Top Management Team Characteristics and Organizational Virtue Orientation: An Empirical Examination of IPO Firms

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ABSTRACT: Despite extensive research on organizational virtue, our understanding about factors that promote virtue within organizations remains unclear. Drawing on upper echelon theory, we examine the relationship between five top management team (TMT) characteristics and organizational virtue orientation (OVO)—the integrated set of values and beliefs that support ethical traits and virtuous behaviors of an organization. Specifically, we utilize prospectuses of initial public offering (IPO) firms and 10-K post-IPO filings to explore how TMT composition with respect to member age, tenure, education, functional background, and gender influences OVO. Additionally, we examine the moderating effects of organizational size, and argue that the more expansive structures and processes associated with larger organizations diminish the main relationships. Our findings, using two sources of data, are consistent, but somewhat mixed in their support for our hypotheses. Overall, TMT characteristics do appear to influence OVO, but in more complex and counterintuitive ways than initially expected.

KEY WORDS: ethics, virtue, upper echelon, top management team, initial public offerings

The high-profile collapses of major corporations in the last several decades—often traced back to ethical transgressions originating in the executive suite—has spawned a renewed level of interest in business ethics. This rising attention from both academic and business communities hinges on the notion that ethics plays a determinant role in the decisions, actions, and outcomes of organizations (e.g., Baker, Hunt, & Andrews, 2006). For instance, researchers have examined how ethics

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is related to organizational outcomes such as performance (e.g., Jin & Drozdenko, 2010), organizational commitment (e.g., Hunt, Wood, & Chonko, 1989), and culture (e.g., Kaptein, 2009). But while many studies emphasize the importance of ethics, often noting the relationship to organizational outcomes, relatively little attention has been given to the character strengths or virtues that inspire ethical behaviors, particularly at the organizational level (McLeod, Payne, & Evert, 2016).

Virtue in organizations is broadly thought to align with ethical values and embodies the distinct character strengths of its members (Cameron & Winn, 2012). Character strengths—the traits or psychological processes and mechanisms that characterize an individual and are associated with exemplars of human virtue (Sosik, Gentry, & Chun, 2012)—include such attributes as courage, justice, compassion, and integrity (Caza, Barker, & Cameron, 2004; Moore & Beadle, 2006) that collectively influence organizational processes, methods, and decisions (Cameron, Bright, & Caza, 2004). At the organizational level of analysis, organizational virtue orientation (OVO) describes an "organization's integrated set of values and beliefs supporting ethical character traits and virtuous behaviors" (Payne, Brigham, Broberg, Moss, & Short, 2011: 257). In essence, OVO is a collectively-developed, value-infusing disposition—including dimensions of integrity, empathy, warmth, courage, conscientiousness, and zeal (Chun, 2005)—that steers the moral and ethical actions of an organization (Payne, Moore, Bell, & Zachary, 2013) and allows an organization to differentiate itself from others.

Recent studies have considered organizational virtues as a key topic for analysis, demonstrating that virtuousness can influence key organizational outcomes and differ across various organization types and contexts (e.g., Bright, Cameron, & Caza, 2006; McLeod, Moore, Payne, Sexton, & Evert, 2018; Payne et al., 2011). Further, proponents of organizational ethics emphasize the fundamental importance of character strengths and virtue as a counter to morally deficient business models used strictly in the pursuit of profits (Wright & Goodstein, 2007). However, most of these studies only provide limited contributions to the study of character, ethics, and virtues, in part, because they fail to specifically consider how an orientation toward more virtue is developed in an organization. For this reason, the focus of this article is on examining if and how the composition of the top management team (TMT) might be related to an organization's promotion of, and propensity for, virtuousness; previous research suggests that character strengths ascribed to top managers often cascade through the firm's ranks and have an innately important influence on the organization's overall ethical climate (e.g., Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009; Schroeder, 2002).

We draw on Hambrick and Mason's (1984) upper echelon perspective that suggests TMT demographic characteristics can serve as proxies for the beliefs, values, and character strengths of top managers. Employing this mechanism, prior upper echelon studies have generally sought to trace firm strategic decisions and behavior back to certain characteristics of the top managers; such executives are generally in a position to influence key organizational outcomes such as strategic change (e.g., Finkelstein & Hambrick, 1990), firm performance (e.g., Wang, Holmes, Oh, & Zhu, 2016), organizational ambidexterity (Heavey & Simsek, 2017), and innovation

(Ling, Simsek, Lubatkin, & Veiga, 2008). Building on these studies, we take advantage of a unique sample of firms that are making their initial public offering (IPO) of equity to examine the impact of TMTs on an organization's virtue orientation, both prior to and after the IPO event. Specifically, we assert that IPO firms represent a particularly appropriate setting for our study, since going public is a significant transformational event in a firm's development that intensively involves firm executives in key activities and decisions related to this major transition (e.g., Daily, McDougall, Covin, & Dalton, 2002; Fischer & Pollock, 2004).

By examining how executives influence an IPO firm's orientation toward virtuousness, we make three contributions to the business ethics literature. Primarily, we begin to theoretically and empirically address the overlooked topic of how and why virtuous orientations develop in organizations (e.g., Payne et al., 2011). Specifically, we demonstrate that top managers play an important role in the fostering of organizational virtues—something extensively discussed and acknowledged but not, to our knowledge, yet empirically explored. As a second contribution, we bring additional conceptual and empirical support to upper echelon theory by exhibiting a new pathway for how top managers might influence organizations. Although the impact of TMT characteristics on OVO can be theoretically predicted based on upper echelon theory, direct supporting evidence for the relationship is currently lacking. Thus, our study focuses on the composition of the organization's TMT and demonstrates that certain characteristics of top managers explain variance in the formulation and perpetuation of character and virtue in organizations. Finally, we demonstrate how the organization itself, its structures and processes, might inhibit or promote (i.e., moderate) the extent to which executives influence a firm's tendency to discuss and orient itself toward virtuousness. Although our study reveals that TMT characteristics influence a firm's OVO, this influence is moderated by the size of the organization in some complex ways. Thus, there is evidence that an organization's size may involve factors (e.g., inertial forces, processes) that act as important contingencies that promote or diminish the TMT's influence on organizational virtues.

BACKGROUND AND THEORY

Despite existing academic literatures that primarily focus on personal virtues, a growing number of scholars are interested in how theoretical perspectives of character and virtue might apply to organizations (e.g., Moore & Beadle, 2006; Peterson & Park, 2006). Although early foundational work considered virtues as individual moral attributes, business ethics scholars eventually began to view virtues as collectively representing the strengths of an organization. Specifically, Solomon (1992) established a list of business virtues, which included both moral (e.g., honesty) and non-moral (e.g., humor) virtues, and was among the first attempts to develop relevant classification schemes for virtues at the organizational level. Likewise, Murphy (1999) examined five principal dimensions of virtue (i.e., integrity, fairness, trust, respect, and empathy). Although these efforts provided an initial springboard for scholars regarding the focus of future ethics and virtues research, they also exposed gaps regarding the investigation and application of virtuousness, its expression, and its impact (e.g., Cameron et al., 2004).

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In response to these gaps, interest has turned to the challenge of conceptually and empirically operationalizing virtues. Chun's (2005) use of virtue ethics and stakeholder theories to content analyze corporate value statements represents a major effort to elevate virtues to the organizational level of analysis. Specifically, this article assumes that organizational virtues result from the aggregate efforts of organizational members that can be operationalized and understood using individual-level phenomena. Based on this key assumption, Chun (2005: 272) classifies words into six dimensions of organizational virtue (integrity, empathy, warmth, courage, conscientiousness, and zeal), which is defined and used in this article as "ethical character traits that are learnt from an accumulative perception of a firm's behavior in everyday business life, that drives internal and external stakeholder satisfaction, and that is aligned with its ethical values used for strategic positioning." This operationalization of organizational virtues is a founding part of an emerging body of research seeking to provide more refined empirical and theoretical work in this area. For example, Moore (2008) and Moore and Beadle (2006) argue that organizations are not simple economic engines that exist to strip individual managers of virtue. Instead, they possess a set of attributes that leads to a virtuous character within the organization. Similarly, Bright et al. (2006) assert a concept of organizational virtuousness by exploring its effects on performance in downsized organizations.

