situations they face and (2) these personalized interpretations of strategic situations are a function of the executives' experiences, values, and personalities (Hambrick & Mason, 1984). As such, upper echelons theory builds on the premise of bounded rationality (Cyert & March, 1963; March & Simon, 1958) to suggest that CEO characteristics provide important filtering processes that ultimately predict the behaviors and decisions of organizations.

Despite the proliferation of research on CEO characteristics, almost no attention has been devoted to Machiavellianism in CEOs despite its prevalence (Nsehe, 2011). The popular press often alludes to both the prevalence of Machiavellianism in CEOs, particularly compared with the public at large, and the role this personality trait plays in executive decisions (e.g., Kinni, 2013; Nsehe, 2011; Tobak, 2011). While Machiavellianism has not been extensively examined among CEOs, many studies in psychology and the organizational behavior literature have examined this trait in other individuals (e.g., Dahling et al., 2009; Greenbaum et al., 2017). Given the lack of research on Machiavellianism in CEOs, we first

provide a brief review of the literature and discuss the implications of the trait in the executive arena.

The Concept of Machiavellianism

Machiavellianism is a personality trait that captures one's tendency to "distrust others, engage in amoral manipulation, seek control over others, and seek status for oneself (Dahling et al., 2009, p. 219). Christie and Geis (1970) originally introduced the construct of Machiavellianism in academic literature through a series of studies focused on how the leaders of political and religious extremist groups manipulated their subordinates to meet their own demands. Throughout their work, Christie and Geis interpreted these manipulative behaviors in light of historical perspectives of power, most notably the one espoused in *The Prince* by Niccolo Machiavelli (1513/1966).

Since Christie and Geis's (1970) introduction of Machiavellianism in academic research, scholars in various disciplines have studied this personality trait in individuals (Jones & Paulhus, 2009; Paulhus & Williams, 2002). Specifically, organizational behavior and psychology scholars helped develop and subsequently refine the construct of Machiavellianism, both identifying its underlying facets (Dahling et al., 2009) and linking the construct to myriad outcomes (Smith et al., 2018). As the construct has developed, Machiavellianism has come to be conceptualized as having four underlying facets: (1) distrust in others, (2) desire for control, (3) desire for status, and (4) amoral manipulation. Several studies have affirmed that these tenets cohere as a unitary personality construct (Furnham et al., 2013; Judge et al., 2009). As such, the chief manifestations of Machiavellianism center on an individual's desire to manipulate and gain control over others (Christie & Geis, 1970), as is consistent with their "willingness to utilize manipulative tactics and act amorally and endorse a cynical, untrustworthy view of human nature" (Dahling et al., 2009, p. 219).

While Machiavellianism has largely been unstudied among CEOs, general insights that have emerged over decades of research in psychology and organizational behavior also provide insight into how Machiavellian CEOs might behave. For instance, studies have found that individuals high in Machiavellianism almost continuously engage in deception (Geis & Moon, 1981; Wilson et al., 1996) since such individuals are more convincing liars than individuals with lower levels of Machiavellianism (Geis & Moon, 1981). Studies also find that these individuals are less trustworthy (Gunnthorsdottir et al., 2002), engage in emotional manipulation (Austin et al., 2007), and are less likely to identify with ethical leadership processes in the workplace (Den Hartog & Belschak, 2012). Combining these findings with the central tenets of upper echelons theory (Hambrick & Mason, 1984), we expect that CEOs higher in Machiavellianism will lead their firms to engage in more deceptive (Geis & Moon, 1981; Wilson et al., 1996) and manipulative (Austin et al., 2007) firm behaviors as well. More specifically, we examine one firm behavior that is especially attributable to deceptive and manipulative CEOs—strategic alliances (Das & Teng, 1998; Williamson & Ouchi, 1981). Accordingly, we build on upper echelons theory (Hambrick & Mason, 1984) and Machiavellianism research (Christie & Geis, 1970; Dahling et al., 2009; Jones & Paulhus, 2009) to examine how Machiavellian CEOs influence their firms' alliance activity.

CEO Machiavellianism and Strategic Alliances

Research in psychology and management has noted that individuals high in Machiavellianism have a desire to manipulate, control, and exploit other individuals as a result of their inherent dark personality (Brinke et al., 2015; Christie & Geis, 1970; Paal & Bereczkei, 2007; O'Boyle et al., 2012). These so-called "master manipulators" often engage in unethical behaviors since they adhere to the view that any means necessary can be used to maintain power and control (see, e.g., Dahling et al., 2009; Kessler et al., 2010; Machiavelli, 1513/1966; Maritain, 1942). For instance, researchers have found that higher levels of Machiavellianism drive individuals to steal (Fehr et al., 1992; Harrell & Hartnagel, 1976), lie excessively (Kessler et al., 2010), cheat (Cooper & Peterson, 1980; Greenbaum et al., 2017), and engage in unethical and counterproductive behaviors at work (Kish-Gephart et al., 2010; O'Boyle et al., 2012) due to their extreme focus on self-interest and personal gain.

The inherent tendencies of more Machiavellian individuals to control others and use them as instruments for personal gain (Christie & Geis, 1970, Linton & Wiener, 2001; Paal & Bereczkei, 2007; Whiten & Byrne, 1988) can be expected to shape how Machiavellian CEOs view alliance opportunities for their firm and, in turn, influence their engagement in such strategies. Strategic alliances offer CEOs a unique environment that exposes both their firm and any partners to unusual business

risks, such as "breaking promises, not sharing resources or facilities as per agreement, bluffing, lying, misleading, misrepresenting, distorting, cheating, misappropriating, stealing, etc." (Das & Rahman, 2001, p. 43). As such, the unique environment of strategic alliances that exposes each firm to opportunistic exploitation by their partner (Williamson & Ouchi, 1981) can be expected to attract more Machiavellian CEOs since it provides an opportunity for them to fulfill their need to manipulate, control, and exploit other individuals (Brinke et al., 2015; Christie & Geis, 1970; Paal & Bereczkei, 2007). Furthermore, the nature of Machiavellian individuals to proactively seek out opportunities to take advantage of others (e.g., Christie & Geis, 1970; Greenbaum et al., 2017; O'Boyle et al., 2012) can be expected to encourage more Machiavellian CEOs to actively seek out and pursue strategic alliances. Therefore, we expect that organizations led by more Machiavellian CEOs are more likely to engage in strategic alliances than firms led by less Machiavellian CEOs. Consistent with this logic, we hypothesize the following:

Hypothesis 1: There will be a positive relationship between CEO Machiavellianism and strategic alliance engagement.

As argued above, we expect that organizations led by more Machiavellian CEOs are more likely to engage in strategic alliances since it provides them an opportunity to fulfill their need to manipulate, control, and exploit others (Brinke et al., 2015; Christie & Geis, 1970; Paal & Bereczkei, 2007). While we expect their need to manipulate and control other individuals to drive engagement in strategic alliances with other firms, the same conflicting behaviors that characterize more Machiavellian CEOs might also have negative consequences on their ability to manage and sustain their alliance activity. Stated differently, we expect that the manipulative and controlling behaviors of more Machiavellian CEOs will be viewed unfavorably by their alliance partners and result in less sustainable alliance activities over time.

Throughout the literature, researchers have produced considerable theory and evidence that the decision to sustain and maintain a strategic alliance is strongly connected to the alliance behaviors and the reputation of a firm for its ability to be a trustworthy partner (Owen-Smith & Powell, 2004; Podolny, 2001; Stern et al., 2014). Studies have shown that the ability of firms to sustain strategic alliances strongly relies on ties within each firm's governance (Krishnan et al., 2016), as CEOs in each organization monitor one another's actions to make decisions on whether or not to maintain or reverse the alliance partnership (Arend & Seale, 2005). These decisions regarding whether or not to exit a specific partnership are often a function of the perception of the CEO (Brouthers et al., 1995), as alliances can be exited quickly given that they are inherently designed to be less binding (Harrison et al., 2001).

For more Machiavellian CEOs, we argue, the tendencies to manipulate and control others will result in less sustainable strategic alliances. As more Machiavellian CEOs enter partnerships with other organizations, their inherent tendency to control others and use them as instruments for personal gain (Christie & Geis, 1970, Linton & Wiener, 2001; Paal & Bereczkei, 2007; Whiten & Byrne, 1988) will come to fruition throughout the personal interactions and behaviors that characterize the partnership. Since the manipulative and controlling behaviors of Machiavellian individuals are seen as "socially undesirable, beneficial for oneself and detrimental for others" (Rauthmann & Kolar, 2012, p. 885), it can be expected that alliance partners will be more likely to perceive more Machiavellian CEOs as unfavorable alliance partners who hold opportunistic intentions for the partnership that might ultimately be detrimental for their organization. While such machinations may not be apparent at the outset of an alliance—particularly given more Machiavellian individuals' skill at manipulation—as both firms interact repeatedly and partners are subjected to controlling and manipulative behaviors, such tendencies will naturally come to light (Rauthmann & Kolar, 2012). As such, we expect that after entering alliances, partners will form unfavorable perceptions of more Machiavellian CEOs as partners, leading to a greater likelihood that alliance partners will reverse their decisions and exit the partnership. Therefore, we expect that the sustainability of a firm's alliance activities will be lower for organizations led by more Machiavellian CEOs than for firms led by less Machiavellian CEOs after engaging in such partnerships. Consistent with this logic, we hypothesize the following:

Hypothesis 2: There will be a negative relationship between CEO Machiavellianism and strategic alliance sustainability.

Perpetuating the Manipulation: The Moderating Role of Family Ownership

As the inherent bias of Machiavellianism may to some degree rule out other predictions a family scholar might make (e.g., Zellweger et al., 2013), we argue that more Machiavellian CEOs can be expected to engage in more alliances given their need to manipulate, control, and exploit other individuals (Christie & Geis, 1970). However, these same manipulative and controlling behaviors will create concerns for their alliance partners, resulting in less sustainable alliances. Furthermore, since owning family members of a company tend to intercede when concerns with the firm arise and assuage any issues with its leadership (Le Breton-Miller & Miller, 2008; Ward, 2016), we argue that the effects of CEOs' Machiavellianism will be moderated by the presence of family ownership. Stated differently, we expect that increased family ownership and the associated tendency of such owners to be involved in the family business may help alleviate potential concerns from alliance partners over the Machiavellian actions, thus affecting the relationship between CEO Machiavellianism and organizational outcomes. That is, we expect that any concerns alliance partners have over more Machivellian CEOs' actions are likely to be assuaged as family ownership increases, and thus, such CEOs will be more likely to both engage in and sustain strategic alliances as family ownership increases in the organization. Therefore, we theorize about the moderating effect of family ownership on our previous hypotheses.

