

**GOAL ORIENTATION AS SHAPING THE FIRM'S ENTREPRENEURIAL  
ORIENTATION AND PERFORMANCE**

A Dissertation

by

JUSTIN W. WEBB

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2009

Major Subject: Management

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**ABSTRACT**

Goal Orientation as Shaping the Firm's Entrepreneurial Orientation and Performance.

(December 2009)

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Firms' top decision makers cannot possibly know what decisions to make. Rather, decision makers must interpret their situations and make the best possible decision based upon their interpretation of their situations. In this dissertation, I examine decision-makers' goal orientations as influencing how they interpret their situations and then respond through making decisions in terms of their firms' entrepreneurial orientations. I also examine whether these decisions influence firm performance. I surveyed top firm decision makers in the Association of Former Students' database at Texas A&M University. The hypotheses were tested using a structural equation modeling.

Using a sample of 273 firms, I find that decision-makers' goal orientations shape their firm's entrepreneurial orientations, which in turn influence firm growth, relative performance, and expected future performance. Possessing a learning goal orientation was found to be positively related to innovativeness, proactiveness, and risk taking. A performance prove goal orientation was positively related to innovativeness, whereas a performance avoid goal orientation was negatively related to innovativeness and risk taking. Only a proactive firm posture was found to be positively related to firm performance.

The results for this dissertation provide compelling support for upper echelons theory. Decision-makers' finer-grained personal attributes are found to shape firm-level outcomes. More specifically, decision-makers' goal orientations are found to shape the firm's entrepreneurial orientation and, to some extent, performance. Interestingly, coarse-grained personal attributes captured in demographic proxies and used as control variables in the analyses did not provide consistent support for upper echelons theory. The results suggest that scholars need to take a finer-grained perspective of upper echelons theory.

A substantial amount of research has established the link between individuals' goal orientations and how they interpret and respond to their situations. The research here has extended this relationship to the top decision-making context in firms where individuals face strong situational forces caused by uncertainty, complexity, and dynamism. I hope that this research encourages other scholars to (1) examine more complex models of how decision-makers' personal attributes influence their entrepreneurial decisions in terms of both recognizing and exploiting opportunities, and (2) examine other finer-grained attributes of top decision makers within a finer-grained framework of the decision-making process.

## ACKNOWLEDGEMENTS

While I have long held the goal of earning a doctorate, the road to achieving this has been lengthy with many twists and turns. Countless individuals have supported me throughout the years, before and during the doctoral program. I would briefly like to acknowledge those individuals that have supported me along the way, providing me the motivation, mindset, and knowledge to be successful in this endeavor.

I first would like to acknowledge and thank my family. While my family has invested many years in supporting, shaping, and strengthening me, there are a few moments I would like to recall. Early on, my mom (Luitgard H. Webb) instilled in me the (1) importance of striving to be the best and not settling for average, and (2) the importance of an education. I remember receiving a 98 on an elementary school test, of which I was quite proud, only to be asked by my mom as to why I did not get a 100. In another instance around the time of the first grade, I tried saving paper on a math test by cramming my answer in the corner of a piece of paper, causing me to not be able to read my writing and to answer the question incorrectly. Needless to say, this was a lengthy conversation during which my mom emphasized the utmost importance of an education, but perhaps equally important, that she would provide all the resources and support I would need to achieve the best education possible (which she and my dad have). Speaking of whom, my dad (John W. Webb) also shaped my motivation and mindset from an early age. I remember one particular instance on a hot summer day (likely while I was still in elementary school) in which I greeted my dad at our basement door upon his return from work. In this particular and uncharacteristic instance, my dad was not very happy, having pinched his finger badly in some sort of clamp. At this time, he said something to me that has stuck with me since – that is, “Get your education so you don’t have to be an electrician when you grow up.” I would

also like to thank my brother (John W. Webb II). If he could tape envelopes a little faster, perhaps I could have finished this dissertation a semester ago! While I was usually stressed out, John provided the necessary distractions in trying to help me relax during the dissertation process. Finally, I would like to acknowledge and thank my fiancée (Siriporn Thayaprasat). During my doctoral program, Sara has been a constant source of support. She has worked all day and night, she has paid the bills, she has lent an ear to all of my whining, and she has been the most beautiful person in the world to come home to everyday.

I would also like to thank Duane Ireland. He and I first met at the University of Richmond, where I served as his graduate assistant. Dr. Ireland was the first to introduce me to the scholarly field of management and conducting research, and he eventually motivated me to switch my goal from a PhD in chemical engineering to one in management. Dr. Ireland provided me tremendous support in applying to Texas A&M and in every particular instance of need following during my time in the doctoral program.

I would like to thank my committee, including my co-chairs, Duane Ireland and Mike Hitt, and my committee members, Laszlo Tihanyi, Joe Coombs, and Oi-man Kwok. I was exceptionally fortunate to have each of these individuals serve on my committee. I was provided extraordinary freedom in deciding my topic of interest and extraordinary scholarly support as I progressed through the dissertation. Doors were always open, and for this I am extremely grateful. Besides serving on my committee, each of these individuals has become a good colleague, co-author, and friend of mine.