The concept of virtues in organizations underwent a key expansion by Payne and colleagues in 2011. In combining the assumptions regarding organizational virtues with concepts from the identity (e.g., Moss, Short, Payne, & Lumpkin, 2010) and culture (e.g., Deshpande & Webster, 1989; Dyer, 1986) literatures, they developed and validated the OVO concept. OVO is an organization's "arrangement or configuration of attitudes and beliefs sustaining ethical character traits such as those identified by Chun (2005)" (Payne et al., 2011: 260). The delineation between the concepts of organizational virtue and OVO is critical whereby it makes a distinction between the beliefs or attitudes that support ethical behavior (i.e., the "being") and the actual activities ascribed to ethical behavior (i.e., the "doing"). Further, and central to this article's outcomes, we expect OVO to specifically influence organizations such that an organization's orientation towards virtue will compel greater collective efforts to demonstrate virtuous traits and tendencies by influencing organizational methods, processes, and decisions among its members (Cameron et al., 2004). By facilitating and supporting virtuous activities on the part of its members, and in line with the organizational culture research stream that implies such shared values and beliefs will guide behavioral norms (e.g., Deshpande & Webster, 1989), we expect that organizations with more OVO will exhibit greater levels of virtuous artifacts. Such artifacts are the "visible, tangible, and audible results of activity grounded in cultural values and assumptions" (Payne et al., 2011: 261).

With respect to the OVO concept, we suggest that an examination of executives in the top ranks of an organization, particularly those with an overall responsibility for making decisions and establishing direction for the organization as a whole, could provide a more complete and precise understanding of how organizational virtues are developed, demonstrated, and perpetuated. As previously noted, we draw on Hambrick and Mason (1984) for the general theoretical framework, and follow

their assertion that top managers represent the most influential leaders in any organization. Such leaders directly influence organizational outcomes through behaviors that reflect their values and cognitions, as proxied by personal characteristics (e.g., Chin, Hambrick, & Treviño, 2013). Though social psychologists have typically viewed these characteristics in terms of personality traits measured by psychological instruments, more recent management literature has asserted that executive demographics can be a similarly strong predictor of strategic behavior and choices (e.g., Finkelstein, Hambrick, & Cannella, 2009; Nielsen & Nielsen, 2011; Ozer, 2010).

The past thirty years have seen a dramatic increase in research on the relationship between demographic characteristics of executives and organizational outcomes (Finkelstein et al., 2009; Wang et al., 2016). Central to this stream of research is the logic that an executive's experience serves to shape his or her values, beliefs, and cognitions in a manner that significantly affects decision making and behavior (Datta & Iskandar-Datta, 2014). Hence, demographic characteristics—including age, tenure, functional background, education, and gender—are thought to reflect executive experiences, beliefs, and values which give rise to organizational characteristics associated with various strategic decisions and behaviors (e.g., Heavey & Simsek, 2017; Hitt & Tyler, 1991; Lyngsie & Foss, 2017). In other words, top executives have a critically important role in the organization because they influence what, how, and when actions are taken (Finkelstein & Hambrick, 1996; Wang et al., 2016).

Building on the more general arguments of upper echelons theory, there is a substantive body of work that examines how TMT members may imprint organizations with their own values by shaping and directing organizational behaviors. Carmeli, Schaubroeck, and Tishler (2011), for example, examine the extent to which certain TMT traits can shape dynamics and facilitate the development of team potency beliefs among its members. Similarly, Evans and Butler (2011) assert that personal attributes of top managers affect the interpretation of events, which then influences executive choices. Particularly relevant to our context of IPO firms, there is increasing research on imprinting that suggests founder influence—including the entrepreneurial founders' collective experiences, values, and beliefs—can impact an organization's developmental path (Johnson, 2007; Nelson, 2003). These and related works (e.g., Bryant, 2014; Heugens, Kaptein, & van Oosterhout, 2008) support our contention that top managers, and particularly founding entrepreneurs that play a critical role in shaping IPO firms, should influence OVO, whereby executive actions and decisions are undertaken to develop virtues that pervade the organization (e.g., Moore, 2008).

HYPOTHESES

TMT Characteristics and Organizational Virtue Orientation

Employing the upper echelons perspective, we now formally hypothesize direct relationships between five important TMT member characteristics (i.e., age, tenure, education, functional background, and gender) and OVO. These TMT characteristics are among the most commonly cited in upper echelon research, acting as valid surrogates for the values, cognitions, perceptions, and interpretations that influence top

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executive decisions and behaviors (Finkelstein & Hambrick, 1996). Fundamentally, we follow a long line of researchers who contend that such executive characteristics represent managerial belief systems and drive decisions (e.g., Brouthers, Brouthers, & Werner, 2000; Hambrick, Humphrey, & Gupta, 2015; Krishnan & Park, 2005; Wiersema & Bantel, 1992), and we expect that these characteristics will uniquely influence the development of virtuousness in organizations.

Average Age

Richard and Shelor (2002) point out that age is, in part, a reflection of an individual executive's perspectives, values, and belief systems. Increased age usually brings an increased quantity and variety of experiences, which allows older individuals to draw from a broader set of life lessons and developed character strengths. Such experience typically leads to a deeper understanding of consequences associated with certain behavior that is ultimately reflected in personal beliefs and conduct. Indeed, the moral and ethical frameworks that are refined with age can explain the willingness and ability of older individuals to effectively handle conflict in a mature way, whereas the actions of younger people are associated with riskier behavior and a general inability to accurately forecast long-term consequences (e.g., Gottfredson & Hirschi, 1990).

Elements of the basic relationship between age and virtues have been established previously. For example, Taylor (1975) positively associated age with better moral judgment among organizational decision makers because of their tendency to utilize more time in reaching decisions; this may be related to their innate desire to seek out more information and diagnose the value of information more accurately. Furthermore, enhanced character strengths among older executives may lead to the communication and development of a more holistic vision—one that closely conforms to corporate expectations and better adheres to ethics-based rules (e.g., Sosik, Juzbasich, & Chun, 2011). Particularly relevant to this article, Sarros, Cooper, and Hartican (2006) found that a broad range of character strengths increase as managers age, including wisdom and ethical leadership. Given that virtuous individual and organizational characteristics are developed over time (Wright & Goodstein, 2007), we anticipate that virtuous characteristics among TMTs, such as empathy, integrity, and conscientiousness, tend to galvanize with age; that is, older executives are more likely to conduct themselves in morally responsible ways and allow their duties in the organization to be a stronger reflection of the values learned over a lifetime of experiences (e.g., Ireland, Hitt, Bettis, Porras, & Auld, 1987). In short, older TMT members should ascribe greater value to a virtuous organization and work to imprint relevant character strengths on people working for and with them (Peterson & Seligman, 2004). Thus,

Hypothesis 1: TMT average age is positively associated with the level of organizational virtue orientation.

Average Tenure

An executive's tenure on the TMT is a characteristic that underlies his or her influence on the development of a firm's OVO. Tenure has been the subject of much theoretical

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and empirical inquiry because of its association with stability, reduced conflict, enhanced communication, social cohesion, and shared cognitive structures (e.g., Finkelstein & Hambrick, 1996; Michel & Hambrick, 1992). Thus, for executives with increased tenure on the TMT, these positive qualities are expected to augment their desire to perpetuate more virtuous ideals throughout the team and organization. Indeed, despite the perils of groupthink among executives that have worked together on the same team for an extended period (e.g., Bantel & Jackson, 1989), longer-tenured TMT members tend to be more socialized into the firm's overall belief structures, and are more likely to believe in the proliferation of important values and norms innate to the organization (Gupta, Briscoe, & Hambrick, 2017).

Given the enhanced level of socialization and common perspectives that develop from being part of a team over an extended time period, it is expected that longer-tenured TMT members would also tend to cultivate a more virtuous orientation through the organization as well. This orientation is likely to be based on the virtues that are reflective of a collective belief system and supported by personal character strengths, which is likely associated with age-related characteristics such as integrity, empathy, and warmth (e.g., Westphal & Fredrickson, 2001). In other words, given the commitment to the firm demonstrated by longer-tenured TMT members (e.g., Meglino, Ravlin, & Adkins, 1989), the virtuous ideals of such executives are expected to accumulate and become institutionalized, particularly as the TMT maintains the authority to hire (and fire) other managers who share similar character strengths and virtuous principles (e.g., Pfeffer, 1981). This leads to our hypothesis of a positive relationship between TMT average tenure and organizational virtue.

Hypothesis 2: TMT average tenure is positively associated with the level of organizational virtue orientation.

Average Education

Research suggests that greater levels of education impact an individual's values (Holland, 1973) and moral development (Rest & Thoma, 1986). Seligman, Steen, Park, and Peterson (2005) found a strong relationship between character strengths and education, with better-educated people exhibiting greater strength of character. Generally, education is believed to play an important role in the systematic development and enhancement of character strengths, whereby individuals with better critical thinking skills and strong dedications to purpose possess a deeper understanding of important virtues (including integrity, courage, and zeal), and can subsequently realize them in practice (Hartman, 2006). So, if TMT executives tend to value education, and the critical thinking skills and dedication to purpose (e.g., completing an advanced degree, starting up a company) that higher education requires, such values are expected to pervade the organization. Higher levels of education would thus help executives better understand how to most effectively impose and perpetuate virtuous ideals throughout the organization. Overall, better-educated executives are expected to possess a heightened level of awareness and receptivity to the importance

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of organizational virtues as they carry out their business, and lead to increased OVO within the company.