First, we argue that family ownership strengthens the positive relationship between CEO Machiavellianism and strategic alliance engagement. Prior research offers considerable evidence that the unique ownership structure of family firms provides such organizations an opportunity to intervene if any issues arise among the firm's leadership (Le Breton-Miller & Miller, 2008; Ward, 2016). Studies have noted that owning family members pursue a favorable reputation for both their family and their business (Deephouse & Jaskiewicz, 2013), which drives the owning family to desire to mitigate any concerns that others may have about their organization. As such, the presence of an owning family may serve to assuage the concerns of outside audiences, such as alliance partners, alleviating potential concerns about the organization or its CEO (Ward, 2016).

Thus, we argue that the effect of CEO Machiavellianism will be even more strongly positive on engagement in strategic alliances as the presence of the owning family increases. Although more Machiavellian CEOs can be expected to seek out and pursue strategic alliances as an opportunity to fulfill their need to manipulate, control, and exploit other individuals (Christie & Geis, 1970), the concerns surrounding such CEOs that could otherwise thwart such overtures from coming to fruition can be mitigated by the owning family (Le Breton-Miller & Miller, 2008); so potential alliance partners perceiving any issues surrounding a partnership with firms led by more Machiavellian CEOs will then be both more willing to accept such overtures and less likely to decline invitations to engage in such alliances. Thus, it can be expected that more Machiavellian CEOs will be even more successful engaging in strategic alliances with other organizations as the presence of a family's ownership in the firm increases because alliance partners' concerns regarding the potential manipulative behavior of more Machiavellian CEOs are lessened. Thus, we expect that family ownership will strengthen the positive relationship between CEO Machiavellianism and strategic alliance engagement. Consistent with this logic, we hypothesize the following:

> **Hypothesis 3:** Family ownership will strengthen the positive relationship between CEO Machiavellianism and strategic alliance engagement.

Second, we also argue that family ownership's tendency to intercede on behalf of the firm and assuage the concerns of external audiences, such as alliance partners, will also weaken the negative relationship between CEO Machiavellianism and strategic alliance sustainability. While we expect organizations led by more Machiavellian CEOs to have less sustainable strategic alliance activities since their manipulative and controlling behaviors may be perceived unfavorably by partners (Rauthmann & Kolar, 2012), the presence of an owning family in the firm may influence how much CEO Machiavellianism influences the sustainability of their alliance activity. As owning family members can help mitigate concerns about the organization or its leadership (Le Breton-Miller & Miller, 2008; Ward, 2016), alliance partners can be expected to be influenced less by the unfavorable perceptions and manipulative behaviors of more Machiavellian CEOs as family ownership increases (Rauthmann & Kolar, 2012). The notion that the owning family may intervene and mitigate any concerns that alliance partners may have regarding the

alliance should lessen the effect of CEO Machiavellianism on strategic alliance sustainability precisely because the issues that such CEOs bring throughout the partnership would be resolved. Hence, we expect family ownership will weaken the negative relationship between CEO Machiavellianism and strategic alliance sustainability. Therefore, we hypothesize the following:

> **Hypothesis 4:** Family ownership will weaken the negative relationship between CEO Machiavellianism and strategic alliance sustainability.

Methods

Sample and Data Collection

We collected data for our sample from various sources. Annual financial and corporate data were collected from the Compustat Execucomp, BoardEx, and Center for Research in Security Prices databases. Strategic alliance data were collected from the SDC Platinum database. Following previous research, we included all forms of strategic alliances within the database to ensure greater generalizability for our study (Eisenhardt & Schoonhoven, 1996; Hubbard et al., 2018). CEO-level control variables were collected from Compustat's Execucomp database, and our control variables with respect to the board of directors were collected from the BoardEx database. Furthermore, when data were missing from any of the listed databases, we used a firm's 10-K reports to attain such data when available. Last, CEO Machiavellianism data were collected utilizing a videometric technique that used third-party observer ratings of CEOs from publicly accessible videos (Hill et al., 2019; Petrenko et al., 2019).

To test our hypotheses, we employed an initial sample that included all Standard and Poor (S&P) 500 firms between 2000 and 2016, excluding the firms for which no financial data are available in Compustat.[1] Then, we identified the CEO for each firm in 2014 and included the firm-year observations of our intended time frame where the individual served as CEO. From this sample, we excluded interim CEOs since their effects on firms have been shown to differ from those of permanent CEOs (Ballinger & Marcel, 2010). We also excluded CEOs for whom adequate videometric data for the measurement of Machiavellianism were not available and CEOs from financial firms or public utilities (Petrenko et al., 2016) or firms that have their origins in spin-offs, mergers, and carve-outs (Nelson, 2003). Our final sample included 296 CEOs based on the available data for the variables of each model.

Selection Bias

We included in our sample only firms for which CEO videos were publicly available online. Our videometric technique opens up the possibility that our sample firms' CEOs are not representative of the broader population (cf. Certo et al., 2016). Consistent with prior research (Petrenko et al., 2019; Westphal & Bednar, 2005), we conducted a Kolmogorov–Smirnov two-sample test (Siegel & Castellan, 1988) to verify the representativeness of our final sample. First, we downloaded data from Compustat on all firms in the S&P 500 stock index between 2000 and 2016. Then, we compared the distribution of our variables in our final sample with the broader population of our study.[2] The results of our Kolmogorov-Smirnov two-sample test reported no significant differences between the sampled and nonsampled firms, providing evidence that our sample is representative of the broader population. This approach aligns with that of other studies using a videometric technique (Gupta & Misangyi, 2018; Hill et al., 2019; Petrenko et al., 2016; Petrenko et al., 2019).

While our sample appears to be representative of the broader population of firms, it is nonetheless possible that there is some degree of nonrandomness in our sample. Specifically, as with Heckman's (1976) original example, where it is only possible to observe the outcome of wages for women in the workforce, we can only observe the outcomes in our study for those CEOs for whom we can measure Machiavellianism. To mitigate any issues regarding a potential selection bias, we followed Heckman's two-step method. First, we downloaded data from Compustat on all firms in the S&P 500 stock index between 2000 and 2016 and created a dummy variable that equaled 1 if the firm-year observation from our sample was also present in the larger data set and 0 otherwise. Second, we ran a probit model regressing this dummy variable on specific firm and CEO characteristics, and then we used the estimates from the probit model to calculate the *inverse Mills ratio* (IMR) and included the variable in our regression models to account for possible sample selection bias (see Appendix A in the online version of this journal). Specifically, we drew on prior research to identify firm and CEO characteristics

that may affect selection into our sample (Malhotra et al., 2018), resulting in the use of the following variables: firm size, firm performance, CEO age, CEO tenure, and CEO ownership. Theoretical logic suggests that each variable may affect the presence of CEO videos, which underlies any selection process in our sample and, thus, whether we can measure CEO Machiavellianism. In particular, larger and better-performing firms are argued to attract more attention from stakeholders and have more resources to put to use in discretionary ways, such as producing videos (Stinchcombe, 1965), while CEOs who are older, are longer tenured, and have more ownership in the firm have long been argued to be associated with self-interested actions that might drive them to produce videos (e.g., Haleblian et al., 2009). As such, each variable is theoretically linked to the presence of videos of firms' CEOs. Furthermore, such an approach requires an exclusion restriction, and CEO age meets the criteria for such a variable as (a) it significantly predicts the "probability of an observation's appearing in the sample, but do[es] not influence the ultimate dependent variable" (Certo et al., 2016, p. 2644) and (b) the resulting IMR has a correlation with Machiavllianism below |0.3| (actual value of −0.08; see Table 2), a threshold at which increases are likely to affect the exclusion restriction strength (Certo et al., 2016).[3]

Independent Variables

CEO Machiavellianism. Upper echelon research has long noted the difficulty of accurately measuring CEO personality traits since CEOs rarely have the time or willingness to fill out surveys and, moreover, may be particularly subject to social desirability bias, which further threatens the validity of measures (for a review, see Hill, White, & Wallace, 2014). To surmount these obstacles, we followed previous research and used a psychometrically validated "thin-slices" videometric approach to measure our CEO attributes (Connelly & Ones, 2010; Gupta & Misangyi, 2018; Petrenko et al., 2019). Past research provides considerable evidence that using third-party ratings to measure CEO characteristics is an advantageous method for strategy researchers (e.g., Ou et al., 2014; Raskin et al., 1991) and combats certain sources of response bias, such as social desirability, and the limitations of self-reported measures of behavior (Cycyota & Harrison, 2006). Moreover, the videometric technique increases the potential sample size of CEOs as online public video records of CEOs are becoming readily available and easy to access (Gupta & Misangyi, 2018; Petrenko et al., 2019), and furthermore, this technique has shown consistency with alternative measurement approaches (Hill et al., 2019).

Following recommendations for videometric measurement (Petrenko et al., 2019; Hill et al., 2019), we collected publicly available videos of the CEOs in our sample from sources on the internet, such as Fox News and YouTube, and "de-identified" the videos so that the names of the company and the executive are not observable, to reduce coders' biases. The videos averaged 2.5 minutes in length, as Petrenko and colleagues (2016) established that this time duration is the most efficient for measuring CEO characteristics and allows for reliable measures without causing rater fatigue (see also Gupta & Misangyi, 2018; Hill et al., 2019), and we utilized this approximate time length with a little variation to avoid interrupting a CEO in the middle of a sentence. To help ensure that we were capturing sources of the CEOs' natural tendencies, we utilized videos of CEOs during question-and-answer (Q&A) sessions of interviews, since responses to questions are more likely to be the CEOs' own words and unscripted (Malhotra et al., 2018; Matsumoto et al., 2011). We used 2.5-minute clips from the middle of the interview since the beginning and end are often scripted answers (cf. Petrenko et al., 2016; Petrenko et al., 2019). Furthermore, we also ensured that the 2.5 minutes captured were of the CEOs speaking (and not other executives or individuals within the video) and that the content of the discussion was relevant (i.e., about business and leading his or her company). Also, we did not specify a type of moderator for the Q&A sessions, to ensure generalizability of our findings and since doing so might cause a bias within our sample. Moreover, Q&A sessions in interviews are particularly appropriate since people tend to reveal variations in their personalities more readily under complex and stressful conditions (Dewaele & Furnham, 1999; Malhotra et al., 2018). Therefore, we did not include videos of CEOs with any prepared remarks, such as scripted interviews, professional presentations, or commencement speeches.

Since psychologists have noted that "dark traits" like Machiavellianism must be observed by trained experts in clinical psychology to ensure accurate assessments (Paulhus & Williams, 2002; Slepian et al., 2014), we recruited and hired PhD students in clinical psychology

to watch the videos and rate the CEOs' Machiavellianism. This approach is in alignment with research in psychology that has provided considerable evidence that the thin-slices approach to measuring Machiavellianism is validated when observed by clinical psychologists (Fowler et al., 2009; Oltmanns et al., 2004). Blinded to the hypotheses of our study, three raters assessed *CEO Machiavellianism* on a 7-point Likert scale utilizing the previously validated Machiavellian Personality Scale (Dahling et al., 2009), which is prominently used throughout management research (Greenbaum et al., 2017). The items on the scale included "The individual believes that lying is necessary to maintain a competitive advantage over others" and "The individual likes to have control over other people." The measure demonstrated high reliability ($\alpha = .95$). In addition, this measure demonstrated significant interrater reliability (intraclass correlation coefficient = .547) and significant interrater agreement among the coders (rwg = .948). The results of these tests provide us confidence in our videometric approach to measuring CEO Machiavellianism.