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## INTRODUCTION

Entrepreneurship is a process through which individuals identify, evaluate, and exploit opportunities (Hitt, Ireland, Camp, & Sexton, 2001; Shane & Venkataraman, 2000; Stevenson & Jarillo, 1990). Individuals and firms face enormous uncertainty in undertaking this process (Alvarez, 2007; McMullen & Shepherd, 2006). When exploiting new opportunities, to varying extents individuals and firms lack established routines, relationships with suppliers and customers, proven models of operation and strategy, etc. As such, entrepreneurship manifests through a recursive process of learning and adaptation (i.e., structuration) as decision makers construct their businesses (i.e., through strategic actions) while seeking to understand their uncertain environment (Chiasson & Saunders, 2005; Sarason, Dean, & Dillard, 2006). Learning and adaptation are essential to successful use of entrepreneurship. Nevertheless, scholars have just recently begun to discuss learning and adaptation processes in the entrepreneurship context (Cope, 2005; Holcomb, Ireland, Holmes, & Hitt, 2008; Minniti & Bygrave, 2001).

The purpose of this dissertation is to determine whether individual decision-makers' traits corresponding to their individual-level approach to learning are related to their firms' adaptation processes. Upper echelons theory (e.g., Hambrick & Mason, 1984) suggests that the characteristics of firms' decision makers, such as their values, functional background, and psychological traits, can shape firm-level action. Integrating goal orientation research with the upper echelons perspective, the specific trait on which the proposed research will focus is the decision-maker's goal orientation because of the theoretically established link between goal orientations and decisions concerning how to adapt within achievement situations (e.g.,

Kozlowski, Gully, Brown, Salas, Smith, & Nason, 2001; LePine, 2005). Goal orientation refers to an individual's *implicit* goals that motivate the interpretation, understanding, and response to achievement situations (Breland & Donovan, 2005; Dweck & Leggett, 1988; VandeWalle, Brown, Cron, & Slocum, 1999). Individuals' goal orientation influences how they learn and the actions taken to respond to what they have learned. Goal orientation captures an individual's motivation to interpret and respond to achievement situations characterized by complexity and uncertainty. As such, goal orientation is a particularly relevant trait to examine because executives are "not uniformly open-minded about change" (Hambrick, Geletkanycz, & Fredrickson, 1993: 401), and goal orientation can help to explain such individual differences. Furthermore, given the complexity and uncertainty of their role, a key task of decision makers is to interpret, rather than know, their situation in determining the firm's actions (Hambrick, 2007).<sup>1</sup>

Dweck and her colleagues (Dweck, 1986; Dweck & Leggett, 1988) were the first scholars to examine goal orientation, comparing individuals who possessed learning goal orientations with those possessing performance goal orientations. Individuals with a learning goal orientation seek to increase competence, master tasks, and understand new things. Individuals with a performance goal orientation desire to *prove* competence and gain favorable judgments while *avoiding* negative judgments of their competence (Dweck, 1986). Given this conceptualization, VandeWalle (1997) found empirical support for and advocates viewing performance goal orientation as having two dimensions: performance prove and performance

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<sup>1</sup> The research here focuses on firms' top decision makers. I use the terms "decision maker" and "top executive" interchangeably throughout the dissertation. I do not specifically examine "entrepreneurs" per se. My view is that individual entrepreneurs are defined by their actions and the actions they support in their respective firms. As such, the decision makers that I will describe in my sample that support entrepreneurial orientations may be deemed entrepreneurs, whereas those decision makers that support more conservative orientations would not be considered entrepreneurs.

avoid. Both the two-dimensional and three-dimensional conceptualizations have been used in numerous empirical studies; however, the three-dimensional conceptualization of learning, performance prove, and performance avoid goal orientations appears to account for relatively more of the recent empirical research and provides greater incremental validity (Payne, Youngcourt, & Beaubien, 2007). Herein, I use the three-dimensional conceptualization of goal orientation to examine executives' decisions.

What individual decision makers learn through interpreting their situations can inform their decisions regarding how the firm should adapt. The construct I use to capture the firm's posture in terms of adapting to changes in the external environment is entrepreneurial orientation. Although a five-dimensional conceptualization of entrepreneurial orientations has been developed (Lumpkin & Dess, 1996), on an empirical basis scholars have commonly examined three dimensions of entrepreneurial orientation: innovativeness, proactiveness, and risk-taking characteristics of the firm's posture (Lumpkin & Dess, 1996; Miller, 1983; Wiklund, 1999; Wiklund & Shepherd, 2003b).<sup>2</sup> Innovativeness represents firm-level willingness to develop new ideas, products, processes, creativity, and experimentation; proactiveness refers to firm-level willingness to take action to resolve future needs and problems; risk-taking refers to the firm-level willingness to make resource investments when there is a significant probability for loss (Lumpkin & Dess, 1996). Each of the dimensions of entrepreneurial orientation corresponds to an "adaptation-based" dimension of firm posture enacted by the top decision