Hypothesis 3: TMT average education is positively associated with the level of organizational virtue orientation.

Functional Background Heterogeneity

Functional backgrounds play an important role in shaping an individual's cognitive base and influencing the analysis and decision-making abilities of executives (Wiersema & Bantel, 1992). Functional backgrounds are thought to encompass an executive's personal and professional experiences, and are linked to the development of values, perceptions, and character strengths (Sosik et al., 2012). When considered in isolation, the individual influence of functional background on a range of organizational outcomes is well documented (e.g., Cannella, Park, & Lee, 2008).

TMTs with a greater range of functional experience among its members tend to retain a more diverse set of values and beliefs (Tihanyi, Ellstrand, Daily, & Dalton, 2000) that serves as a rich source of asymmetric information (Boone & Hendriks, 2009). Hence, executives with diverse functional backgrounds may also possess overlapping knowledge that is expected to broaden the perspectives, experiences, and capabilities that the TMT can bring to bear when making critical decisions (e.g., Certo, Lester, Dalton, & Dalton, 2006). In fact, important costs may be incurred by TMT members that come from similar functional backgrounds, since these executives are not able to draw from the full and diverse set of information offered by TMTs with greater functional background heterogeneity among its members. As such, diversification of perspective and thought plays a central role in the development of virtuous organizations (Peterson & Seligman, 2004; Wright & Goodstein, 2007). Specifically, more functionally heterogeneous TMTs are expected to possess a greater drive to impose virtuous ideals throughout the organization, and may be more open to championing other critical aspects of organizational virtues.

Overall, TMTs characterized by greater functional background heterogeneity draw from a broader base of experiences and are likely to be more receptive to virtuous ideals; such openness may lead executives to leverage varying types and degrees of character strengths in their decisions and actions. This perpetuation of virtuous ideals is expected to counter against dysfunctional conflict and decision-making inefficiencies (e.g., Chatman & Flynn, 2001) that are detrimental to virtuous orientations, and instead help reconcile and promote positive virtues throughout the organization.

Hypothesis 4: TMT functional background heterogeneity is positively associated with the level of organizational virtue orientation.

Proportion of Women

The notion that character strengths and the criteria for virtuous perceptions are somehow different across genders has been studied for many years (e.g., Peterson & Seligman, 2004). Indeed, recent studies focusing on character strength differentials

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between men and women indicate that gender can be an important consideration in the development of individual values and beliefs (Lyngsie & Foss, 2017). Linley et al. (2007) suggest that women typically exhibit more interpersonal character strengths than men, including several associated with virtues such as kindness, love, and social intelligence. Further, Peterson and Seligman's (2003) administration of the Values in Action Inventory of Strengths found that women typically score higher than men on virtuous character strengths such as fairness and excellence. Reasonably, these findings could extend to key, and overlapping, virtuous principles identified by Chun (2005), including empathy, warmth, and integrity specifically. Such findings provide strong support for the expectation that greater female representation on a TMT will foster the development and perpetuation of virtuous ideals across organizations.

Hypothesis 5: The proportion of women on the TMT is positively associated with the level of organizational virtue orientation.

Moderating Effects of Organization Size

While our primary hypotheses deal with the direct relationships between TMT characteristics and OVO, we recognize that organizational contingencies likely exist that either diminish or enhance these relationships. Given the multilevel nature of the relationship, where group-level characteristics are expected to influence an organizational-level construct, the characteristics of the organization itself may influence the nature of the relationship (Cannella & Holcomb, 2005). Consequently, we explore this possibility by considering the moderating effects of organization size, which has long been considered an important contingency with regard to leader effectiveness (e.g., Hambrick, 1989). Previous research has demonstrated that the impact of characteristics related to leadership, for example, is diminished in larger organizations because of increased complexity, bureaucracy, and communication difficulties (e.g., Koene, Vogelaar, & Soeters, 2002; Nahavandi & Malekzadeh, 1993; Vaccaro, Jansen, Van Den Bosch, & Volberda, 2012). Indeed, larger organizations tend to maintain more established routines, formalized roles, and institutionalized mechanisms that lead to organizational inertia and produce resistance to change (Hannan & Freeman, 1984). Conversely, smaller organizations, because they tend to be more nimble and follow simpler business processes—by necessity—do not face the same liabilities that make change difficult in larger organizations (Kelly & Amburgey, 1991). Generally, it is expected that as an organization increases in size, such constraints will hinder communication, create more layers in hierarchical structures, and perpetuate norms and regulations that make coordination problematic within organizations (Finney & Lesieur, 1982).

We expect the effects of TMT character strengths to vary depending on organizational size, particularly with respect to the perpetuation of virtuous ideals within the organization. In particular, the structural factors and complex processes that accompany growth (e.g., Sosik et al., 2012; Tsui, Zhang, Wang, Xin, & Wu, 2006) are expected to hinder the processes by which executive character strengths and

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values are passed to lower-level employees; in larger organizations, such hindrances are also expected to stifle an executive's span of control and ability to influence the organization during periods of major change such as the IPO process (Singh, 1990). Simply put, increased firm size is expected to diminish the extent to which TMT executive values and beliefs—such as those associated with OVO—are embedded and reinforced in the organization, despite the TMT's overall responsibility for the development of organizational policies and procedures. We present the following moderation hypotheses in five specific parts:

Hypothesis 6: Organization size moderates the relationship between the TMT characteristics of 6a) average age, 6b) average tenure, 6c) average education, 6d) functional background heterogeneity, and 6e) proportion of women on the TMT, and organizational virtue orientation such that, in larger organizations, the relationship is diminished.

METHODS

Sample and Data

The sample for our study consists of firms that declared IPOs in US equity markets during the 2009-2012 time period. Because public offerings of equity are characterized by change, risk taking, and uncertainty (Certo, Daily, Cannella, & Dalton, 2003), IPO firms rely heavily on the involvement and expertise of top executives as they navigate the IPO process and beyond (Daily et al., 2002). Investors also consider executives to play a seminal role in the success or failure of an IPO, imposing high performance expectations on the IPO firm's top management team that are often compounded by intense scrutiny from a host of other financial and regulatory stakeholders unique to the IPO process (Morris, Schindehutte, Walton, & Allen, 2002). Thus, with respect to issues related to ethics and virtue, TMT member character strengths are expected to exert significant influence in IPO firms as they navigate through (and beyond) what is considered to be one of the most significant and challenging transformational events in a firm's history (Fischer & Pollock, 2004); IPO firms therefore provide an opportune setting for our specific investigation of TMT characteristics and OVO.

IPO prospectuses and the firm's first 10-K filing (i.e., "10-Ks") following a sample firm's IPO were the primary documents used for data collection. Additionally, the Thomson Financial Security Data Corporation (SDC) Platinum database was utilized to gather financial and industry specific controls. The IPO prospectus is the document provided to the Securities and Exchange Commission (SEC) before a firm's public stock offering; it is also the document distributed by the underwriter to ascertain demand for the stock offering. Although the prospectus is a legal document that is intended to disseminate truthful and complete information regarding the attributes of a firm (Daily, Certo, & Dalton, 2005), it also contains an array of narratives and descriptions that can be useful in determining the extent of an organization's orientation (e.g., Martens, Jennings, & Jennings, 2007).

10-Ks—annual performance summaries filed with the SEC by publicly-traded companies—are used by firm leadership not only to communicate financial performance

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metrics and projections, but also to provide details about the company's strategy and assumptions, recent investments, growth activities, and forward-looking statements for current and potential investors (Clarkson, Kao, & Richardson, 1999). Indeed, in terms of offering insight into organizational phenomena, 10-Ks offer significant advantages as far as being a source of corporate information. For example, compared to executive interviews, 10-Ks have been shown to be more reliable, less vulnerable to retroactive sensemaking, and nonintrusive (Osborne, Stubbart, & Ramaprasad, 2001). Additionally, with respect to 10-Ks, senior leadership spends "considerable time outlining the content of the report, sketching out much of it, and proofreading and changing most of it to their taste" (Bowman, 1984: 63).