We ran a robustness check to test for the validity of our videometric approach. Specifically, we ran tests to check for intertemporal reliability of our measures and to ensure that the ratings of CEOs were consistent across different video sources and over different time periods. Decades of psychology research have shown that Machiavellianism is a dispositional personality trait among individuals that is stable over time (Brinke et al., 2015; Christie & Geis, 1970; Furnham et al., 2013). However, it is still important to test whether or not our measure of Machiavellianism changed in CEOs throughout the time frame of our study. To run the robustness check, we collected different videos of 30 CEOs in our study. These videos were at least 1 year apart from the video used in our main measure. We then measured each CEO's level of Machiavellianism in these videos using the same videometric technique. Consistent with other videometric studies (Gupta & Misangyi, 2018; Petrenko et al., 2016), we found no significant differences between the scores ($p = .567$). This finding provides evidence that the Machiavellianism of the CEOs in our sample does not meaningfully change during their tenure as CEO, and it is consistent with the findings of previous studies in psychology that Machiavellianism is a stable trait among individuals (Brinke et al., 2015; Christie & Geis, 1970; Furnham et al., 2013). In addition, this test also provides evidence that our ratings are robust to media effects (Gupta & Misangyi, 2018; Petrenko et al., 2019) as ratings of CEO traits were consistent across different video samples. Overall, the results of these robustness checks are in alignment with those of previous studies utilizing a videometric technique (Gupta & Misangyi, 2018; Petrenko et al., 2019) and provide us confidence in our videometric measure of CEO Machiavellianism.

Moderating Variable

Family Ownership. We followed the exact calculations used in previous research to create our measure of *family ownership*. Specifically, family ownership was measured by using the percentage of fractional equity ownership of the founding family (Anderson & Reeb, 2003; Chrisman & Patel, 2012) for all firms within our sample. This information can be found in the proxy statements of the organization since these government-mandated filings report the firm's founder, his or her immediate family members, and their holdings. However, as noted in other studies (Anderson & Reeb, 2003), the family could expand several generations after the founder to include distant relatives whose last names may no longer be the same. To mitigate this issue, we followed previous research and examined the corporate histories of each firm in our sample using Glade Business Resources, Hoovers, and individual company websites (Anderson & Reeb, 2003, 2004).

Dependent Variable

Strategic Alliance Engagement. Consistent with previous studies (e.g., Eisenhardt & Schoonhoven, 1996; Hubbard et al., 2018; Stuart, 1998), we measured *strategic alliance engagement* as the total number of alliances a firm entered in a given year. We obtained the number of strategic alliances from the SDC Platinum database and included all types of strategic alliances in the SDC Platinum database to ensure the generalizability of our findings. Moreover, as SDC Platinum defines *alliances* as voluntary agreements between firms that have combined resources to form a new, mutually advantageous business arrangement in order to achieve predetermined objectives while remaining independent (Churchwell, 2016), this variable directly reflects the definition of strategic alliances in our study and, as a result, is in line with our theorizing.

Strategic Alliance Sustainability. We measured strategic alliance sustainability by indicating whether or not the firm sustained their strategic alliance activity throughout the following year. Specifically, we created a binary variable indicating whether or not a firm engaged in the same number of or more strategic alliances than it had in the previous year (1 = *sustainable*). For instance, if a company engaged in three strategic alliances in the year 2010 but engaged in only one strategic alliance in 2011, this variable was coded as 0 (i.e., *not sustainable*). Because our panel data set allows us to capture the number of strategic alliances a firm engaged in over time (i.e., in each year), this variable allows us to test whether or not a firm's strategic alliance activity was sustainable over our sample.

Control Variables

We included a number of variables in our analysis to control for potential confounding factors. We first controlled for *CEO tenure* as the number of years the CEO has been with the organization in that position (Finkelstein, 1992; Fischer & Pollock, 2004). We also controlled for *CEO total compensation*, measured as the total compensation for each CEO in a given year, combining both cash and noncash forms of income: salary, bonus, long-term incentive pay, the value of stock options award, and all other pay (Miller et al., 2002). We also included *CEO ownership*, measured as the percentage of shares owned by a CEO (Zhou, 2001). Moreover, we also controlled for *founder CEO* (1 = *Yes, CEO is also the founder of the firm*), *family CEO* (1 = *Yes, CEO is a family member*), and *CEO family generation* (i.e., the familial generation of the family CEO; measured as the number of generations that separate the current CEO from the founding CEO in the family firm).

We controlled for *firm size* as the natural log of the number of employees employed by the firm, as well as the reported value of *long-term debt* and *firm performance*, measured as a firm's return on assets in a given year (Bae & Insead, 2004). We also controlled for *market performance*, measured as a firm's total shareholder return (Quigley & Hambrick, 2012), and *previous alliance engagement*, measured by the number of strategic alliances in which a firm engaged in the previous year. As the size of the board of directors may affect engaging in strategic alliances (Goodstein et al., 1994; Rosenstein et al., 1993), we controlled for *board size* (the number of directors). We also controlled for *CEO duality* by creating a binary indicator regarding whether or not the CEO was also the chairman of the board (1 = *Yes, CEO is also a chairman of the board*), and we controlled for *family board membership* (1 = *Yes, members of the owning family held a seat on their company's board of directors*) by creating an indicator variable representing whether or not any member of the owning family sat on their company's board of directors. Last, we controlled for firms operating within *high-tech industries* (1 = *Yes, the firm operates in a high-tech industry*), which includes all firms operating in the computer hardware (SIC 35), computer software (SIC 73), semiconductor and printed circuits (SIC 36), biotechnology (SIC 28), telecommunications (SIC 48), and pharmaceutical (SIC 28) industries (Certo et al., 2001; Kasznik & Lev, 1995). A variable booklet detailing the variables utilized in this study appears in Table 1.

Model and Estimations

As our sample consisted of longitudinal data for each CEO in strategic alliance engagement, which reoccurred consistently on a yearly basis, we followed the previous studies utilizing a videometric technique and used panel approaches to test our hypotheses (Petrenko et al., 2019). Specifically, given that we are primarily concerned with the outcomes of an invariant personal characteristic of CEOs (Chatterjee & Hambrick, 2007, 2011; Petrenko et al., 2019), we used generalized estimating equations. These models have been widely used as an estimation method for such data in the strategic leadership literature because it explicitly accounts for the nonindependence of observations in the panel data (Liang & Zeger, 1986). The models were specified with negative binomial (i.e., strategic alliance engagement) and binomial (i.e., strategic alliance sustainability) distributions and an identity link function. As we assumed that observations within each set of CEO observations are correlated, we used an exchangeable correlation structure (grouped by CEO) to account for any autocorrelation in the data (Gupta & Misangyi, 2018). Finally, we also specified robust standard errors in all the models to help account for any misspecification in the correlation structure (Hardin & Hilbe, 2012).

Table 1. Variable Booklet.

Variable	Database (source)	Measure	Database items
Inverse Mills ratio	Execucomp	Inverse Mills ratio generated from first-stage probit model in Certo et al. (2016)	[NUMBERDIRECTORS]; [DLTT+DLC)/AT]; [EMP]; [GENDER]; [AGE]
Firm size	Compustat	Natural log of number of employees	[EMP]
High-tech industries	Compustat	1 = *Yes, the firm operates in a high-tech industry*; 0 = *No*	[SIC: 35, 73, 36, 28, 48, & 28]
Board size	BoardEx	The number of directors on the board	[NUMBERDIRECTORS]
CEO duality	Execucomp	Yes = 1 if CEO is also a chairman of the board; No = 0	[TITLEANN]
CEO tenure	Execucomp	The number of years the individual has been CEO of the firm	[YEAR] – [YEARBECAMECEO]
Long-term debt	Compustat	Reported value of long-term debt	[DLTT]
Firm performance	Compustat	A firm's return on assets in a given year	[NI]/[AT]
CEO total compensation	Execucomp	The total compensation for each CEO in a given year, combining both cash and noncash forms of income: salary, bonus, long-term incentive pay, the value of stock options award, and all other pay	[TDC1]
CEO ownership	Execucomp	The percentage of shares owned by a CEO	[SHOWN_TOT_PCT]
Family CEO	10Ks	1 = *Yes, CEO is a family member*; 0 = *No*	Coded from 10K
CEO family generation	10Ks	The number of generations that separate the current CEO from the founding CEO in the family firm	Coded from 10K
Founder CEO	10Ks	1 = *Yes, CEO is also the founder of the firm*; 0 = *No*	Coded from 10K
Market performance	Compustat	A firm's total shareholder return	[PRCC_F/PRCC_F[_n-1]-1) + DVSPX_F/PRCC_F [_n-1]) * 100]
Family board membership	10Ks	1 = *Yes, members of the owning family held a seat on their company's board of directors*; 0 = *No*	Coded from 10K
Previous alliance engagement	SDC Platinum	The number of strategic alliances in which a firm engaged in the previous year	[Strategic Alliance Flag]
Strategic alliance engagement	SDC Platinum	The total number of alliances a firm entered in a given year	[Strategic Alliance Flag]
Strategic alliance sustainability	SDC Platinum	Indication of whether a firm's alliance activity was sustained throughout the following year	1 = If [Alliance Engagement] (t) ≥ [Alliance Engagement](t-1); 0 if not
Family ownership	Glades Business Resources, Hoovers, 10Ks	Percentage of fractional equity ownership of the founding family	Coded from 10K
CEO Machiavellianism	Videometric measurement technique	Machiavellian Personality Scale (Dahling et al., 2009)	Coded by expert raters

Note. Full explanation of the variables appears in the text. We thank an anonymous reviewer for this idea. CEO = chief executive officer.