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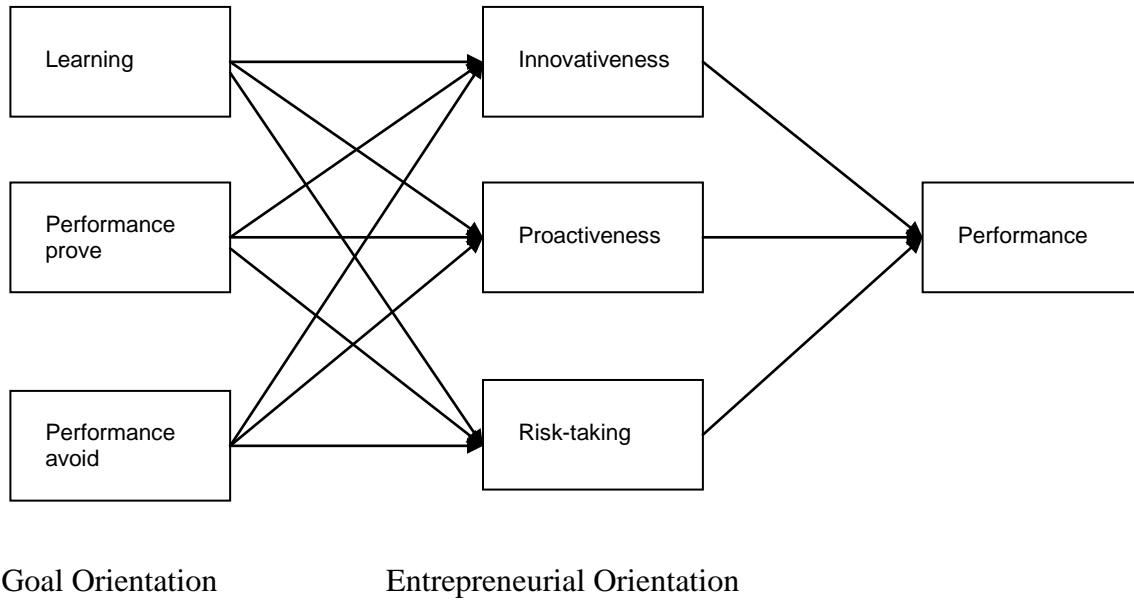
<sup>2</sup> In this dissertation, I follow previous scholars in empirically examining the three-dimensional conceptualization of entrepreneurial orientation. I focus on the three dimensions for a number of reasons. First, as an additional dimension of entrepreneurial orientation in the five-dimensional conceptualization, autonomy refers to a firm posture to support individual action *throughout* the firm to support entrepreneurship. Given my expectation that many firms in my sample would be small, as they in fact turned out to be, and also given my focus on the top executives of the firm, I felt the autonomy dimension would not necessarily apply. While measures of competitive aggressiveness have been developed (Lumpkin & Dess, 2001), inspection of the measures suggested that the measures do not necessarily capture aspects of adaptation (i.e., learning and making adjustments). As I will describe later, each dimension of the three-dimensional conceptualization of entrepreneurial orientation can be discussed in terms of learning and making adjustments.

maker in that each dimension captures firm-level support for both learning and adjusting. As such, one might expect decision-makers' goal orientations to explain differences in their firm's postures in terms of their orientation towards adaptation.

I test the mediation model illustrated in Figure 1. Drawing on upper echelons theory (Hambrick & Mason, 1984), firms' primary decision makers (i.e., CEOs, presidents, and/or business owners) are able to shape the strategic decisions of their firms because of the influence afforded by their positions. Moreover, how decision makers interpret and respond to their situations influences the decisions they make. Therefore, top decision-makers' goal orientations are expected to affect firm-level entrepreneurial orientation. In turn, the dimensions of entrepreneurial orientation are expected to be positively related to firm performance.

This research seeks to make three contributions. First, previous research has largely focused on the performance outcomes of entrepreneurial orientation. To my knowledge, this study is the first to examine the psychological antecedents of entrepreneurial orientation. The findings may inform whether firm postures are (1) intrinsically motivated, (2) learned, or (3) molded by the socio-economic context. As a second contribution, this study expands the scope in which goal orientation has been examined to the entrepreneurship context. More specifically, I examine the relationship between decision-makers' goal orientation and their firms' strategic actions, operationalized as entrepreneurial orientation. The firm's top decision makers have great influence in how decisions are made in their firms in that they are a, if not the, final voice in the decision-making process and their inputs are often significant in providing direction for the firm. Therefore, the relationship between goal orientation and entrepreneurial orientation may be expected to be quite strong. Conversely, decision makers often operate in highly uncertain and

**FIGURE 1**  
**Hypothesized Model of Relationships for Goal Orientation, Entrepreneurial Orientation and Firm Performance**



unstructured environments; therefore, situational factors may obscure the effects of individual-level goal orientation on firm-level entrepreneurial orientation. Finally, my third contribution is to upper echelons research. Numerous scholars have argued that upper echelons researchers have relied too much on coarse-grained demographic measures, leading to ambiguous and inconsistent findings (Priem, Lyon, & Dess, 1999; West & Schwenk, 1996). This is one of the first studies (see also Miller, Kets de Vries, & Toulouse, 1982; Peterson, Smith, Martorana, & Owens, 2003) to incorporate finer-grained psychological traits to empirically examine upper echelons phenomena and the first study to examine goal orientation in this context.