Consistent with similar IPO studies (e.g., Bell, Moore, & Al-Shammari, 2008; Moore, Bell, Filatotchev, & Rasheed, 2012), firms were excluded from our study if they did not have, minimally, one external investor and a cumulative equity stake of 5% sold to external investors. Similarly, firms with stock declarations that resulted from mergers, acquisitions, spin-offs of publicly-listed firms, units, warrants, and rights offerings were also excluded. This resulted in an initial sample of 236 IPO firms. Since TMT demographic target data were extracted from the biographies of TMT members—those defined as "C-level" executives (e.g., Chief Executive Officer, Chief Operating Officer, Chief Information Officer) and second tier executives listed in the prospectus (e.g., Senior Vice President, Executive Vice President)—from each firm (e.g., Tsui, Pearce, Porter, & Tripoli, 1997), we excluded firms where TMT biographies (or relevant aspects of their biographies) were withheld or missing. This filtering process reduced the sample to 207 IPO firms. Finally, outliers were identified using Cook's distance (i.e., the *cooksd* option in Stata), which is an aggregate measure of how much an observation impacts the overall model or predicted values when an observation is left out of the estimation. Following Bromiley and Harris (2014), outliers with Cook's distance values greater than 4/N (i.e., in this case, 4/207 = 0.019) were deleted; this resulted in a final sample of 178 IPO firms and their corresponding prospectuses. In gathering the first 10-K following the IPO, our other subset of organizational narratives, we noticed that some firms failed or were delisted prior to filing their first post-IPO 10-K (or simply did not file it). Hence, the final subset of 10-Ks was slightly reduced to 172 firms.

Dependent Variable

Our study used *organizational virtue orientation* (OVO) as the dependent variable. Following previous research (e.g., Payne et al., 2013), we employed computer-aided content analysis (CATA) to assess OVO within the text of IPO prospectuses and post-IPO 10-K filings. Often employed by researchers to categorize words so that contextual inferences can be established, content analysis is particularly useful because of its ability to reveal insights on the values, cognitions, attitudes, and intentions of individuals and organizations (Carley, 1997). Accordingly, employment of CATA among business scholars has enabled the reliable exploration of important subjects in documents published by organizations such as shareholder letters, annual reports, and purpose statements (Bligh, Kohles, & Meindl, 2004; Loughran & McDonald, 2011).

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For the analyses, we utilized CAT Scanner CATA software and the OVO word list developed by Payne et al. (2011). This list of 232 words was based on Chun's (2005) six dimensions of organizational virtue, including integrity, empathy, warmth, courage, conscientiousness, and zeal. Following previous research (e.g., Payne et al., 2013), we operationalized OVO as an aggregate measure, where the document's individual word count scores were summed (i.e., the number of times the word was used) for all six OVO dimensions. Also, to avoid potential bias presented by the wide variation in document lengths, we standardized the OVO measure by dividing the total word count in each prospectus or 10-K by 100 to report a ratio; this score also facilitates easier comparison and interpretation across IPO firms. It is important to note that OVO scores from the IPO prospectuses and 10-Ks showed a strong correlation ($r = 0.77$; $p = 0.00$), indicating good reliability of the measure across the two document samples.

Independent Variables

Demographic data were collected from TMT member biographies located in the IPO prospectuses under the document's "management" section. Age (in years) and tenure (years as a TMT member) were manually collected for each TMT member. Following Srivastava and Lee (2005), manual coding of TMT members' education was based on total years of education where a bachelor's degree equaled 16 years of schooling and was assigned a value of 16, a master's degree was assigned a value of 18, and a doctorate was assigned a value of 22. Means among the TMT members were then computed for use as *TMT average age, TMT average tenure,* and *TMT average education* variables.

Consistent with Tihanyi et al. (2000), we used prospectus biographies to determine an individual's primary area of functional expertise. Each TMT member's biography was closely examined to determine their primary expertise in one of seven areas: general business, engineering, finance and accounting, marketing and public relations, research and development, production and operations, and legal services. The *TMT functional background heterogeneity* measure was then derived for each top management team using Blau's (1977) index, which is a widely-used heterogeneity measure when categories are involved (Finkelstein & Hambrick, 1996). We specifically used the formula $B = [1- \Sigma(p_i)^2]$, where p is the percentage of TMT members in the i^{th} group (i.e., primary functional background area). To measure consistency in coding, a post-hoc inter-rater reliability (IRR) test was conducted with respect to collection of the functional background measure. Specifically, biographies from a set of 36 prospectuses (n = 190 observations), or approximately 20% of the sample, were randomly chosen and analyzed by a second, independent coder. IRR was estimated by calculating percent agreement between coders and Cohen's (1960) kappa statistic (κ), a measure of agreement that allocates a κ-value of 0 if the agreement is no better than would be expected by chance, whereas perfect agreement is indicated by a κ-value of 1; Landis and Koch (1977) suggest intermediate κ-values greater than 0.80 to be almost perfect agreement. For this article, agreement (91.6%) and kappa statistic ($\kappa = .90$; $p = 0.00$) were sufficiently high so as to suggest TMT member functional background categories were understood and applied in a similar manner.

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Finally, TMT member gender was derived from the executive's name and biography (Welbourne, Cycyota, & Ferrante, 2007). More specifically, since names could be gender neutral, we confirmed the member's gender after searching for specific references to "him," "her," "he," or "she." If these pronouns were not present, the data were considered missing and the observation was listwise deleted from the analysis. *TMT proportion of women* was then computed by dividing the number of women on the TMT by the total number of TMT members.

Moderator Variable

Following previous literature (e.g., Waddock & Graves, 1997), *organization size* was measured as the IPO firm's total revenue in millions of US dollars. These data were collected from SDC Platinum. Due to non-normality, the log transformation of this variable was utilized (e.g., Tabachnick & Fidell, 1996).

Control Variables

Our analysis utilized several relevant controls. First, we used the IPO firm's pre-money market valuation—its valuation preceding the first day of trading—as an indicator of *IPO quality*. This indicator is derived using several measures collected from SDC Platinum, including IPO subscription price, number of shares outstanding, and the number of shares offered in the IPO (Gulati & Higgins, 2003). To abate concerns about non-normality discovered with this variable, this measure was logged.

Organization age is the number of years from the firm's founding to their IPO, and was manually collected from each firm's prospectus. We employed this control because of its link to institutional routines and norms (e.g., Tushman & Romanelli, 1985) and lasting implications on if and how organizations change or adapt. Because such changes often originate from—and involve—the top managers of the firm, organization age is a common control used by scholars conducting TMT research (e.g., Ling & Kellermanns, 2010). We accommodated firms that declared an IPO in the same year as their founding year by adding a 1 to each observation (e.g., Jain, Jayaraman, & Kini, 2008).

IPO year is a dummy control variable to account for within-year variations in the IPO market for the IPO years 2009 to 2012. The year of the IPO is particularly important since timing factors—from year to year—have been empirically associated with market conditions and variance in certain industries (e.g., Carter & Manaster, 1990).

TMT size is the number of individuals on the TMT. Prior research has demonstrated that TMT size is related to organizational outcomes, whereby larger TMTs, with more diverse perspectives and value bases, tend to have natural barriers to communication and coordination that may hinder decision making (e.g., Hambrick, 1994). Conversely, smaller TMTs tend to be characterized by more volatility, whereby the addition of one dissimilar TMT member can drastically change the group's overall influence (e.g., Tihanyi et al., 2000).

We also control for the number of *risk factors* listed in the IPO prospectus. Prominently located at the front of the prospectus, risk factors serve as an important factor

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in IPO studies since investors rely on these indicators to make initial assessments of public offerings. IPO firms that fail to describe risk factors with accuracy and transparency can expect to endure legal consequences and liabilities associated with information in both the prospectus and future narratives (e.g., Certo, Daily, & Dalton, 2001). We calculate the risk factors measure by summing the total number of risk factors listed in the IPO prospectus.

ANALYSIS AND RESULTS

The means, standard deviations, and correlations among the analysis variables are presented for our sample of IPO prospectuses in Table 1 and for the post-IPO 10-Ks in Table 2. Although there were several significant correlations among independent variables, the lack of high correlations between any of the independent demographic variables ($r > .65$; Tabachnick & Fidell, 1996) or control variables ($r > .45$) indicates that multicollinearity does not likely pose a problem in these data and suggests the appropriateness of aggregate regression models (e.g., Finkelstein & Hambrick, 1990). Additionally, variance inflation factors (VIFs) were used to judge the presence of multicollinearity in the models; across all models, the VIF for each independent variable was lower than the suggested threshold of 10.0 (e.g., Neter, Wasserman, & Kutner, 1990).

To test the hypotheses, we conducted hierarchical regression analyses, with OVO as the dependent variable. Such an approach enables a comparison between alternative models with and without interaction terms, whereby an interaction effect is only evident if the interaction term significantly contributes to the explained variance in the dependent variable over the direct effects of the independent variables (e.g., Jaccard & Turrisi, 2003). Standardized coefficients are reported in Table 3 for IPO prospectuses and Table 4 for the sample of 10-K filings. In both tables, Model 1 serves as the baseline estimation and includes only the control variables, Model 2 shows the main effects of the independent variables entered as one block, and Models 3-7 include the interaction effects.[1] To determine if there was a significant difference in explained variance between models, Model 2 (main effects) was compared to Model 1 (controls). Then, Models 3-7 (interactions) were compared to Model 2 (main effects). Main effect results in Model 2 indicate that the TMT characteristics studied here, in combination, produce significant increments in the coefficient of determination in both the IPO prospectus sample (Table 3; $\Delta R^2 = 0.09$, $p = 0.00$) and 10-K sample (Table 4; $\Delta R^2 = 0.15$, $p = 0.00$). More specifically, Model 2, as predicted, reveals that TMT average age (IPO prospectuses, $p = 0.03$; 10-Ks, $p = 0.05$) is positively related to OVO, providing support for Hypothesis 1 across both document samples. Results using TMT average tenure as a predictor for OVO show support for Hypothesis 2 within the 10-Ks ($p = 0.03$), but not within the IPO prospectuses. Across both document samples, results with TMT average education as a predictor offered support for Hypothesis 3 (IPO prospectuses, $p = 0.02$; 10-Ks, $p = 0.00$). Thus, the direct effects in Hypotheses 1 and 3 are fully supported, while Hypothesis 2 is partially supported.