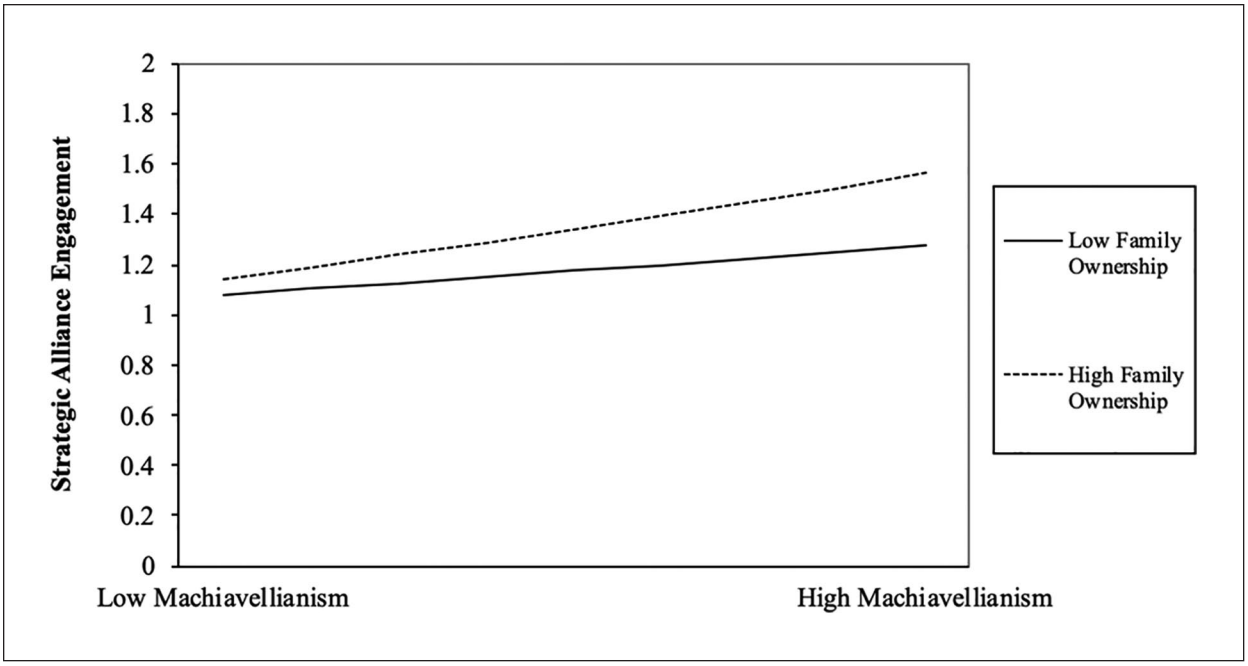

Figure 1. The interaction between CEO Machiavellianism and family ownership on strategic alliance engagement.

Results

Descriptive statistics and correlations are shown in Table 2. Table 3 reports the results from our hypotheses tests regarding strategic alliance engagement, while Table 4 reports the results from our hypotheses tests regarding strategic alliance sustainability.

In Hypothesis 1, we predicted a positive relationship between CEO Machiavellianism and strategic alliance engagement. The results reported in Model 2 of Table 3 ($b = .284$, $p < .01$) provide support for this hypothesis, suggesting that CEO Machiavellianism positively relates to a firm's likelihood of engaging in strategic alliances. In Hypothesis 2, we predicted a negative relationship between CEO Machiavellianism and strategic alliance sustainability. The results reported in Model 5 of Table 4 ($b = -.031$, $p < .05$) provide support for this hypothesis, suggesting that Machiavellian CEOs have less sustainable alliances.

In Hypothesis 3, we predicted that the positive relationship between CEO Machiavellianism and strategic alliance engagement would be stronger as family ownership increases. Therefore, we analyzed the moderating effect of family ownership on the CEO Machiavellianism to strategic alliance engagement relationship. The results reported in Model 3 of Table 3 ($b = .028$, $p < .01$) provide support for Hypothesis 3. This finding is visually presented in Figure 1, which shows that the effect Machiavellian CEOs have on strategic alliance engagement is more positive as family ownership increases, suggesting that Machiavellian CEOs engage in more strategic alliances in the presence of an owning family.

In Hypothesis 4, we predicted that the negative relationship between CEO Machiavellianism and strategic alliance sustainability would be weaker as family ownership increases. Therefore, we analyzed the moderating effect of family ownership on the CEO Machiavellianism to strategic alliance sustainability relationship. The results reported in Model 6 of Table 4 ($b = .003$, $p < .05$) provide support for Hypothesis 4. This finding, presented in Figure 2, shows that the negative effect that Machiavellian CEOs have on strategic alliance sustainability is weaker as family ownership increases, suggesting that Machiavellian CEOs hold more sustainable strategic alliances in the presence of increasing family ownership.

Post Hoc Analyses

Endogeneity concerns are common in CEO studies and may stem from more Machiavellian CEOs being selected

Table 2. Correlation and Descriptive Statistics.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Inverse Mills ratio	0.65	0.06																				
2. Firm size	3.09	1.45	−.03																			
3. High-tech industries	0.30	0.45	.03	−.05																		
4. Board size	11.02	2.43	−.05	.29	−.07																	
5. CEO duality	0.60	0.48	−.02	.22	−.18	.14																
6. CEO tenure	5.96	6.92	.62	.06	.02	−.01	.20															
7. Long-term debt	1.17	3.50	.03	.30	−.09	.27	.10	−.01														
8. Firm performance	0.05	0.06	−.39	.04	.10	−.20	.01	.04	−.14													
9. CEO total compensation	1.11	9.82	−.03	.21	.12	.18	.05	.07	.12	.01												
10. CEO ownership	1.42	3.60	.60	.03	−.06	−.05	.13	.48	−.03	.01	−.07											
11. Family CEO	0.03	0.19	.11	.07	−.06	.10	.13	.07	.01	−.04	.01	.15										
12. CEO family generation	0.05	0.31	.09	.13	−.02	.04	.10	.01	.07	−.01	.02	.11	.79									
13. Founder CEO	0.01	0.12	−.02	.05	−.08	.02	.10	−.01	−.01	−.04	−.03	.18	.62	.36								
14. Market performance	15.84	39.15	−.02	−.03	.01	−.07	−.01	.06	−.03	.10	−.01	−.03	−.02	−.01	−.02							
15. Family board membership	0.21	0.41	−.05	.08	.10	.04	−.10	−.04	−.08	.07	.01	−.01	.38	.30	.23	−.01						
16. Previous alliance engagement	1.21	4.88	−.01	.15	.13	.05	−.03	−.03	.23	.04	.08	−.02	.01	.03	−.01	−.04	.09					
17. Strategic alliance engagement	1.20	4.86	.01	.17	.13	.06	−.03	−.03	.24	.06	.10	−.02	.01	.03	−.01	−.06	.09	.62				
18. Strategic alliance sustainability	0.84	0.36	.01	−.10	−.07	−.01	−.03	−.01	−.12	−.01	−.12	.03	.02	.01	−.01	.03	.01	−.04	−.21			
19. Family ownership	1.71	7.78	−.01	.09	−.01	.06	−.10	−.04	−.01	.05	.04	.02	.29	.33	.11	−.01	.42	.08	.09	.01		
20. CEO Machiavellianism	3.84	0.64	−.08	.14	−.02	.12	−.02	−.11	.19	−.07	.17	−.02	.05	.04	.13	−.01	.02	.09	.11	−.08	−.01	

Note. $n = 1{,}845$ firm-year observations for 296 CEOs. Correlations above |.06| were statistically significant at $p < .05$. CEO = chief executive officer.

Table 3. GEE Models Predicting Strategic Alliance Engagement.

	Model 1		Model 2		Model 3	
Control variable	β	*p*	β	*p*	β	*p*
Inverse Mills ratio	6.049	(.000)	6.243	(.000)	5.886	(.000)
	[1.587]		[1.626]		[1.672]	
Firm size	0.273	(.000)	0.262	(.000)	0.266	(.000)
	[0.040]		[0.041]		[0.042]	
High-tech industries	0.778	(.000)	0.769	(.000)	0.789	(.000)
	[0.107]		[0.109]		[0.113]	
Board size	−0.023	(.298)	−0.021	(.327)	−0.016	(.466)
	[0.022]		[0.022]		[0.022]	
CEO duality	0.163	(.111)	0.192	(.064)	0.226	(.034)
	[0.102]		[0.103]		[0.106]	
CEO tenure	−0.073	(.000)	−0.074	(.000)	−0.068	(.000)
	[0.011]		[0.011]		[0.011]	
Long-term debt	0.001	(.000)	0.001	(.005)	0.001	(.013)
	[0.001]		[0.001]		[0.001]	
Firm performance	3.059	(.001)	3.234	(.000)	2.797	(.002)
	[0.880]		[0.896]		[0.915]	
CEO total compensation	0.001	(.000)	0.001	(.000)	0.001	(.000)
	[0.001]		[0.001]		[0.001]	
CEO ownership	−0.044	(.044)	−0.047	(.034)	−0.055	(.016)
	[0.022]		[0.022]		[0.023]	
Family CEO	−1.223	(.171)	−0.868	(.318)	−0.443	(.626)
	[0.894]		[0.870]		[0.911]	
CEO family generation	0.451	(.170)	0.328	(.304)	−0.167	(.631)
	[0.329]		[0.319]		[0.349]	
Founder CEO	0.942	(.218)	0.559	(.465)	0.280	(.739)
	[0.764]		[0.766]		[0.839]	
Market performance	−0.003	(.001)	−0.003	(.001)	−0.003	(.003)
	[0.001]		[0.001]		[0.001]	
Family board membership	0.201	(.114)	0.199	(.125)	−0.076	(.602)
	[0.127]		[0.129]		[0.146]	
Previous alliance engagement	0.069	(.000)	0.069	(.000)	0.067	(.000)
	[0.005]		[0.005]		[0.005]	
CEO Machiavellianism			0.284	(.001)	0.232	(.011)
			[0.085]		[0.090]	
Family ownership					−0.075	(.055)
					[0.039]	
Interaction					0.028	(.006)
					[0.010]	
Constant	−5.467	(.000)	−6.664	(.000)	−6.324	(.000)
	[1.103]		[1.196]		[1.238]	
χ^2	496.16	(.000)	501.22	(.000)	516.42	(.000)
Observations	1,845		1,845		1,845	

Note. Standard errors are in brackets. GEE = generalized estimating equations; CEO = chief executive officer.

Table 4. GEE Models Predicting Strategic Alliance Sustainability.