Before discussing the theory, it should be noted that I am interested in firms' top decision makers (i.e., executives) in general – not entrepreneurs specifically. Some decision makers may make entrepreneurial decisions whereas other decision makers may make relatively more conservative decisions. Within this dissertation, I will examine the relationship between the decision-makers' goal orientation and the degree to which their decisions are entrepreneurial.

The dissertation proceeds as follows. In the next section, I discuss upper echelons logic to explain how primary decision makers shape firm action. The following section introduces goal orientation, distinguishes goal orientation from other psychological traits, and reviews research on goal orientation, with a particular emphasis on adaptation. From here, I shift to a discussion on entrepreneurial orientation, the development and meaning of this construct, and a review of entrepreneurial orientation research. I then develop hypotheses for the set of relationships illustrated in Figure 1. Following the development of the hypotheses, I describe the methodology used to test the hypotheses. Results follow the methodology section, and then I provide a discussion of the results in terms of their support for theory, their relationship with past research, limitations, and prospects for future research.



## UPPER ECHELONS THEORY

The major premise of upper echelons theory is that decision makers are able to shape the firm's strategic actions and to some extent influence firm performance (Hambrick & Mason, 1984). Hambrick and Mason first developed this theory as a competing perspective to arguments of organizational inertia, in which firms are swept along by external forces and/or incapable of managing themselves. The researchers base the upper echelons theory on two key assumptions: "(1) executives act on the basis of their personalized interpretations of the strategic situations they face, and (2) these personalized construals are a function of the executives' experiences, values, and personalities" (Hambrick, 2007: 334). In other words, a firm's decision makers face uncertain and complex situations. Because of individuals' bounded rationality (March & Simon, 1958), decision makers cannot possibly know exactly how to resolve this uncertainty and complexity. Therefore, decision makers must interpret their situations. During this interpretation process, the alternatives considered by decision makers are continuously filtered by the knowledge of various alternatives, values that define the acceptability of alternatives, and personality traits that influence the motivation to consider alternatives.

Following Hambrick and Mason's initial development, scholars have undertaken extensive efforts to examine and validate the upper echelons theory (Carpenter, Geletkanycz, & Sanders, 2004). Scholarly focus on the top management team stems from the argument that decision makers confer, exchange ideas, and make decisions as a group. As such, significant amounts of research have focused on the effects of various forms of top management team heterogeneity on firm decisions and performance (Certo, Lester, Dalton, & Dalton, 2006; Knight, Pearce, Smith, Olian, Sims, Smith, & Flood, 1999; Tihanyi, Ellstrand, Daily, & Dalton, 2000).

Despite Hambrick and Mason's initial recommendation to focus on top management teams, scholars have also largely examined the chief executive officer (CEO) through an upper echelons lens (e.g., Barker, & Mueller, 2002; Bigley & Wiersema, 2002; Miller & Toulouse, 1986; Wu, Levitas, & Priem, 2005). While CEOs are only one member of a top management team, in some instances CEOs are in a position to unilaterally shape the firm's direction. Finkelstein (1992) identified four forms of power (i.e., structural, ownership, expert, and prestige) afforded by their position that allow CEOs to shape firms' decision-making processes. Structural power refers to the hierarchical or authority positions held by the CEO. For example, CEOs that also hold the Chairman of the Board position possess greater structural power. Ownership power is increased when the CEO owns a significant ownership stake in the firm. Expert power emerges when the CEO possesses knowledge that is valuable to the firm. Finally, prestige power derives from attributes that increase the CEO's personal status, such as education at elite institutions and membership on numerous boards of directors (Finkelstein, 1992). Through the various forms of power, CEOs have greater influence in decision-making processes relative to other top management team members. When CEOs wield power, the CEOs' values, traits, and other personal characteristics may inform decisions regarding strategic actions more so than the collective attributes of the top management team. Besides the various factors that provide CEOs power, CEOs are also individually influential because they have significant discretion in choosing the members of their top management teams and how they interact (Hambrick & Finkelstein, 1987; Peterson, Smith, Martorana, & Owens, 2003). As such, CEOs indirectly influence the firm's strategic and operational decisions without taking into account their direct interaction with top management team members.

In the research focused on the CEO, results generally support the assertions of the upper echelons theory. For example, Jensen and Zajac (2004) found that CEOs with finance backgrounds, used as a proxy for the CEO's propensity to view the firm as a bundle of synergistic assets, favor acquisition versus organic growth. In a separate study, Hambrick et al. (1993) examined the effect of CEO organizational and industry tenure on the commitment to the status quo. Although hypotheses for organizational tenure were not supported, the authors found that industry tenure was positively related to commitment to the status quo, explained perhaps by a tendency to rely on "industry recipes" increasingly over time. In an interesting contrast to the previously noted studies, Hayward and Hambrick (1997) examined hubris, or overconfidence, as a characteristic of CEOs with potentially negative implications concerning firm decisions and performance. Hubris led CEOs to higher acquisition premiums for target firms, which in turn led to lower firm performance as measured by shareholder returns.