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Table 1: Descriptive Statistics and Correlations (IPO Prospectuses)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 OVO	0.54	0.06													
2 IPO Quality[a]	-0.09	0.25	0.21 **												
3 Organization Age	11.62	12.43	0.01	-0.06											
4 TMT Size	6.77	2.55	0.18 *	0.25 ***	-0.06										
5 Organization Size[b]	4.08	2.28	0.31 ***	0.51 ***	0.23 **	0.20 **									
6 Risk Factors	47.59	9.55	0.33 ***	0.05	-0.15	0.06	-0.01								
7 IPO Year 2010	0.31	0.46	-0.02	-0.11	-0.02	0.11	-0.09	-0.03							
8 IPO Year 2011	0.27	0.45	0.16 *	0.15 *	-0.08	0.04	0.05	0.02	-0.41 ***						
9 IPO Year 2012	0.31	0.46	-0.04	-0.01	-0.08	-0.13	-0.00	0.17 *	-0.45 ***	-0.41 ***					
10 TMT Average Age	3.87	0.09	0.09	-0.20 **	0.18 *	-0.08	-0.09	-0.07	-0.01	-0.08	0.02				
11 TMT Average Tenure	4.61	2.60	0.14	-0.06	0.23 **	-0.12	0.27 ***	-0.09	-0.15 *	0.08	0.09	0.22 **			
12 TMT Average Education	5.55	1.21	0.05	-0.23 **	-0.02	-0.01	-0.36 ***	0.12	0.03	-0.09	0.12	0.13	-0.09		
13 TMT FBH	0.68	0.11	-0.11	0.16 *	-0.12	0.22 **	0.19 *	-0.02	-0.20 **	0.13	0.10	-0.17 *	-0.01	-0.01	
14 TMT Proportion of Women	0.09	0.11	0.03	-0.11	-0.09	0.07	-0.19 *	-0.03	0.08	-0.12	0.08	-0.01	-0.03	0.02	-0.05

Note. N=178. OVO = Organizational Virtue Orientation. FBH = Functional Background Heterogeneity. * $p < .05$. ** $p < .01$. *** $p < .001$.

[a] Pre-money market valuation (millions of US dollars; logged).

[b] Total revenues (millions of US dollars; logged).

Table 2: Descriptive Statistics and Correlations (First Post-IPO 10-K filings)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 OVO	0.52	0.08													
2 IPO Quality[a]	-0.08	0.25	0.10												
3 Organization Age	11.79	12.58	0.06	-0.06											
4 TMT Size	6.79	2.52	0.11	0.25 ***	-0.07										
5 Organization Size[b]	4.04	2.30	0.16 *	0.52 ***	0.24 **	0.21 **									
6 Risk Factors	47.54	9.60	0.26 ***	0.06	-0.14	0.06	-0.02								
7 IPO Year 2010	0.31	0.46	0.01	-0.11	-0.02	0.12	-0.10	-0.03							
8 IPO Year 2011	0.27	0.44	0.10	0.16 *	-0.09	0.05	0.05	0.03	-0.40 ***						
9 IPO Year 2012	0.31	0.46	-0.04	-0.01	-0.08	-0.14	-0.00	0.16 *	-0.45 ***	-0.40 ***					
10 TMT Average Age	3.87	0.08	0.17 *	-0.20 **	0.20 **	-0.04	-0.09	-0.07	-0.00	-0.09	0.01				
11 TMT Average Tenure	4.59	2.63	0.21 **	-0.06	0.24 **	-0.12	0.27 ***	-0.08	-0.16 *	0.08	0.11	0.23 **			
12 TMT Average Education	5.57	1.22	0.16 *	-0.23 **	-0.02	-0.00	-0.36 ***	0.12	0.02	-0.08	0.13	0.14	-0.08		
13 TMT FBH	0.68	0.11	-0.18 *	0.17 *	-0.13	0.21 **	0.20 *	-0.02	0.21 **	0.12	0.12	-0.15	-0.02	-0.01	
14 TMT Proportion of Women	0.09	0.11	0.04	-0.10	-0.08	0.06	-0.19 *	-0.04	0.05	-0.10	0.09	-0.01	-0.04	0.01	-0.06

Note. N=172. OVO = Organizational Virtue Orientation. FBH = Functional Background Heterogeneity. *$p < .05$. **$p < .01$. ***$p < .001$.

[a] Pre-money market valuation (millions of US dollars; logged).

[b] Total revenues (millions of US dollars; logged).

Table 3: Hierarchical Regression Analysis for Organizational Virtue Orientation (IPO Prospectuses)

Variables	Model 1: Controls	Model 2: H1-H5	Model 3: H6a	Model 4: H6b	Model 5: H6c	Model 6: H6d	Model 7: H6e
Controls							
IPO Quality[a]	0.01 (0.94)	0.05 (0.50)	0.03 (0.73)	0.04 (0.61)	0.03 (0.69)	0.06 (0.47)	0.05 (0.52)
	[0.33]	[0.32]	[0.32]	[0.32]	[0.32]	[0.32]	[0.32]
Organization Age	0.02 (0.75)	-0.048 (0.51)	-0.04 (0.59)	-0.05 (0.48)	-0.06 (0.40)	-0.05 (0.45)	-0.05 (0.49)
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
TMT Size	0.10 (0.18)	0.12 (0.09)	0.15 (0.03)	0.12 (0.09)	0.14 (0.05)	0.10 (0.14)	0.12 (0.09)
	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]
Organization Size[b]	0.29 (0.00)	0.37 (0.00)	0.40 (0.00)	0.45 (0.00)	0.39 (0.00)	0.35 (0.00)	0.44 (0.00)
	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.05]
Risk Factors	0.32 (0.00)	0.30 (0.00)	0.30 (0.00)	0.31 (0.00)	0.30 (0.00)	0.28 (0.00)	0.30 (0.00)
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
IPO Year 2010	0.11 (0.32)	0.07 (0.53)	0.09 (0.39)	0.04 (0.68)	0.07 (0.51)	0.07 (0.50)	0.07 (0.49)
	[0.24]	[0.23]	[0.23]	[0.23]	[0.23]	[0.23]	[0.23]
IPO Year 2011	0.21 (0.07)	0.21 (0.05)	0.25 (0.02)	0.19 (0.08)	0.24 (0.03)	0.19 (0.07)	0.22 (0.05)
	[0.25]	[0.24]	[0.24]	[0.24]	[0.24]	[0.24]	[0.24]
IPO Year 2012	0.06 (0.62)	0.02 (0.84)	0.05 (0.66)	0.01 (0.96)	0.03 (0.77)	0.02 (0.88)	0.02 (0.86)
	[0.25]	[0.24]	[0.24]	[0.24]	[0.24]	[0.24]	[0.24]
Main Effects							
TMT Average Age		0.12 (0.03)	0.20 (0.01)	0.11 (0.10)	0.15 (0.04)	0.12 (0.10)	0.12 (0.09)
		[0.80]	[0.86]	[0.78]	[0.81]	[0.80]	[0.80]
TMT Average Tenure		0.08 (0.30)	0.08 (0.28)	-0.29 (0.04)	0.09 (0.24)	0.06 (0.42)	0.08 (0.31)
		[0.03]	[0.03]	[0.05]	[0.03]	[0.03]	[0.03]