	Model 4		Model 5		Model 6	
Control variable	β	*p*	β	*p*	β	*p*
Inverse Mills ratio	−0.239	(.349)	−0.289	(.264)	−0.307	(.236)
	[0.255]		[0.258]		[0.259]	
Firm size	−0.018	(.010)	−0.017	(.015)	−0.017	(.017)
	[0.007]		[0.007]		[0.007]	
High-tech industries	−0.064	(.002)	−0.064	(.002)	−0.064	(.002)
	[0.021]		[0.021]		[0.021]	
Board size	0.006	(.135)	0.006	(.122)	0.005	(.139)
	[0.004]		[0.004]		[0.004]	
CEO duality	−0.025	(.182)	−0.029	(.139)	−0.029	(.131)
	[0.019]		[0.019]		[0.019]	
CEO tenure	−0.001	(.629)	−0.001	(.593)	−0.001	(.663)
	[0.001]		[0.001]		[0.001]	
Long-term debt	−0.001	(.021)	−0.001	(.023)	−0.001	(.022)
	[0.001]		[0.001]		[0.001]	
Firm performance	−0.180	(.269)	−0.213	(.202)	−0.219	(.192)
	[0.163]		[0.167]		[0.167]	
CEO total compensation	−0.001	(.014)	−0.001	(.026)	−0.001	(.029)
	[0.001]		[0.001]		[0.001]	
CEO ownership	0.006	(.026)	0.006	(.016)	0.006	(.024)
	[0.002]		[0.002]		[0.002]	
Family CEO	0.068	(.233)	0.064	(.316)	0.094	(.057)
	[0.057]		[0.064]		[0.049]	
CEO family generation	0.026	(.326)	0.028	(.380)	0.004	(.821)
	[0.027]		[0.031]		[0.020]	
Founder CEO	−0.186	(.018)	−0.164	(.051)	−0.209	(.015)
	[0.078]		[0.084]		[0.086]	
Market performance	0.001	(.142)	0.001	(.133)	0.001	(.133)
	[0.001]		[0.001]		[0.001]	
Family board membership	0.007	(.729)	0.007	(.745)	0.003	(.891)
	[0.022]		[0.022]		[0.024]	
Previous alliance engagement	0.002	(.148)	0.002	(.135)	0.002	(.176)
	[0.001]		[0.001]		[0.001]	
CEO Machiavellianism			−0.031	(.043)	−0.036	(.024)
			[0.015]		[0.015]	
Family ownership					−0.013	(.027)
					[0.006]	
Interaction					0.003	(.011)
					[0.001]	
Constant	1.071	(.000)	1.219	(.000)	1.251	(.000)
	[0.180]		[0.195]		[0.197]	
χ^2	73.24	(.000)	77.95	(.000)	100.93	(.000)
Observations	1,845		1,845		1,845	

Note. Standard errors are in brackets. GEE = generalized estimating equations; CEO = chief executive officer.

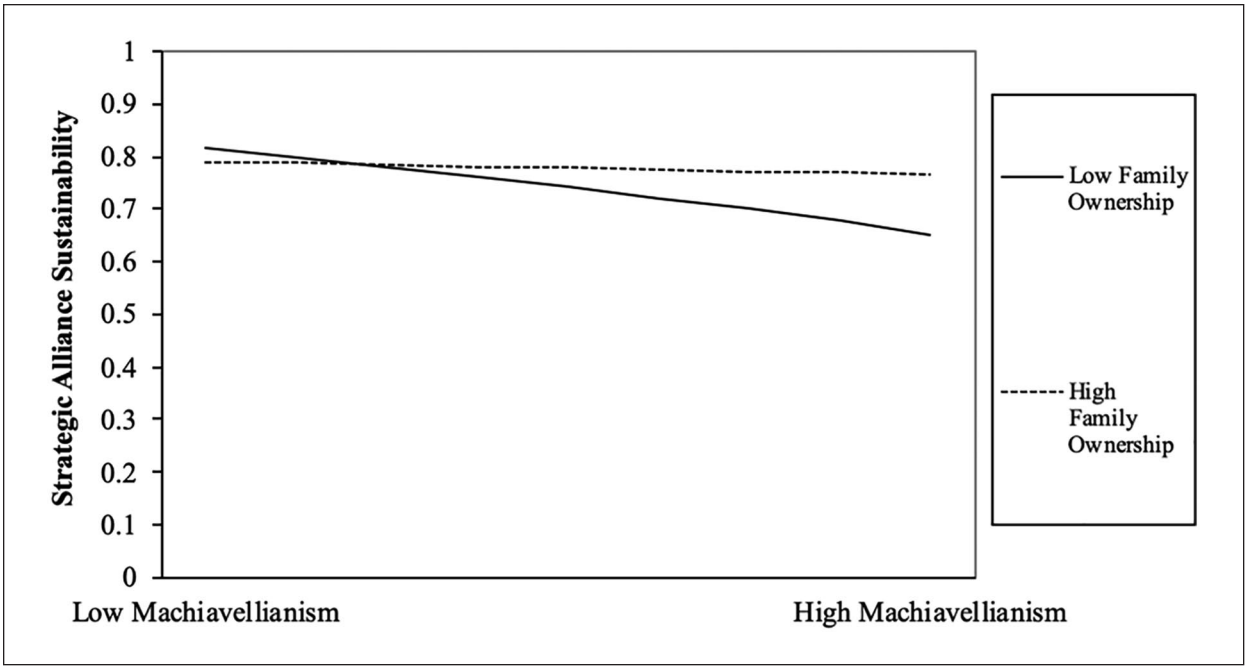

Figure 2. The interaction between CEO Machiavellianism and family ownership on strategic alliance sustainability.

into and/or desiring firms based on desired strategies (here, alliance tendencies; Hambrick, 2007). Similar issues pertain to studies of family firms (Anderson & Reeb, 2003). This leads us to believe that, in a qualitative sense, endogeneity may not be a significant issue in our study: It is difficult to imagine that a CEO high in Machiavellianism would not only seek out firms that engage in more alliances but also desire their alliances to be unsustainable; likewise, we see it as unlikely that family firms would desire such a strategy a priori and select a more Machiavellian CEO with this intended purpose. Nonetheless, we conducted multiple tests to examine whether endogeneity was a threat to our study.

First, following Petrenko et al. (2019), we tested the correlation in our models between our raw score of CEO Machiavellianism and the predicted residuals of our models. If endogeneity is present and thus might be biasing our results, the predicted residuals should be significantly correlated with our independent variable. We found that the raw score of CEO Machiavellianism is not correlated with the standard error terms for both our models (correlations at .022 and .027; *p* values between .280 and .428). These results indicate that our models do not violate the assumption of correlated error terms and thus suggest that endogeneity is not a significant concern.[4]

Given that we do not observe endogeneity (i.e., the independent variable is not correlated with the residual) and attempts to address the associated bias when it is not present can produce coefficients estimates that are inferior to those reported without such corrections (i.e., the "cure" is worse than the "disease"; Semadeni et al., 2014), we present our analyses without these endogeneity corrections as done in other strategic leadership studies (e.g., Petrenko et al., 2019). However, as a robustness test to help address whether endogeneity biases our estimated results, we followed previous studies (Chatterjee & Hambrick, 2007, 2011; Nadkarni et al., 2016) by adopting a two-step approach of predicting the possible endogenous variable and including it in our models. We created multiple endogeneity controls and tested them within our models; we found that our results are robust to various alternatives (additional details and analyses regarding endogeneity appear in the online appendix), enhancing the robustness of our analyses (cf. Certo et al., 2016; Semandeni et al., 2014).

We also ran additional tests to assess the robustness of our findings. First, since previous research notes the differences between lone-founder firms and family firms (Miller et al., 2011), we ran our analyses excluding the lone-founder firms in our sample. In our sample, this only includes five firms and 30 firm-year observations. We found that the results of this analysis did not change in terms of significance or directionality when compared with the inclusion of lone-founder firms; all four of our hypotheses were supported. Second, we ran additional robustness checks to test the reliability of our alliance measure. Consistent with previous research, we measured a firm's strategic alliance engagement by the total number of alliances a focal firm entered in the following year ($t + 1$). Our analyses indicated that CEO Machiavellianism was still a significant predictor of strategic alliance engagement ($b = .372$, $p = .002$) and this effect was still stronger as family ownership increased ($b = .030$, $p = .002$); our results were consistent in terms of directionality and significance. Altogether, these post hoc analyses provide strong evidence that endogeneity is not biasing the results of our study and help rule out possible alternative explanations for our findings.

Discussion

In this study, we sought to understand the role of CEO Machiavellianism in explaining the alliance behavior of family businesses. Anchored in upper echelons theory and psychology research on Machiavellianism (Chrisman et al., 2005; Hambrick & Mason, 1984; Nicholson, 2008), our study proposes and finds that more Machiavellian CEOs seek out strategic alliances (conceivably since they provide an opportunity to manipulate, control, and exploit others) but their manipulative and controlling behavioral tendencies result in alliances that are less sustainable. We also argue and find that the effects of CEO Machiavellianism are moderated by family firms. Since the owning family often intervenes and mitigates any concerns regarding the organization or its leadership, we argue and find that more Machiavellian CEOs are better able to engage in and sustain strategic alliances as family ownership increases in the organization. Our study has several implications for family business and strategic leadership research.

First, we contribute to family business and strategic leadership research by exploring an understudied yet prevalent trait in CEOs—Machiavellianism. Since CEOs enjoy greater influence over decisions in family firms (Nicholson, 2008) and their decisions are often sustained longer compared with nonfamily businesses (Le Breton-Miller & Miller, 2008), it is especially important for the family business literature to better understand this prevalent and impactful trait in CEOs. We present and test a theory of how more Machiavellian CEOs affect the decisions surrounding strategic alliances and how the presence of family ownership allows their manipulative behaviors to perpetuate. In doing so, our study provides a novel rationale for the decisions behind strategic alliances in family businesses and opens a new avenue for future studies. Furthermore, our study extends research in family business by showing how dark personality traits in CEOs, such as Machiavellianism, may offer an alternative to the classical mechanisms explaining the actions of family firms identified in the family business literature (e.g., Zellweger et al., 2013).

A second important contribution of our study is highlighting the influence of an owning family in the organization. While many studies have noted that the presence of family ownership influences the decisions of their own firm (Andres, 2011; Burgstaller & Wagner, 2015; Chandler et al., 2019), this study argues and finds evidence that the presence of an owning family can influence the decisions of organizations other than their own (i.e., alliance partners). As such, we show in this study that the presence of an owning family can perpetuate the manipulative and controlling behaviors of Machiavellian CEOs since their alliance partners might see the tendency of owning family members to intervene and mitigate any unfavorable behaviors that might arise with the firm's leadership (Chandler et al., 2016; Ward, 2016) as a justification to continue their involvement with the alliance. As such, our study extends the literature by showing another way in which owning family members influence their firms.

Beyond our theoretical contributions, our study also makes a novel contribution to the measurement of CEO Machiavellianism. The videometric approach utilized in this article provides avenues that bypass the methodological limitations that come with studying personality traits in CEOs (e.g., Chatterjee & Hambrick, 2007, 2011; Li & Tang, 2010; Malmendier & Tate, 2005; Tang

et al., 2012). While psychologists emphasize the need to measure Machiavellianism through observer report measures by clinical psychologists (Fowler et al., 2009; Oltmanns et al., 2004), our study answers this call by recruiting PhD students in clinical psychology to watch and rate CEOs through short video clips (Gupta et al., 2019; Gupta & Misangyi, 2018; Petrenko et al., 2019). In doing so, our study introduces a platform for the family business literature to advance theory regarding how CEO traits, like Machiavellianism, affect the strategies of family firms. At the same time, our approach may be useful for assessments of other populations of interest for whom self-reports may be difficult to obtain or subject to bias but where videographic evidence is present. Given the substantial increase in videographic data in recent years, our study offers a tool for researchers to leverage such data going forward.