As noted previously and as is evident from the discussion of empirical studies, scholars have primarily used demographic proxies to examine upper echelons phenomena (Carpenter et al., 2004). Miller and his co-authors (Miller, Kets de Vries, & Toulouse, 1982; Miller & Toulouse, 1986) provided a few notable exceptions. Miller et al. (1982) found support for positive effects of top executive internal locus of control on strategic decisions involving innovativeness, risk taking, and proactiveness (i.e., what Miller et al. [1982] referred to as strategy-making behaviors but has more recently been referred to as entrepreneurial orientation [Lumpkin & Dess, 1996] or strategic posture [Covin & Slevin, 1990]), reasoned by these executives' confidence in their abilities to control the consequences of their actions. Miller and Toulouse (1986) added need for achievement and flexibility to locus of control to examine the

effect of CEO personality on strategy and structure decisions. The authors found that each of these psychological traits led to a specific strategy/structure configuration.

While imperfect, the use of demographic proxies has provided significant empirical support for the upper echelons theory (Hambrick, 2007). However, some scholars (e.g., Markoczy, 1997) question the value of this empirical support and whether the use of such coarse-grained demographic proxies can accurately inform theory. Markoczy (1997) elaborates by raising the question of what degree of roughness is acceptable in allowing a substitution. Is the substitution of a demographic proxy for a finer-grained measure acceptable when the proxy and finer-grained measure are correlated at .2? What if the correlation was .5 or .8? Lawrence (1997) also suggests that while demographic proxies may provide empirical support for theory, the use of proxies leaves a “black box” in terms of what truly explains an observed relationship (i.e., what are the intervening processes between the set of observed variables). Given such concerns, examining decision-makers’ values and psychological traits can provide a finer-grained approach to testing upper echelons phenomena and more accurately determining the sources of decision-makers’ decisions. In the next section, I discuss goal orientation, which is expected to be a key psychological trait for understanding CEOs’ strategic and operational decisions.

## GOAL ORIENTATION

### *Goal Orientation as a Construct*

Goal orientation research originated in educational psychology with the work of Dweck and her colleagues (Dweck, 1986; Dweck & Leggett, 1988; Elliot & Dweck; 1988).<sup>3</sup> Dweck conceived of goal orientation as a relatively stable dispositional trait that guides the construction of intrinsic goals for interpreting and responding to achievement situations and their outcomes. Individual differences of intrinsic goals are argued to stem from whether an individual holds an entity theory of ability or incremental theory of ability. Individuals possessing an entity theory of ability believe that ability and intelligence are fixed or uncontrollable. This belief leads individuals to choose a performance goal orientation, in which individuals seek to demonstrate their competence and avoid negative judgments. A performance goal orientation manifests in a maladaptive response pattern “characterized by challenge avoidance and low persistence in the face of difficulty” (Dweck, 1986: 1040). Conversely, other individuals believe that ability and intelligence are malleable and may be increased incrementally with effort. This belief orients individuals to a learning goal orientation characterized by the desire to increase competence, master tasks, and understand new things. Compared to individuals holding a performance goal orientation, learning goal-oriented individuals have a more adaptive response pattern “characterized by challenge seeking and high, effective persistence in the face of obstacles” (Dweck, 1986:1040). The research of Dweck and her colleagues focused primarily on children.

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<sup>3</sup> Not only did goal orientation emerge in educational psychology, but the vast majority of goal orientation research, even research with organizational implications, has been conducted in educational settings. As with any research methodology decision, classroom- and lab-based studies have their critics, who argue against the generalizability of these studies to real world organizational settings. Classroom- and lab-based studies, however, provide a number of research advantages, including (1) the ability to establish settings that control for extraneous factors, and (2) greater efficiency in tapping potential respondents. Such scholarly value can be useful to establishing the foundations for strong theory, which may then be used more efficiently by others scholars in equally important research to discern whether the theory generalizes to other settings. My dissertation research seeks to extend the classroom/lab-based research to the top decision-making context as well as build upon previous goal orientation research by examining the relationships between goal orientation and entrepreneurial orientation dimensions.

Goal orientation was not introduced to the organizational context until the mid-1990s (Farr, Hofmann, & Ringenbach, 1993).

Scholarly understanding of the goal orientation construct has continuously evolved since Dweck's foundational work. A number of advancements have transformed the foundation and conceptualization of goal orientation. Addressing the foundation of goal orientation first, as noted above, Dweck's theory of goal orientation was based on the premise that individuals held different theories of ability. A recent meta-analysis (Payne et al., 2007) found support consistent with Dweck's logic; however, the authors (p. 140) added, "Contrary to Dweck's (1986) perspective, the effect sizes were very small, providing little evidence for Dweck's (1986) view that implicit theories are the primary underlying antecedent of [goal orientation]." The entity versus incremental theories of ability seemed to strongly tie goal orientation to locus of control. As will be discussed later in the "Goal Orientation and Related Constructs – Locus of Control" section (p. 16), goal orientation and locus of control are correlated yet considered theoretically and empirically independent constructs. The meta-analytic results provide further support for viewing these two constructs as distinct.<sup>4</sup>