Table 3: continued

Variables	Model 1: Controls	Model 2: H1-H5	Model 3: H6a	Model 4: H6b	Model 5: H6c	Model 6: H6d	Model 7: H6e
TMT Average Education		0.16 (0.02)	0.11 (0.15)	0.17 (0.01)	0.09 (0.24)	0.18 (0.01)	0.16 (0.03)
		[0.06]	[0.06]	[0.06]	[0.07]	[0.06]	[0.06]
TMT Functional Background Heterogeneity		-0.20 (0.01)	-0.23 (0.00)	-0.16 (0.02)	-0.22 (0.00)	-0.12 (0.15)	-0.20 (0.01)
		[0.62]	[0.62]	[0.62]	[0.62]	[0.74]	[0.62]
TMT Proportion of Women		0.11 (0.09)	0.11 (0.10)	0.12 (0.08)	0.12 (0.08)	0.11 (0.10)	0.20 (0.08)
		[0.59]	[0.58]	[0.57]	[0.58]	[0.59]	[1.01]
Interactions							
TMT Average Age X Organization Size			-0.19 (0.01)				
			[0.00]				
TMT Average Tenure X Organization Size				0.41 (0.00)			
				[0.01]			
TMT Average Education X Organization Size					0.15 (0.05)		
					[0.00]		
TMT Funct. Background Heterogeneity X Organization Size						-0.14 (0.09)	
						[0.00]	
TMT Proportion of Women X Organization Size							-0.12 (0.34)
							[0.22]
R^2	0.24	0.33	0.36	0.37	0.35	0.34	0.33
F	6.60 (0.00)	6.30 (0.00)	6.50 (0.00)	6.86 (0.00)	6.25 (0.00)	6.12 (0.00)	5.91 (0.00)
ΔR^2		0.09 (0.00)	0.03 (0.01)	0.04 (0.00)	0.02 (0.04)	0.01 (0.08)	0.00

Note. N=178. Standardized regression coefficients are shown. Standard errors are in square brackets. p values are in parentheses.
ΔR^2 of Model 2 compared to Model 1 (controls). ΔR^2 of Models 3-7 compared to Model 2.
[a] Pre-money market valuation (millions of US dollars; logged).
[b] Total revenues (millions of US dollars; logged). TMT = top management team.

Table 4: Hierarchical Regression Analysis for Organizational Virtue Orientation (First Post-IPO 10-K filings)

Variables	Model 1: Controls	Model 2: H1-H5	Model 3: H6a	Model 4: H6b	Model 5: H6c	Model 6: H6d	Model 7: H6e
Controls							
IPO Quality[a]	-0.01 (0.88)	0.07 (0.42)	0.08 (0.39)	0.06 (0.51)	-0.01 (0.96)	0.09 (0.29)	0.62 (0.47)
	[0.36]	[0.34]	[0.35]	[0.34]	[0.34]	[0.34]	[0.34]
Organization Age	0.09 (0.28)	-0.02 (0.81)	-0.02 (0.79)	-0.02 (0.80)	-0.03 (0.72)	-0.01 (0.90)	-0.02 (0.76)
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
TMT Size	0.06 (0.43)	0.08 (0.27)	0.08 (0.33)	0.08 (0.27)	0.08 (0.27)	0.06 (0.42)	0.09 (0.24)
	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]	[0.03]
Organization Size[b]	0.14 (0.14)	0.22 (0.03)	0.21 (0.03)	0.28 (0.01)	0.12 (0.22)	0.10 (0.05)	0.37 (0.00)
	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.05]
Risk Factors	0.27 (0.00)	0.25 (0.00)	0.25 (0.00)	0.25 (0.00)	0.24 (0.00)	0.22 (0.00)	0.25 (0.00)
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
IPO Year 2010	0.10 (0.42)	0.05 (0.67)	0.04 (0.70)	0.03 (0.80)	0.03 (0.79)	0.02 (0.83)	0.06 (0.60)
	[0.26]	[0.25]	[0.25]	[0.24]	[0.24]	[0.24]	[0.24]
IPO Year 2011	0.15 (0.22)	0.13 (0.25)	0.12 (0.29)	0.11 (0.35)	0.11 (0.34)	0.099 (0.38)	0.14 (0.23)
	[0.27]	[0.26]	[0.26]	[0.25]	[0.25]	[0.25]	[0.25]
IPO Year 2012	0.35 (0.78)	-0.03 (0.83)	-0.03 (0.79)	-0.04 (0.72)	-0.00 (0.98)	-0.04 (0.72)	-0.03 (0.80)
	[0.27]	[0.26]	[0.26]	[0.25]	[0.25]	[0.25]	[0.25]
Main Effects							
TMT Average Age		0.14 (0.05)	0.12 (0.13)	0.13 (0.08)	0.13 (0.08)	0.13 (0.07)	0.13 (0.07)
		[0.87]	[0.95]	[0.86]	[0.84]	[0.85]	[0.86]
TMT Average Tenure		0.17 (0.03)	0.17 (0.03)	0.13 (0.04)	0.14 (0.07)	0.15 (0.05)	0.17 (0.03)
		[0.03]	[0.03]	[0.06]	[0.03]	[0.03]	[0.03]
TMT Average Education		0.22 (0.00)	0.24 (0.00)	0.24 (0.00)	0.17 (0.02)	0.23 (0.00)	0.22 (0.00)
		[0.06]	[0.07]	[0.06]	[0.06]	[0.06]	[0.06]

Table 4: continued

Variables	Model 1: Controls	Model 2: H1-H5	Model 3: H6a	Model 4: H6b	Model 5: H6c	Model 6: H6d	Model 7: H6e
TMT Functional Background Heterogeneity		-0.22 (0.00)	-0.22 (0.01)	-0.19 (0.01)	-0.19 (0.01)	-0.09 (0.21)	-0.23 (0.00)
		[0.66]	[0.67]	[0.67]	[0.64]	[1.21]	[0.66]
TMT Proportion of Women		0.10 (0.18)	0.10 (0.18)	0.10 (0.16)	0.06 (0.39)	0.09 (0.21)	0.29 (0.02)
		[0.63]	[0.63]	[0.62]	[0.61]	[0.62]	[1.05]
Interactions							
TMT Average Age X Organization Size			0.04 (0.60)				
			[0.00]				
TMT Average Tenure X Organization Size				0.34 (0.02)			
				[0.01]			
TMT Average Education X Organization Size					0.29 (0.00)		
					[0.00]		
TMT Functional Background Heterogeneity X Organization Size						-0.36 (0.01)	
						[0.23]	
TMT Proportion of Women X Organization Size							-0.26 (0.05)
							[0.23]
R^2	0.12	0.27	0.27	0.30	0.33	0.30	0.29
F	2.70 (0.01)	4.47 (0.00)	4.15 (0.00)	4.69 (0.00)	5.51 (0.00)	4.84 (0.00)	4.51 (0.00)
ΔR^2		0.15 (0.00)	0.00	0.03 (0.00)	0.06 (0.00)	0.03 (0.00)	0.02 (0.00)

Note. N=172. Standardized regression coefficients are shown. Standard errors are in square brackets. *p* values are in parentheses.
ΔR^2 of Model 2 compared to Model 1 (controls). ΔR^2 of Models 3-7 compared to Model 2.
[a] Pre-money market valuation (millions of US dollars; logged).
[b] Total revenues (millions of US dollars; logged). TMT = top management team.

TMT functional background heterogeneity (Hypothesis 4) was significant, but negatively related to OVO across both measures (IPO prospectuses, $p = 0.01$; 10-Ks, $p = 0.00$); this runs contrary to our expectations. Finally, the direct effect of TMT proportion of women was positive in the sample of IPO prospectuses ($p = 0.09$) and 10-Ks ($p = 0.18$), but misses the standard threshold p-value of 0.05. These findings are opposite to our predictions for Hypothesis 4 and do not support Hypothesis 5.

Hypotheses 6a-6e suggest that the moderating effect of organization size will diminish the direct relationships predicted in Hypotheses 1-5; results are shown in Models 3-7. To further aid the interpretation of the moderation results, slopes tests employing Preacher's online interaction tool were conducted on statistically significant interactions (Preacher, Curran, & Bauer, 2006). For each moderating relationship, we examined the relationships at one standard deviation below the mean and one standard deviation above the mean of the organization size variable.

Hypothesis 6a predicted that organization size would moderate the relationship between TMT average age and OVO such that, in larger firms, the association would be diminished. As shown in Model 3 of Table 3, organization size had a significant diminishing effect on the relationship between TMT average age and OVO in our sample of IPO prospectuses ($\beta = -0.19$, $p = 0.01$); its coefficient of determination also showed significant improvement ($\Delta R^2 = 0.03$, $p = 0.01$) over the main effect estimation (Model 2). Similar moderation tests within 10-Ks did not reveal significant results. A simple slopes test confirmed our findings within the prospectus sample, showing that when organization size was small (-1 SD), a significant positive relationship exists (simple slope = 1.19, $p < 0.05$). However, when organization size was large (+1 SD), the relationship was still significant, but weakened (simple slope = 0.57, $p < 0.01$). Overall, Hypothesis 6a was partially supported using IPO prospectuses, but not the 10-K sample.