Our study should also be viewed in light of its limitations. First, our study does not theoretically or empirically examine other dark personality traits in CEOs that may overlap with Machiavellianism. Due to potential similarities, three main constructs are relevant for this comparison: narcissism, hubris/overconfidence, and psychopathy. Narcissism is defined as a consuming self-absorption or self-love that encompasses a need for acclaim and social approval (Chatterjee & Hambrick, 2007, 2011), hubris/overconfidence is conceptualized as a tendency to overestimate one's ability (Hayward & Hambrick, 1997; Hill et al., 2012), and psychopathy is a personality trait that involves persistent antisocial behavior, impaired empathy and remorse, and bold, controlling, and egotistical traits (American Heritage Dictionary, 2010). One implication of our not examining these traits theoretically is that we would not have made the same predictions about CEOs high in these traits as we made for CEOs high in Machiavellianism (i.e., narcissistic CEOs may view alliances as unappealing as they inherently involve another CEO who would share any praise that stems from the partnership, hubristic CEOs likely see the need to partner as unnecessary given their self-perception of superior ability, and psychopathic CEOs would likely not partner given their antisocial tendencies). Given that we do not expect these traits to predict the alliance activity of family firms, along with other major data limitations associated with measuring each trait in CEOs through the videometric technique (i.e., there is no existing psychometrically valid instrument to assess hubris; Bollaert & Petit, 2010; Hill, Kern, & White, 2014), we do not empirically control for these traits in our models. While this is in line with other strategic leadership studies examining the dark traits of CEOs (e.g., Chatterjee & Hambrick, 2007, 2011; Gupta & Misangyi, 2018; Petrenko et al., 2019), our study is limited to the extent that these other traits influence the alliance activity of organizations. Future studies on strategic leadership should further examine the interplay of these traits in CEOs to better understand how each influences their organizational behavior.

Another potential limitation of our study is our measure of strategic alliance sustainability. As mentioned above, researchers have long noted that examining strategic alliances is inherently difficult (e.g., Nielsen, 2010; Bruyaka et al., 2018) because SDC Platinum—the most thorough and widely used database for alliance research (Schilling, 2008)—only captures the total number of strategic alliances for a firm in each year, without giving much detail about each individual alliance, such as the actual duration (i.e., sustainability) of the alliance. Due to these data limitations, we could not measure the sustainability of each individual alliance that was engaged in by each firm at the specific alliance level and instead measured the overall sustainability of a firm's alliance activities. While we believe that our measure represents the best available proxy measure for sustainability of alliance activity, our study is limited due to the confines of SDC Platinum. As these data become available, future research should attempt to replicate our results by measuring strategic alliance sustainability at the specific alliance level.

Conclusion

Despite decades of research on CEOs in family firms (Barach & Ganitsky, 1995; Braun & Sharma, 2007; Dumas, 1990; Tsai et al., 2006), we still know very little about how an important yet understudied personality trait in CEOs affects family firms: Machiavellianism. Using upper echelons theory, we show that Machiavellian CEOs are more likely to engage in strategic alliances that are inherently less sustainable and that such behaviors are perpetuated as the family ownership in a firm increases. Our study advances family business and strategic leadership research by providing CEO Machiavellianism as a novel predictor of alliance decisions in organizations and

detailing a methodological platform for family business researchers to assess CEO personality traits in future studies.

Declaration of Conflicting Interests

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Following other videometric studies, we specify this time frame since both ends of the sample represent the year of the oldest (2000) and most recent (2016) videos collected from our videometric approach. Following other studies (Petrenko et al., 2016), the average length of our videos was 2.5 minutes to avoid rater fatigue. Furthermore, because of our panel data set, the average number of years a CEO has in that position with his or her firm is 5.96 in our sample.
2. We compared all variables that were available for the broader population of the study (*p* values ranging between .319 and .899).
3. Vella (1998) argues that underlying selection processes may have both a static and a dynamic component and, thus, may be best addressed via two variables—one estimated without time variables to capture the static process and one estimate that includes time dummies (here, year) to capture the dynamic process. Following this recommendation, we repeated the steps outlined above but added time dummies in the first-stage model before deriving a second IMR, or IMR2 (see the online Appendix B). Our results did not change in terms of significance or directionality with the inclusion of both IMR and IMR2 (see the online appendix). The coefficients on the resulting IMR and IMR2 that were generated—generally referred to as lambda—are not consistently related to our dependent variables. As Certo et al. (2016) note, "It is difficult to assess the sample selection bias on the basis of lambda alone" as "it is important to note that observing a significant lambda . . . does not denote sample selection bias," while if "lambda is insignificant . . . [they] caution against dismissing potential sample selection bias" (p. 2649); ultimately, they recommend (a) assessing the correlation of the independent variable with the error term (as we report below, we find no such correlation, suggesting that an IMR may be extraneous) and (b) comparing multiple models. To this end, importantly, our results are unaffected by including or excluding either IMR or both IMR and IMR2 (see the online appendix for results), enhancing the robustness of our findings. We thank an anonymous reviewer for this idea.
4. This issue is also further addressed in the section on additional analysis and robustness checks. To examine the possibility of reverse causality, we followed Short and colleagues (2018) and regressed our measure of CEO Machiavellianism on strategic alliance activity. We found that alliance activity in firms did not significantly predict the levels of Machiavellianism in CEOs.

References

Ahrens, J., Calabro, A., Huybrechts, J., & Woywode, M. (2019). The enigma of the family successor–firm performance relationship: A methodological reflection and reconciliation attempt. *Entrepreneurship Theory and Practice*, *43*(3), 437-474. https://doi.org/10.1177/1042258718816290

Anderson, R. C., & Reeb, D. M. (2003). Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance*, *58*(3), 1301-1328. https://doi.org/10.1111/1540-6261.00567

Anderson, R. C., & Reeb, D. M. (2004). Board composition: Balancing family influence in S&P 500 Firms., *Administrative Science Quarterly*, *49*(2), 209-237. https://doi.org/10.2307/4131472

Andres, C. (2011). Family ownership, financing constraints and investment decisions. *Applied Financial Economics*, *21*(22), 1641–1659. https://doi.org/10.1080/09603107.2011.589805

Arend, R. J., & Seale, D. A. (2005). Modeling alliance activity: An iterated prisoners' dilemma with exit option. *Strategic Management Journal*, *26*(11), 1057-1074. https://doi.org/10.1002/smj.491

Austin, E. J., Farrelly, D., Black, C., & Moore, H. (2007). Emotional intelligence, Machiavellianism and emotional manipulation: Does EI have a dark side? *Personality and Individual Differences*, *43*(1), 179-189. https://doi.org/10.1016/j.paid.2006.11.019

Bae, J., & Insead, M. G. (2004). Partner substitutability, alliance network structure, and firm profitability in the telecommunications industry. *Academy of Management Journal*, *47*(6), 843-859. https://doi.org/10.5465/20159626

Ballinger, G. A., & Marcel, J. J. (2010). The use of an interim CEO during succession episodes and firm performance. *Strategic Management Journal*, *31*(3), 262-283. https://doi.org/10.1002/smj.808

Barach, J. A., & Ganitsky, J. B. (1995). Successful succession in family business. *Family Business Review*, *8*(2), 131-155. https://doi.org/10.1111/j.1741-6248.1995.00131.x

Boling, J., Pieper, T., & Covin, J. (2016). CEO tenure and entrepreneurial orientation within family and nonfamily firms. *Entrepreneurship Theory and Practice*, *40*(4), 891-913. https://doi.org/10.1111/etap.12150

Bollaert, H., & Petit, V. (2010). Beyond the dark side of executive psychology: Current research and new directions. *European Management Journal*, *28*(5), 362-376. https://doi.org/10.1016/j.emj.2010.01.001

Braun, M., & Sharma, A. (2007). Should the CEO also be chair of the board? An empirical examination of family-controlled public firms. *Family Business Review*, *20*(2), 111-126. https://doi.org/10.1111/j.1741-6248.2007.00090.x

Brinke, L. T., Black, P. J., Porter, S., & Carney, D. R. (2015). Psychopathic personality traits predict competitive wins and cooperative losses in negotiation. *Personality and Individual Differences*, *79*, 116-122. https://doi.org/10.1016/j.paid.2015.02.001

Brouthers, K. D., Brouthers, L. E., & Wilkinson, T. J. (1995). Strategic alliances: Choose your partners. *Long Range Planning*, *28*(3), 18-25. https://doi.org/10.1016/0024-6301(95)00008-7

Bruyaka, O., Philippe, D., & Castaner, X. (2018). Run away or stick together? The impact of organization-specific adverse events on alliance partner defection. *Academy of Management Review*, *43*(3), 445-469. https://doi.org/10.5465/amr.2014.0323

Burgstaller, J., & Wagner, E. (2015). How do family ownership and founder management affect capital structure decisions and adjustment of SMEs? *Journal of Risk Finance*, *16*(1), 73-101. https://doi.org/10.1108/JRF-06-2014-0091

Campbell, R. J., Jeong, S., & Graffin, S. D. (2019). Born to take risk? The effect of CEO birth order on strategic risk taking. *Academy of Management Journal*, *62*(4), 1278-1306. https://doi.org/10.5465/amj.2017.0790

Certo, S. T., Busenbark, J. R., Woo, H. S., & Semadeni, M. (2016). Sample selection bias and Heckman models in strategic management research. *Strategic Management Journal*, *37*(13), 2639-2657. https://doi.org/10.1002/smj.2475

Certo, S. T., Covin, J. G., Daily, C. M., & Dalton, D. R. (2001). Wealth and the effects of founder management among IPO-stage new ventures. *Strategic Management Journal*, *22*(6-7), 641-658. https://doi.org/10.1002/smj.182

Chandler, J. A., Payne, G. T., Moore, C., & Brigham, K. H. (2019). Family involvement signals in initial public offerings. *Journal of Family Business Strategy*, *10*(1), 8-16. https://doi.org/10.1016/j.jfbs.2019.01.004

Chandler, J. A., Zachary, M. A., Brigham, K. H., & Payne, G. T. (2016). Long-term orientation: Reviewing the past and identifying future opportunities for family business research. In F. W. Kellermanns & F. Hoy (Eds.), *The Routledge companion to family business* (pp. 100-119). Routledge.

Chatterjee, A., & Hambrick, D. C. (2007). It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. *Administrative Science Quarterly*, *52*(3), 351-386. https://doi.org/10.2189/asqu.52.3.351

Chatterjee, A., & Hambrick, D. C. (2011). Executive personality, capability cues, and risk-taking: How narcissistic CEOs react to their successes and stumbles. *Administrative Science Quarterly*, *56*(2), 202-237. https://doi.org/10.1177/0001839211427534

Chrisman, J. J., Chua, J. H., & Sharma, P. (2005). Trends and directions in the development of a strategic management theory of the family firm. *Entrepreneurship Theory and Practice*, *29*(5), 555-576. https://doi.org/10.1111/j.1540-6520.2005.00098.x

Chrisman, J. J., & Patel, P. C. (2012). Variations in R&D investments of family and nonfamily firms: Behavioral agency and myopic loss aversion perspectives. *Academy of Management Journal*, *55*(4), 976-997. https://doi.org/10.5465/amj.2011.0211

Christie, R., & Geis, F. L. (1970). *Studies in Machiavellianism*. Academic Press. https://doi.org/10.1016/B978-0-12-174450-2.50006-3

Churchwell, C. (2016, January 25). *Fast answers*. Harvard Business School. https://asklib.library.hbs.edu/faq/47760

Connelly, B. S., & Ones, D. S. (2010). An other perspective on personality: Meta-analytic integration of observers' accuracy and predictive validity. *Psychological Bulletin*, *36*(6), 1092-1122. https://doi.org/10.1037/a0021212

Cooper, S., & Peterson, C. (1980). Machiavellianism and spontaneous cheating in competition. *Journal of Research in Personality*, *14*(1), 70-75. https://doi.org/10.1016/0092-6566(80)90041-0

Cycyota, C. S., & Harrison, D. A. (2006). What (not) to expect when surveying executives. *Organizational Research Methods*, *9*(2), 133-160. https://doi.org/10.1177/1094428105280770

Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm*. Prentice Hall.