Goal orientation's conceptualization has also evolved over the past two decades. The original conceptualization of goal orientation was a unidimensional construct anchored by learning goal orientation and performance goal orientation (Dweck, 1986). Individuals were expected to hold either a learning goal orientation or a performance goal orientation. In four independent studies, however, Button, Mathieu, & Zajac (1996) found convergent and

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<sup>4</sup> It is also useful to consider an analogy in order to understand goal orientation and locus control as independent constructs. When it rains, the grass grows and more skunks are killed on the road. The grass growing and skunks killed are not really related as well. The grass grows because water is a primary building block used by grass, along with nutrients in the soil and sunlight, to grow. Skunks, trying to move to higher ground during the rain, often move onto roads where they are hit, due to numerous other contributing factors (e.g., nighttime, poor visibility, drivers not paying attention, faster speed limits, and so on). So, in a similar line of reasoning, while a theory of ability may contribute to the formation of both goal orientation and locus of control, both constructs may be caused to varying extents by a host of other antecedents.

discriminant validity for a two-dimensional construct of goal orientation comprised of learning goal and performance goal orientation constructs. These results suggest that an individual may hold both learning and performance goal orientations.<sup>5</sup> In his study, VandeWalle (1997) found support for a three-dimensional construct of goal orientation. While maintaining support for a learning goal orientation construct, his conceptualization argues that performance goal orientation be viewed as two separate constructs: one that captures an individual's desire to *prove* his/her competence (i.e., performance prove) and another that captures an individual's desire to *avoid* negative judgments (i.e., performance avoid). The scales developed by Button et al. (1996) and VandeWalle (1997) have both been widely used in organizational research (DeShon & Gillespie, 2005; Payne et al., 2007).

Conceptual differences also exist concerning what goal orientation represents. Various terms used to describe goal orientation include goals, traits, quasi-traits, mental frameworks, and beliefs (Deshon & Gillespie, 2005). Terminological differences may be explained in part by ambiguity over where goal orientation fits within the goal hierarchy (Brett & VandeWalle, 1999; Cropanzano, James, & Citera, 1992). Cropanzano et al. (1992) describe goals as arranged within a hierarchy with distal, trait-like abstractions at the top, values- and identity-based goals in the middle, and proximal, behavioral goals at the bottom. Brett and VandeWalle (1999) place goal orientation at the abstract, trait-like level within this framework. In contrast, DeShon and Gillespie (2005) provide a goal hierarchy with four levels, including (1) self goals that generally define desired outcomes but do not specify means through which to acquire these outcomes, (2) principle goals that represent general heuristics for behaving (i.e., fairness), (3) achievement goals (i.e., *goal orientation*), and (4) action plan goals that more specifically define strategies for

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<sup>5</sup> Although numerous scholars have suggested that an individual may hold both learning and performance goal orientations, research has not been conducted to determine how learning and performance goal orientations co-exist or how the two interact to influence individual or team performance.

achieving desired goals. Given this placement in the goal hierarchy, DeShon and Gillespie (2005) classify goal orientation as a quasi-trait, or a fairly stable intrinsic goal motivation.

While a goal hierarchy perspective rectifies some of the various descriptive terms, scholars differ concerning the exact placement of goal orientations within a goal hierarchy. These differences stem from different opinions of the stability of goal orientation. For example, Brett and VandeWalle (1999) suggest that goal orientation exists at the abstract trait level, while DeShon and Gillespie (2005) seem to place goal orientation as more proximal to actual behaviors and, therefore, less stable. Evidence suggests that goal orientation is somewhat stable (Breland & Donovan, 2005; Button et al., 1996), with scholars converging on a conceptualization of goal orientation as a quasi-trait (DeShon & Gillespie, 2005; Porter, Webb, & Gogus, 2007). A quasi-trait is “a somewhat stable trait that can be modified by appropriate situational characteristics” (DeShon & Gillespie, 2005: 1101). Using a confirmatory factor analysis, Button et al. (1996) simultaneously examined dispositional and situational measures of learning and performance goal orientation. Dispositional learning and performance goal orientations were found to be strongly and positively correlated with their respective situational counterparts. However, the analysis supported a four-factor model of dispositional and situational learning and performance goal orientations. These results suggest that goal orientation has both dispositional and situational components (Button et al., 1996).

Given this evidence, I view goal orientation as a quasi-trait. More specifically, I define goal orientation as a distal motivation that facilitates interpretation and response to external stimuli, which in turn influence more proximal, behavioral goals.



### *Goal Orientation and Related Constructs*

Extensive research has been conducted to establish goal orientation's relationship with similar constructs, including self-efficacy, locus of control, and conscientiousness (Payne et al., 2007). In the following paragraphs, I describe empirical findings for the relationships of goal orientation with this set of constructs.