We found oppositional findings for Hypotheses 6b and 6c, which predicted that organization size would diminish the TMT average tenure-to-OVO and TMT average education-to-OVO relationships, respectively. As demonstrated by Models 4 and 5 in Tables 3 and 4, moderation tests resulted in a significant increase in each model's overall coefficient of determination (over Model 2). Positive coefficients further imply that, in the presence of increased organization size, the direct relationships between TMT average tenure and OVO (IPO prospectuses: $\beta = 0.41$, $p = 0.00$; 10-Ks: $\beta = 0.34$, $p = 0.02$), and TMT average education and OVO (IPO prospectuses: $\beta = 0.15$, $p = 0.05$; 10-Ks: $\beta = 0.29$, $p = 0.00$) are enhanced. Additional simple slopes testing confirmed these findings, showing that Model 4 relationships were positive and significant across both samples when organization size was small (IPO prospectuses: simple slope = 0.12, $p < 0.05$; 10-Ks: simple slope = 0.07, $p < 0.05$) yet significantly stronger when organization size was large (IPO prospectuses: simple slope = 1.03, $p < 0.05$; 10-Ks: simple slope = 0.34, $p < 0.05$). Likewise, slopes for the moderating effects displayed in Model 5 across both samples were positive and significant with a small firm size (IPO prospectuses: simple slope = 0.09, $p < 0.05$; 10-Ks: simple slope = 0.14, $p < 0.05$) and enhanced when firm size was large (IPO prospectuses: simple slope = 0.21, $p < 0.05$; 10-Ks: simple slope = 0.85, $p < 0.05$).

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Hypothesis 6d proposed that increased organization size diminishes the direct relationship between TMT functional background heterogeneity and OVO. As Model 6 shows, within the sample of 10-Ks only (Table 4), the moderation term was significant and negative (10-Ks: $\beta = -0.36$, $p = 0.01$). A simple slopes test revealed that the direct effect between TMT functional background heterogeneity and OVO was significant and negative when the organization was small (10-Ks: simple slope = -0.85, $p < 0.05$), but this relationship was strengthened (i.e., more negative) when using a large organization (10-Ks: simple slope = -1.48, $p < 0.05$). We note that although the moderation terms for Hypothesis 6d were negative and significant using 10-Ks, this result only offers points for discussion, since the opposite direction main effects discovered in Hypothesis 4 cannot fully support the interaction test cited above.

Hypothesis 6e posited that larger firms would exhibit diminished OVO as the proportion of women on the TMT increases. This estimation was again conducted across both document samples. Although not significant within the IPO prospectuses, results within the 10-Ks showed a significant interaction (Model 7; $\beta = -0.26$, $p = 0.05$) and showed an increase in the coefficient of determination ($\Delta R^2 = 0.02$, $p = 0.00$). Indeed, slopes tests using the 10-K results demonstrated a positive slope when the organization was small (simple slope = 0.98, $p < 0.05$); this slope was significantly diminished within a large organization (simple slope = 0.38, $p < 0.05$). Overall, within the content of 10-Ks, we find limited support for moderation with respect to Hypothesis 6e, since the main effect relationship was not initially supported (Model 2).

As a final point of inquiry, and given the mixed findings associated with the moderating role of organization size, we sought to determine if other contingency factors might demonstrate similar effects. Therefore, as a post hoc analysis, we utilized organization age as an alternative moderator. Organization age, much like size, has been associated with inertia and is a widely-used, firm-level moderating variable. Indeed, older and more established firms are thought to solidify the cognitive thought-processes of managers and institutionalize rules and routines (e.g., Kelly & Amburgey, 1991). For each of the main relationships, our post-hoc results found no statistically significant ($p < 0.05$) moderating effects. Such an outcome supports the overarching importance of organization size (vis-à-vis organization age) in the transference or imprinting of values and beliefs on the organization in the form of organizational virtues.

DISCUSSION

Although the influence of top managers on firm processes and strategies has been well documented, the impact of these individuals on an organization's ethics and virtues—a critical and, in many ways, quintessential concept that drives a firm's desire to pursue societal good (e.g., Wright & Goodstein, 2007)—has received little theoretical or empirical attention. As demonstrated in recent studies (e.g., Payne et al., 2013), increasing attention is now being paid to the organizational consequences of virtues, but scholars have largely ignored the antecedent factors related to virtue as an organizational outcome, particularly those that pertain to influential executives.

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Accordingly, our study addresses this gap in a fundamental way by empirically examining if executive characteristics influence an organization's overall orientation towards virtuousness. In doing so, we provide support for the assertion that TMT character strengths, beliefs, and values (as proxied by executive demographic characteristics) play an important role in the development and perpetuation of an organization's virtue orientation, which reflects its collective efforts to demonstrate virtuous traits and ethical tendencies. While we find general support for the research question associated with this article, the nuances of the findings require more extensive discussion, particularly given several counterintuitive findings and our use of two distinct and temporally-distant organizational narratives as sources of data for the outcome measure.

Generally, our findings offer strong support to the argument that more experienced and knowledgeable (i.e., older, longer tenured, and better educated) executives are more inclined to develop and impose a stronger orientation toward organizational virtues. This complements prior research that demonstrates the importance of executive knowledge and experience in the strategic decision-making process (e.g., Barker & Mueller, 2002; Walters, Kroll, & Wright, 2007), and in providing a more stable, communicative, and effective management team (Payne, Benson, & Finegold, 2009). Indeed, when specifically considered in the context of IPO firms, which has previously been utilized to demonstrate the importance of OVO (e.g., Payne et al., 2013), it seems plausible that more seasoned executives may recognize the importance of organizational virtues, not only to the organization itself, but also to investors and other stakeholders. Such executives may intentionally seek opportunities to better socialize and shape the organization so that virtues are imprinted on the norms, operations, and processes of the organization. In effect, older and more experienced executives may be compelled to convince and motivate other managers to become more familiar with (and promote) the benefits associated with greater OVO.

Main effect findings were generally consistent; however, in the IPO prospectus sample, TMT average tenure did not exhibit a significant direct relationship with OVO—suggesting that something unique may occur with respect to executive tenure at the time of the IPO. It could be that longer-tenured executives, particularly those that are founders within the IPO firm, may have biases that inhibit the espousal of OVO at certain points in the IPO process. Or, perhaps these executives are more inclined to espouse other salient characteristics ascribed to the firm (e.g., financial success, market growth) that are particularly important to potential investors. Alternatively, given the significant correlation between TMT average tenure and TMT average age, it may be that the experience that comes with age and education, for example, is more important to OVO than an executive's tenure with the firm. Future research could address the differences between tenure, age, and education in an effort to determine if the experiences gleaned from each of these characteristics influence OVO or its various dimensions in different ways.

Contrary to our expectations, more functionally-diverse TMTs were associated with diminished OVO across both document subsets. We found this particularly interesting since prior research suggests diverse perspectives among TMT members can influence outcomes related to ethics and virtues. For example, Wong, Ormiston,

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and Tetlock (2011) empirically show that integrative complexity—a cognitive style that tolerates multiple viewpoints and appreciates integration of ideas—is linked to corporate social performance; they argue that this relationship exists, in part, because integrative complexity is associated with moral development (de Vries & Walker, 1986) and trade-off reasoning (Tetlock, Peterson, & Lerner, 1996). Thus, while functional heterogeneity might allow for more perspectives to be considered and improve integrative complexity, perhaps a TMT with greater functional background heterogeneity—in essence, too many perspectives—increases ambiguity within the team such that decisions or actions are not quickly or easily made. Future research could perhaps investigate the issue raised here by integrating faultlines, which are hypothetical lines of delineation that divide a TMT into homogeneous subgroups based on alignment of multiple demographic characteristics (e.g., Bezrukova, Jehn, Zanutto, & Thatcher, 2009). This perspective could help explain how different patterns of TMT characteristics emerge, why some patterns are beneficial, and why others may cause fractures in a team such that "essential processes such as communication, coordination, cohesion and trust" may be inhibited (Pearsall, Ellis, & Evans, 2008: 225). Such patterns within the TMT could develop along a range of characteristics that restrict the positive outcomes normally associated with TMT heterogeneity, whereby having too many perspectives triggers effects that may limit the clarity teams need to develop virtuousness in their organizations.

Our results also revealed marginal significance—across both document sets—with respect to the relationship between the proportion of women on the TMT and OVO, which warrants further discussion. In IPO firms, the espousal and display of organizational virtues is apparently unaffected by female TMT members, even though women generally assign more importance to corporate ethical, environmental, and societal responsibilities than their male counterparts (Lämsä, Vehkaperä, Puttonen, & Pesonen, 2008). Moreover, our findings tend to conflict with the general assertion that compared to men, women ascribe different values to social issues that compel them to be highly committed to ethics-related concepts such as corporate social responsibility (e.g., Fernandez-Feijoo, Romero, & Ruiz, 2012). Overall, although many characteristics associated with women generally align with the basic principles of OVO—reflecting ideals such as empathy, warmth, and conscientiousness (Chun, 2005)—we suggest that gender-based values and their effect on virtues may be industry specific or not as pronounced in IPO firms. In other words, the weak direct association between women on the TMT and OVO could be a consequence of the industries in our sample, which may lack the female employment base required to increase the benefits of female executives (e.g., Hillman, Shropshire, & Cannella, 2007), or perhaps because our sample is composed of IPO firms based in the United States, where women are traditionally underrepresented in IPO firms across all functional positions (e.g., Kenney & Patton, 2015). From a broader perspective, we hope our findings will drive additional examinations—across other countries and organizational contexts—of actual mechanisms brought by women in the development of organizational virtue.