Dahling, J. J., Whitaker, B. G., & Levy, P. E. (2009). The development and validation of a new Machiavellianism scale. *Journal of Management*, *35*(2), 219-257. https://doi.org/10.1177/0149206308318618

Das, T. K., & Rahman, N. (2001). Partner misbehaviour in strategic alliances: Guidelines for effective deterrence. *Journal of General Management*, *27*(1), 43-70. https://doi.org/10.1177/030630700102700103

Das, T. K., & Teng, B. S. (1998). Between trust and control: Developing confidence in partner cooperation in alliances. *Academy of Management Review*, *23*(3), 491-512. https://doi.org/10.5465/amr.1998.926623

Deephouse, D. L., & Jaskiewicz, P. (2013). Do family firms have better reputations than non-family firms? An integration of socioemotional wealth and social identity theories. *Journal of Management Studies*, *50*(3), 337-360. https://doi.org/10.1111/joms.12015

Den Hartog, D. N., & Belschak, F. D. (2012). Work engagement and Machiavellianism in the ethical leadership process. *Journal of Business Ethics*, *107*(1), 35-47. https://doi.org/10.1007/s10551-012-1296-4

Dewaele, J., & Furnham, A. (1999). Extraversion: The unloved variable in applied linguistic research. *Language Learning*, *49*(3), 509-544. https://doi.org/10.1111/0023-8333.00098

Dumas, C. A. (1990). Preparing the new CEO: Managing the father–daughter succession process in family businesses. *Family Business Review*, *3*(2), 169-181. https://doi.org/10.1111/j.1741-6248.1990.00169.x

Eisenhardt, K. M., & Schoonhoven, C. B. (1996). Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science*, *7*(2), 136-150. https://doi.org/10.1287/orsc.7.2.136

Fehr, B., Samson, D., & Paulhus, D. R. (1992). The construct of Machiavellianism: Twenty years later. In C. D. Spielberger & J. N. Butcher (Eds.), *Advances in personality assessment* (pp. 77-116). Lawrence Erlbaum.

Finkelstein, S. (1992). Power in top management teams: Dimensions, measurement, and validation. *Academy of Management Journal*, *35*(3), 505-538. https://doi.org/10.5465/256485

Fischer, H. M., & Pollock, T. G. (2004). Effects of social capital and power on surviving transformational change: The case of initial public offerings. *Academy of Management Journal*, *47*(4), 463-481. https://doi.org/10.2307/20159597

Fowler, K. A., Lilenfeld, S. O., & Patrick, C. J. (2009). Detecting psychopathy from thin slices of behavior. *Psychological Assessments*, *21*(1), 68-78. https://doi.org/10.1037/a0014938

Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The dark triad of personality: A 10 year review. *Social & Personality Psychology Compass*, *7*(3), 199-216. https://doi.org/10.1111/spc3.12018

Geis, F. L., & Moon, T. H. (1981). Machiavellianism and deception. *Journal of Personality and Social Psychology*, *41*(4), 766-775. https://doi.org/10.1037/0022-3514.41.4.766

Gomez-Mejia, L. R., Neacsu, I., & Martin, G. (2019). CEO risk-taking and socioemotional wealth: The behavioral agency model, family control, and CEO option wealth. *Journal of Management*, *45*(4), 1713-1738. https://doi.org/10.1177/0149206317723711

Goodstein, J., Gautam, K., & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic Management Journal*, *15*(3), 241-250. https://doi.org/10.1002/smj.4250150305

Greenbaum, R. L., Hill, A., Mawritz, M. B., & Quade, M. J. (2017). Employee Machiavellianism to unethical behavior. *Journal of Management*, *43*(2), 585-609. https://doi.org/10.1177/0149206314535434

Gunnthorsdottir, A., McCabe, K., & Smith, V. (2002). Using the Machiavellianism to predict trustworthiness in a bargaining game. *Journal of Economic Psychology*, *23*(1), 49-66. https://doi.org/10.1016/S0167-4870(01)00067-8

Gupta, A., & Misangyi, V. F. (2018). Follow the leader (or not): The influence of peer CEOs' characteristics on interorganizational imitation. *Strategic Management Journal*, *39*(5), 1437-1472. https://doi.org/10.1002/smj.2765

Gupta, A., Nadkarni, S., & Mariam, M. (2019). Dispositional sources of managerial discretion: CEO ideology, CEO personality, and firm strategies. *Administrative Science Quarterly*, *64*(4), 855-893. https://doi.org/10.1177/0001839218793128

Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. (2009). Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of Management*, *35*(3), 469-502. https://doi.org/10.1177/0149206308330554

Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, *32*(2), 334-343. https://doi.org/10.5465/amr.2007.24345254

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, *9*(2), 193-206. https://doi.org/10.5465/amr.1984.4277628

Hardin, J. W., & Hilbe, J. M. (2012). *Generalized estimating equations*. Chapman & Hall/CRC Press. https://doi.org/10.1201/b13880

Harrell, W. A., & Hartnagel, T. (1976). The impact of Machiavellianism and the trustfulness of the victim on laboratory theft. *Sociometry*, *39*(2), 157-165. https://doi.org/10.2307/2786216

Harrison, J. S., Hitt, M. A., Hoskisson, R. E., & Ireland, R. D. (2001). Resource complementarity in business combinations: Extending the logic to organizational alliances. *Journal of Management*, *27*(6), 679-690. https://doi.org/10.1177/014920630102700605

Hayward, M., & Hambrick, D. C. (1997). Explaining the premiums paid for large acquisitions: Evidence of CEO hubris. *Administrative Science Quarterly*, *42*(1), 103-127. https://doi.org/10.2307/2393810

Heckman, J. J. (1976). The common structure of statistical models of truncation, sample selection and limited dependent variables and a simple estimator for such models. *Annals of Economic and Social Measurement*, *5*(4), 475-492.

Hill, A. D., Kern, D. A., & White, M. A. (2012). Building understanding in strategy research: The importance of employing consistent terminology and convergent measures. *Strategic Organization*, *10*(2), 187-200. https://doi.org/10.1177/1476127012445239

Hill, A. D., Kern, D. A., & White, M. A. (2014). Are we overconfident in executive overconfidence research? An examination of the convergent and content validity of extant unobtrusive measures. *Journal of Business Research*, *67*(7), 1414-1420. https://doi.org/10.1016/j.jbusres.2013.08.011

Hill, A., Petrenko, O., Ridge, J., & Aime, F. (2019). Videometric measurement of individual characteristics in difficult to access subject pools: Demonstrating with CEOs. In D. Ketchen & D. Bergh (Eds.), *Research methodology in strategy and management* (Vol. 11, pp. 39-61). Emerald. https://doi.org/10.1108/S1479-838720190000011005

Hill, A., White, M., & Wallace, J. (2014). Unobtrusive measurement of psychological constructs in organizational research. *Organizational Psychology Review*, *4*(2), 147-173. https://doi.org/10.1177/2041386613505613

Hubbard, T. D., Pollock, T. G., Pfarrer, M. D., & Rindova, V. P. (2018). Safe bets or hot hands? How status and celebrity influence strategic alliance formations by newly public firms. *Academy of Management Journal*, *61*(5), 1976-1999. https://doi.org/10.5465/amj.2016.0438

Jones, D. N., & Paulhus, D. L. (2009). Machiavellianism. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of individual differences in social behavior* (pp. 93-108). Guilford Press.

Judge, T. A., Piccolo, R. F., & Kosalka, T. (2009). The bright and dark sides of leader traits: A review and theoretical extension of the leader trait paradigm. *Leadership Quarterly*, *20*(6), 855-875. https://doi.org/10.1016/j.leaqua.2009.09.004

Kasznik, R., & Lev, B. (1995). To warn or not to warn: Management disclosures in the face of an earnings surprise. *Accounting Review*, *70*(1), 113-134.

Kelleci, R., Lambrechts, F., & Voordeckers, W. (2019). CEO personality: A different perspective on the nonfamily versus family CEO debate. *Family Business Review*, *32*(1), 31-57. https://doi.org/10.1177/0894486518811222

Kessler, S. R., Bandelli, A. C., Spector, P. E., Borman, W. C., Nelson, C. E., & Penney, L. M. (2010). Re-examining Machiavelli: A three-dimensional model of Machiavellianism in the workplace. *Journal of Applied Social Psychology*, *40*(8), 1868-1896. https://doi.org/10.1111/j.1559-1816.2010.00643.x

Kinni, T. (2013, November 20). *A call for true Machiavellian leadership*. strategy+business. https://www.strategy-business.com/blog/A-Call-for-True-Machiavellian-Leadership?gko=07567

Kish-Gephart, J. J., Harrison, D. A., & Treviño, L. K. (2010). Bad apples, bad cases, and bad barrels: Meta-analytic evidence about sources of unethical decisions at work. *Journal of Applied Psychology*, *95*(1), 1-31. https://doi.org/10.1037/a0017103

Krishnan, R., Geyskens, I., & Steenkamp, J. E. M. (2016). The effectiveness of contractual and trust-based governance in strategic alliances under behavioral and environmental uncertainty. *Strategic Management Journal*, *37*(12), 2521-2542. https://doi.org/10.1002/smj.2469

Le Breton-Miller, I., & Miller, D. (2008). To grow or to harvest? Governance, strategy, and performance in family and lone founder firms. *Journal of Strategy and Management*, *1*(1), 41-56. https://doi.org/10.1108/17554250810909419

Li, J., & Tang, Y. (2010). CEO hubris and firm risk taking in China: The moderating role of managerial discretion. *Academy of Management Journal*, *53*(1), 45-68. https://doi.org/10.5465/amj.2010.48036912

Liang, K. Y., & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika*, *73*(1), 13-22. https://doi.org/10.1093/biomet/73.1.13

Linton, D. K., & Wiener, N. I. (2001). Personality and potential conceptions: Mating success in a modern Western male sample. *Personality and Individual Differences*, *31*(5), 675-688. https://doi.org/10.1016/S0191-8869(00)00170-7

Machiavelli, N. (1966). *The prince*. Bantam. (Original work published 1513)

Malhotra, S., Reus, T. H., Zhu, P., & Roelofsen, E. M. (2018). The acquisitive nature of extraverted CEOs. *Administrative Science Quarterly*, *63*(2), 370-408. https://doi.org/10.1177/0001839217712240

Malmendier, U., & Tate, G. (2005). CEO overconfidence and corporate investment. *Journal of Finance*, *60*(6), 2661-2700. https://doi.org/10.1111/j.1540-6261.2005.00813.x

March, J. C., & Simon, H. A. (1958). *Organizations*. Wiley.