**Self-efficacy.** Self-efficacy refers to “one’s belief in one’s capability to perform a task” (Gist, 1987: 472). Organizational scholars have generally viewed goal orientation as an antecedent to self-efficacy, although some educational psychologists (e.g., Elliot, 1997) have suggested that self-efficacy underlies goal orientation (Gong & Fan, 2006). Drawing on the organizational perspective, learning goal orientation is generally expected to be positively related to self-efficacy. Individuals possessing a learning goal orientation perceive failure as caused by a lack of effort as opposed to low ability and view challenges as opportunities to learn. Therefore, setbacks or failures for learning goal oriented individuals do not affect one’s beliefs concerning his or her ability to manage the demands of a task. Conversely, because performance goal oriented individuals perceive ability as stable and not malleable, failure is attributed to low ability. Performance goal oriented individuals’ focus on ability as their source of failure leads to the general expectation for a negative relationship between performance goal orientation and self-efficacy.

Empirical findings generally support the hypothesized positive relationship between learning goal orientation and self-efficacy, but the hypothesized negative relationship between performance goal orientation and self-efficacy has been less consistent. Phillips and Gully (1997) examined the relationship between goal orientation and students’ self-efficacy for performing on an academic task (i.e., exam performance). As expected, learning goal orientation positively

predicted self-efficacy, and performance goal orientation negatively predicted self-efficacy. In a similar study in an academic context, Gong and Fan (2006) examined foreign exchange students' academic and social self-efficacy in their new cultural environments. Academic self-efficacy refers to a student's belief that he or she can adapt to new teaching and learning modes, while social self-efficacy refers to a student's belief in his or her ability to develop relationships outside of the academic context. Learning goal orientation was positively related to both academic and social self-efficacy, while performance goal orientation was negatively related to social self-efficacy alone, having no relationship with academic self-efficacy.

Two explanations may account for the mixed findings (i.e., negative versus no relationship) for performance goal orientation. First, in separate studies, Bell and Kozlowski (2002) and Porter (2005) suggest that ability interacts with performance goal orientation. More specifically, better performers make fewer mistakes and, therefore, maintain higher levels of self-efficacy, whereas low performers attribute their mistakes to low ability and possess lower self-efficacy. Results from both studies support the *ability x performance goal orientation* interaction on self-efficacy. Providing a second explanation, VandeWalle, Cron, and Slocum (2001) suggest that the mixed findings stem from the scale used to measure goal orientation. These authors assert that findings have been confounded by the Button et al. (1996) scale that combines performance prove and avoid dimensions in a single performance goal orientation construct. VandeWalle et al. (2001) find that a performance prove goal orientation is not related to self-efficacy. Performance avoid goal orientation is negatively related to self-efficacy, which may be explained by a higher state of negative emotions associated with failure in individuals holding a performance avoid goal orientation.

**Locus of control.** Locus of control refers to beliefs concerning the extent to which one may influence his or her environment (Rotter, 1966). Individuals having an internal locus of control believe that they can influence their environment and are masters of their own fate. Conversely, those with an external locus of control view their lives as more strongly influenced by uncontrollable external forces (Boone, Van Olffen, & Van Witteloostuijn, 2005). Scholars have separated goal orientation and locus of control theoretically and methodologically. “Locus of control pertains to individuals’ perceived control over rewards and outcomes, while goal orientation involves perceptions of control over the basic attributes that influence these outcomes (e.g., one’s level of competence)” (Button et al., 1996: 31). Regardless of whether individuals have control over their outcomes, goal orientation influences individuals’ perceptions of the tools they intrinsically possess to perform in an achievement situation. As one may expect, evidence suggests that locus of control and goal orientation are correlated, yet distinct constructs (Button et al., 1996) that affect one’s self-efficacy and performance in achievement situations (Phillips & Gully, 1997).

**Conscientiousness/need for achievement.** As one of the Big Five personality traits, conscientiousness captures an individual’s propensity to work hard, persist, and pursue goal accomplishment (Barrick & Mount, 1991). Scholars consider conscientiousness to be a broad trait that is composed of numerous narrow traits. Two narrow traits commonly linked to conscientiousness are dependability and achievement motivation (i.e., need for achievement) (Mount & Barrick, 1995; Zhao & Seibert, 2006), although some scholars suggest that conscientiousness also includes order, cautiousness, competence, self-discipline, and deliberation (Dudley, Orvis, Lebiecki, & Cortina, 2006; Major, Turner, & Fletcher, 2006). Of these narrow traits, achievement motivation/need for achievement share the closest relationship with goal

orientation. Need for achievement dates back to McClelland's (1965) early work on employees' needs. In this work, need for achievement reflects an individual's motivation to accomplish difficult tasks and perform at high standards (Jackson, 1974). Although one might expect need for achievement to be positively related to the *level* of one's self-set goals, empirical results have been mixed (Phillips & Gully, 1997). Furthermore, despite not theoretically tied to a *type* of goal (i.e., learning or performance), the propensity for individuals characterized by high need for achievement to persist and work hard suggests that these individuals will be more learning goal oriented (i.e., who persist more in the face of difficulty). In line with this reasoning, meta-analytic results find a moderate, positive relationship between need for achievement and learning goal orientation (and no relationship between need for achievement and performance goal orientation without distinguishing prove and avoid dimensions) (Payne et al., 2007).