Unlike our direct effects, the study's moderation results were not entirely consistent across IPO prospectuses and 10-Ks; indeed, relationships appear to be much

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more complex in the presence of the organization size contingency. In general, our findings align with research that suggests executive influence and control is lessened due to the greater complexity and bureaucracy associated with larger firms (e.g., Wally & Baum, 1994). However, given that our dependent measure of OVO is based on documents that are directly influenced by the TMT, we may be seeing that TMTs are somewhat conflicted about the importance of virtuous language in the documents, particularly as the organization increases in size and complexity. Prior research demonstrates the importance of the IPO narrative to resource acquisition (Martens et al., 2007; Payne et al., 2013). Therefore, TMTs within our sample may be having a difficult time determining the nature of the narrative and signals they wish to send, particularly in larger firms. It may be that more experienced TMTs are more likely to appreciate the importance of signaling organizational virtue to external constituents, making it a higher priority when ambiguity and complexity are more prevalent (i.e., in larger organizations). Our findings support such an argument, showing that organization size moderates both the TMT average tenure and TMT average education to OVO relationship in a way that runs opposite the hypothesized direction. Future research might explore these nuances by examining organizational narratives that are derived from lower-level employees (e.g., memos, emails) to determine if TMT characteristics are actually influencing the organization's identity and behaviors or if these documents serve as more idealistic communications to various stakeholders.

Another possible explanation for our mixed findings, returning to the notion of faultlines, is that TMT education and tenure—more so than other characteristics in our study—define strong faultlines of a subgroup. Thus, highly-educated and longer-tenured executives identify with their subgroup in a way that withstands the organizational complexity and inertia associated with larger firms. Such executives may provide distinct capabilities to TMTs in larger IPO settings, particularly in terms of being able to navigate the complexities associated with the IPO process, while also imposing more virtuous ideals and ethical behaviors. Overall, our findings should spawn more expansive research on faultlines that carefully considers how demographic subgroups might serve as "healthy divides" (Gibson & Vermeulen, 2003), both directly and as a contingency, in the development of organizational virtue. This type of research is crucial to our understanding of emergent constructs such as OVO, and "help define boundary conditions for empirical relationships and also shed incremental light on main effects" (Carpenter, Geletkanycz, & Sanders, 2004: 764). Because organizational virtue is innately important to business, discovery of additional contingencies—be it environmental, organizational, or individual—is a recommended line of future research.

While the upper echelon perspective provides logic in which to situate the findings presented here, our consideration of two separate, temporally-distant documents offers an explanation and empirical support to clarify the nature of organizational virtue at two critically distinct points in time. Thus, beyond the widely understood and substantial technical differences between IPO prospectuses and 10-Ks, our consideration of these separate documents enables a broader understanding of organizational virtue in firms transitioning from an IPO—a critical juncture of organizational

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development which exposes the firm and its management to public scrutiny for the first time—to a more established public entity. Since findings in the OVO literature have, up to this point, largely relied on data sets composed of a single organizational narrative type (e.g., Payne et al., 2013), our results highlight an important annotation to emerging research streams by suggesting that organizational virtue may have an enduring aspect. Put differently, despite the many significant transitions experienced by firms and their executive teams during the first year following an IPO, virtuousness may endure and perpetuate under the tutelage of TMT members ascribed with certain characteristics. Hence, this article not only extends upper echelon research further into the IPO domain, but also contributes to research on OVO by revealing important contextual conditions under which certain points in the life of an IPO firm may or may not be meaningful to the perpetuation of an orientation toward organizational virtue. Overall, we propose that to fully understand the enduring nature of organizational virtues, scholars could move beyond the two distinct time points employed in this article; in doing so, future research might seek to determine the lasting temporal effects of virtuous rhetoric between—or within—IPO firms on financial outcomes or performance.

The findings of this article must be considered in light of several limitations which, in turn, suggest additional avenues for future research. First, the nature of the sample used in our study could limit the generalizability of our results to other contexts. Although IPO firms represent a useful setting through which we could gather and analyze relevant data, the findings here may not easily transfer to other organization types. Thus, future research might build on our study to more specifically examine other organizational and environmental contingencies so that a more nuanced understanding of their effects on the TMT-to-OVO relationship might be gained. For example, variables such as environmental uncertainty or industry structure offer possibilities—embedded in the history of the firm—that lead to more compelling research since such variables change over time (e.g., Beckman & Burton, 2011).

This article was also constrained based on its employment of certain demographic proxies to represent differences in beliefs, values, and character strengths of top managers. Although this limitation pervades the upper echelon literature, the variables examined here mirror commonly investigated TMT demographic characteristics with extensive support in the extant literature. Thus, we encourage future researchers to expand on our study in order to examine deeper compositional measures that better represent executive character strengths and values in order to "put flesh on demographic bones" (Wells, 1975: 198). For instance, TMT modesty has been considered in more contemporary upper echelon literature (Ridge & Ingram, 2017), supported by the premise that modesty represents a basic business virtue exhibited by individuals (Chun, 2005; Moberg, 1999). Thus, exploring how modesty among executives might interact with certain dimensions of OVO offers intriguing future possibilities. In any case, introducing more nuanced measures, through survey, experimental, or interviewing techniques, might allow us to better understand the underlying mechanisms of executive character strengths—with data from inside the team itself—and new types of research questions that open up on this front.

Despite prior research that suggests investors assign relevance to language espoused in firm communications (e.g., Payne et al., 2013), and our employment of two different samples of company documents, there is no full assurance that our content analysis reflects actual virtues and subsequent actions of the firm. Indeed, organizations may espouse virtuous rhetoric to simply enhance ethical impressions and perceptions of quality with investors or other highly influential stakeholders. Thus, some or all of an organizational narrative may only serve to signal the desired virtuous orientation, but have little association with the practice of virtuous behaviors—although the use of organizational narratives as an impression management mechanism is inherently risky since false signaling (i.e., where the actual behaviors of the firm do not align with the language employed) could also mean negative performance implications or a damaged reputation for a firm. These concerns could be mitigated through examination of organizational virtue using survey methods or qualitative tactics, which might capture dynamics found in other organizational settings that could be integrated with our findings to glean insights from different contextual settings.

Finally, our research design also prevented us from addressing questions related to causality and alternative causal sequences. To initially strengthen the causality argument, or even possible reciprocal relationships, future research should seek to substantiate to what extent written communication, such as the narratives studied herein, may represent actual beliefs and perceptions of the writers (e.g., D'Aveni & MacMillan, 1990) or intangible firm attributes (e.g., Hanley & Hoberg, 2010). As an example, expanded longitudinal research could be employed to determine whether our study reinforces tautological arguments that render causation difficult or even futile to establish. Similar to the ongoing debate concerning organizational identity's static (e.g., Whetten, 2006) or fluid nature (e.g., Gioia, Schultz, & Corley, 2000), we propose the element of time be further integrated into a theoretical discussion central to the development of organizational virtues. We surmise that in cases where a firm's TMT composition changes through voluntary departures or board-imposed replacement, there may be merit in a longitudinal study that considers how OVO changes as a result of TMT turnover or exit.

CONCLUSION

Cognizant that a more nuanced investigation of the origins and development of organizational virtues has been long overdue, Payne et al. (2011) initially charged the academic community to examine organizational virtue in various contexts in order to highlight its growing relevance to organizational research, and what managers might do to promote virtuous behavior and orientations. Our study responds to this mandate and underscores the academic necessity of additional finer-grained examinations of top executive teams (e.g., Beckman & Burton, 2011; Hambrick, 2007). Taking an upper echelon perspective, we provide new insights into the antecedents of virtuous organizations, linking key TMT characteristics to an IPO firm's orientation toward virtue, and examining this association from a contingency perspective. In short, our findings position business ethics scholars to better understand if and how TMTs, especially in critical transition settings such as IPO firms, are interrelated to

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character strengths and virtues that serve as components of an ethical organization. More generally, the findings presented here prompt the need for continued empirical examination of consequences related to executive character strengths that affect the complex set of issues surrounding the development of organizational virtue. We are optimistic that our findings can serve as a baseline and pave the way for the next generation of inquiries toward a more comprehensive understanding of the emergence and perpetuation of business ethics.

NOTE

1. In response to an anonymous reviewer, we re-estimated each model without the controls that were initially not significant. No substantive differences were discovered in the reported results.

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