Maritain, J. (1942). The end of Machiavellianism. *Review of Politics*, *4*(1), 1-33. https://doi.org/10.1017/S0034670500003235

Matsumoto, D., Pronk, M., & Roelofsen, E. (2011). What makes conference calls useful? The information content of managers' presentations and analysts' discussion sessions. *Accounting Review*, *86*(4), 1383-1414. https://doi.org/10.2308/accr-10034

McHoskey, J. (1999). Machiavellianism, intrinsic versus extrinsic goals, and social interest: A self-determination theory analysis. *Motivation and Emotion*, *23*(4), 267-283. https://doi.org/10.1023/A:1021338809469

Miller, D., Le Breton-Miller, I., & Lester, R. H. (2011). Family and lone founder ownership and strategic behaviour: Social context, identity, and institutional logics. *Journal of Management Studies*, *48*(1), 1-25. https://doi.org/10.1111/j.1467-6486.2009.00896.x

Miller, J. S., Wiseman, R. M., & Gomez-Mejia, L. R. (2002). The fit between CEO compensation design and firm risk. *Academy of Management Journal*, *45*(4), 745-756. https://doi.org/10.2307/3069308

Nadkarni, S., Chen, T., & Chen, J. (2016). The clock is ticking! Executive temporal depth, industry velocity, and competitive aggressiveness. *Strategic Management Journal*, *37*(6), 1132-1153. https://doi.org/10.1002/smj.2376

Nelson, T. (2003). The persistence of founder influence: Management, ownership, and performance effects at initial public offering. *Strategic Management Journal*, *24*(8), 707-724. https://doi.org/10.1002/smj.328

Nicholson, N. (2008). Evolutionary psychology and family business: A new synthesis for theory, research, and practice. *Family Business Review*, *21*(1), 103-118. https://doi.org/10.1111/j.1741-6248.2007.00111.x

Nsehe, M. (2011, July 13). 5 Machiavellian business lessons from billionaire Aliko Dangote. *Forbes*. https://www.forbes.com/sites/mfonobongnsehe/2011/07/13/5-machiavellian-business-lessons-from-billionaire-aliko-dangote/#6b0047b36930

Nielsen, B. B. (2010). Multilevel issues in strategic alliance research. *Researching strategic alliances: Emerging issues*, 1–26.

O'Boyle, E. H., Forsyth, D. R., Banks, G. C., & McDaniel, M. A. (2012). A meta-analysis of the dark triad and work behavior: A social exchange perspective. *Journal of Applied Psychology*, *97*(3), 557-579. https://doi.org/10.1037/a0025679

Oltmanns, T. F., Friedman, J. N., Fiedler, E. R., & Turkheimer, E. (2004). Perceptions of people with personality disorders based on thin slices of behavior. *Journal of Research in Personality*, *38*(3), 216-229. https://doi.org/10.1016/S0092-6566(03)00066-7

Ou, A. Y., Tsui, A. S., Kinicki, A. J., Waldman, D. A., Xiao, Z., & Song, L. J. (2014). Humble chief executive officers' connections to top management team integration and middle managers' responses. *Administrative Science Quarterly*, *59*(1), 34-72. https://doi.org/10.1177/0001839213520131

Owen-Smith, J., & Powell, W. W. (2004). Knowledge networks as channels and conduits: The effects of spillovers in the Boston biotechnology community. *Organization Science*, *15*(1), 5-21. https://doi.org/10.1287/orsc.1030.0054

Paal, T., & Bereczkei, T. (2007). Adult theory of mind, cooperation, Machiavellianism: The effect of mindreading on social relations. *Personality and Individual Differences*, *43*(3), 541-551. https://doi.org/10.1016/j.paid.2006.12.021

Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, *36*(6), 556-563. https://doi.org/10.1016/S0092-6566(02)00505-6

Petrenko, O. V., Aime, F., Recendes, T., & Chandler, J. A. (2019). The case for humble expectations: CEO humility and market performance. *Strategic Management Journal*, *40*(12), 1938-1964. https://doi.org/10.1002/smj.3071

Petrenko, O. V., Aime, F., Ridge, J., & Hill, A. (2016). Corporate social responsibility or CEO narcissism? CSR motivations and organizational performance. *Strategic Management Journal*, *37*(2), 262-279. https://doi.org/10.1002/smj.2348

Picone, P. M., Dagnino, G. B., & Mina, A. (2014). The origin of failure: A multidisciplinary appraisal of the hubris hypothesis and proposed research agenda. *Academy of Management Perspectives*, *28*(4), 447-468. https://doi.org/10.5465/amp.2012.0177

Podolny, J. M. (2001). Networks as the pipes and prisms of the market. *American Journal of Sociology*, *107*(1), 33-60. https://doi.org/10.1086/323038

Quigley, T. J., & Hambrick, D. C. (2012). When the former CEO stays on as board chair: Effects on successor discretion, strategic change, and performance. *Strategic Management Journal*, *33*(7), 834-859. https://doi.org/10.1002/smj.1945

Raskin, R., Novacek, J., & Hogan, R. (1991). Narcissistic self-esteem management. *Journal of Personality and Social Psychology*, *60*(6), 911-918. https://doi.org/10.1037/0022-3514.60.6.911

Rauthmann, J. F., & Kolar, G. P. (2012). How "dark" are the dark triad traits? Examining the perceived darkness of narcissism, Machiavellianism, and psychopathy. *Personality and Individual Differences*, *53*(7), 884-889. https://doi.org/10.1016/j.paid.2012.06.020

Rosenstein, J., Bruno, A. V., Bygrave, W. D., & Taylor, N. T. (1993). The CEO, venture capitalists, and the board. *Journal of Business Venturing*, *8*(2), 99-113. https://doi.org/10.1016/0883-9026(93)90014-V

Schilling, M. A. (2008). Understanding the alliance data. *Strategic Management Journal*, *30*(3), 233-260. https://doi.org/10.1002/smj.731

Semadeni, M., Withers, M. C., & Certo, S. T. (2014). The perils of endogeneity and instrumental variables in strategy research: Understanding through simulations. *Strategic Management Journal*, *35*(7), 1070-1079. https://doi.org/10.1002/smj.2136

Sharma, P., Chrisman, J. J., Chua, J. H., & Steier, L. P. (2020). Family firm behavior from a psychological perspective. *Entrepreneurship Theory and Practice*, *44*(1), 3-19. https://doi.org/10.1177/1042258719879675

Short, J. C., Zachary, M. A., & Ketchen, D. J., Jr. (2018). Entrepreneurial orientation rhetoric and franchise system size: The moderating role of military veteran recruitment. *Journal of Business Venturing Insights*, *10*, Art. No. e00097. https://doi.org/10.1016/j.jbvi.2018.e00097

Siegel, S., & Castellan, N. (1988). *Nonparametrics for the behavioral sciences* (2nd ed.). McGraw-Hill.

Slepian, M. L., Bogart, K. R., & Ambady, N. (2014). Thin-slice judgments in the clinical context. *Annual Review*

of Clinical Psychology, *10*(1), 131-153. https://doi.org/10.1146/annurev-clinpsy-090413-123522

Smith, M. B., Hill, A. D., Wallace, J. C., Recendes, T., & Judge, T. A. (2018). Upsides to dark and downsides to bright personality: A multidomain review and future research agenda. *Journal of Management*, *44*(1), 191-217. https://doi.org/10.1177/0149206317733511

Stern, I., Dukerich, J. M., & Zajac, E. (2014). Unmixed signals: How reputation and status affect alliance formation. *Strategic Management Journal*, *35*(4), 512-531. https://doi.org/10.1002/smj.2116

Stinchcombe, A. L. (1965). Social structure and organizations. In J. G. March (Ed.), *Handbook of organizations* (pp. 142-193). Rand McNally.

Stuart, T. E. (1998). Network positions and propensities to collaborate: An investigation of strategic alliance formation in a high-technology industry. *Administrative Science Quarterly*, *43*(3), 668-698. https://doi.org/10.2307/2393679

Tang, Y., Li, J., & Yang, H. (2012). What I see, what I do. *Journal of Management*, *41*(6), 1698-1723. https://doi.org/10.1177/0149206312441211

Tobak, S. (2011, February 15). 10 Business and leadership lessons: From Machiavelli. *CBS News*. https://www.cbsnews.com/news/10-business-and-leadership-lessons-from-machiavelli/

Tsai, W., Hung, J., Kuo, Y., & Kuo, L. (2006). CEO tenure in Taiwanese family and nonfamily firms: An agency theory perspective. *Family Business Review*, *19*(1), 11-28. https://doi.org/10.1111/j.1741-6248.2006.00057.x

Vella, F. (1998). Estimating models with sample selection bias: A survey. *Journal of Human Resources*, *33*(1), 127-169. https://doi.org/10.2307/146317

Ward, J. L. (2016). *Keeping the family business healthy: How to plan for continuous growth, profitability, and family leadership*. Jossey-Bass.

Westphal, J. D., & Bednar, M. K. (2005). Pluralistic ignorance in corporate boards and firms' strategic persistence in response to low firm performance. *Administrative Science Quarterly*, *50*(2), 262-298. https://doi.org/10.2189/asqu.2005.50.2.262

Whiten, A., & Byrne, R. B. (1988). Taking (Machiavellian) intelligence apart. In R. Byrne & A. Whiten (Eds.), *Machiavellian intelligence* (pp. 50-66). Oxford University Press.

Wiggins, J. S., & Broughton, R. (1985). The interpersonal circle: A structural model for the integration of personality research. *Perspectives in Personality*, *1*, 1-47.

Williamson, O., & Ouchi, W. (1981). The markets and hierarchies and visible hand perspectives. In A. H. Van de Ven & W. F. Joyce (Eds.), *Perspectives on organizational design and behavior* (pp. 347-370). Wiley.

Wilson, D. S., Near, D., & Miller, R. R. (1996). Machiavellianism: A synthesis of the evolutionary and psychological literatures. *Psychological Bulletin*, *119*(2), 285-299. https://doi.org/10.1037/0033-2909.119.2.285

Zellweger, T. M., Nason, R. S., Nordqvist, M., & Brush, C. G. (2013). Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Entrepreneurship Theory and Practice*, *37*(2), 229-248. https://doi.org/10.1111/j.1540-6520.2011.00466.x

Zhou, X. (2001). Understanding the determinants of managerial ownership and the link between ownership and performance: Comment. *Journal of Financial Economics*, *62*(3), 559-571. https://doi.org/10.1016/S0304-405X(01)00085-X

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