#### *Goal Orientation, Adaptation, and Performance*

Beyond establishing goal orientation's relationship with similar constructs, a primary focus of scholars has been to examine adaptation and performance of individuals holding a specific goal orientation. Adaptation refers to managing the demands created by novel situations in the external environment (Chan, 2000). More specifically, adaptation occurs when "organizations and the people in them modify their actions on the basis of an evaluation of their experiences" (Denrell & March, 2001: 523). As this definition implies, adaptation is based on experiential learning, which leads to modification or adjustment of one's actions.

Research consistently shows that individuals possessing learning goal orientations present stronger tendencies towards adaptation behaviors than performance-oriented (prove or avoid) individuals. On the experiential learning side of adaptation, scholars have examined the use of learning/practice strategies as well as seeking external feedback and monitoring one's own

performance. For example, a number of classroom-based studies show a positive (zero/negative) relationship between learning goal orientation (performance goal orientation) and the number and complexity of learning strategies used (e.g., Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1988). For example, using a sample of 275 fifth and sixth-grade students, Meece et al. (1988) found that learning-goal-oriented students had higher cognitive engagement (i.e., used more planning, connecting, and monitoring, etc.) across six different science activities than performance-goal-oriented individuals. The authors argued that the students possessing a learning goal orientation become more involved in their tasks. In contrast, performance-goal-oriented students desire teachers' approval and recognition by finishing tasks quickly and with minimal effort. While learning-goal-oriented students may take a longer time to complete their tasks, their overall understanding is expected to be higher. In a second study examining goal orientation and experiential learning, Ford, Smith, Weissbein, Gully, and Salas (1998) examined the influence of 93 undergraduate students' goal orientation on their activity level (i.e., use of practice strategies) during their training session and meta-cognitive activity (i.e., learning strategies and monitoring activities) during the actual simulated-radar-program exercise. Learning goal orientation was not related to activity level but positively related to meta-cognitive activity; performance goal orientation was not related to either outcome. The authors did not speculate on why learning goal orientation was only a statistically significant predictor for the use of learning strategies in the exercise and not during training sessions. One possible explanation is that the training session context did not create an adequate performance stimulus or achievement situation (Chen & Mathieu, 2008).

Another means through which individuals learn is by evaluating their experiences and the integration of others' viewpoints in this evaluation. VandeWalle (2003) proposed a goal

orientation model of feedback-seeking behaviors. The model incorporates six dimensions of feedback seeking, including the frequency with which feedback is sought, the type of feedback desired, the preferred source for feedback, timing of feedback, the sign of the feedback (i.e., positive or negative), and the method through which feedback is sought. Because learning-goal-oriented individuals view feedback as useful diagnostic information that can improve mastery of tasks, these individuals are expected to seek feedback more often, focus on process feedback that can provide information regarding the task, prefer positive and/or negative feedback from experts and throughout their activities, and actively inquire others for feedback on top of their own monitoring activities. In contrast, performance-goal-oriented individuals seek to preserve their ego and exude an image of competency. These individuals manage the feedback-seeking process to ensure these characteristics. Therefore, a performance goal orientation is expected to lead to less feedback seeking, and when evaluation does occur, there is expected to be more personal monitoring than inquiry. When feedback is sought from others, individuals prefer positive, outcome-based feedback from legitimate, powerful actors after their tasks are complete (VandeWalle, 2003).

Empirical findings offer some support for VandeWalle's assertions. Using a sample of 239 evening students in a fictional project scenario, VandeWalle and Cummings (1997) found learning goal orientation to be positively related to the perceived value of feedback but negatively related to the perceived cost of feedback. The perceived value and cost of feedback partially mediated the positive relationship between learning goal orientation and feedback seeking. Relationships for performance avoid goal orientation were the opposite of learning goal orientation for the entire model. Performance prove goal orientation was positively related to the perceived cost of feedback, but there were no other statistically significant relationships found

for this variable. VandeWalle and Cummings' (1997) overall findings suggest that learning-goal-oriented individuals value and actively pursue feedback to improve the mastery of their tasks. Conversely, performance avoid goal orientations lead individuals to perceive less value in and avoid potentially negative evaluations. Performance prove goal orientations neither facilitate nor deter feedback seeking. Moreover, these findings underscore the importance of distinguishing between performance prove and performance avoid goal orientations.

Porath and Bateman (2006) used a longitudinal field study with salespeople in a second study to examine the relationship between goal orientation and feedback seeking (among other self-regulation tactics [i.e., emotional control, social competence, and proactive behavior]). Similar to VandeWalle and Cummings' (1997) findings, performance avoid goal orientation was negatively related to feedback seeking. In contrast, however, learning goal orientation was not related to feedback seeking, but performance prove goal orientation was positively related to feedback seeking. Porath and Bateman (2006) acknowledge these differences, suggesting that the differences may be attributed to learning and performance-prove goal orientations being complementary short- and long-term predictors of certain behaviors and performance. Similar findings by Tuckey, Brewer, and Williamson (2002) led these authors to suggest that a workplace context may encourage an enhanced performance prove goal orientation as employees seek to meet performance standards and gain promotions as opposed to a university context (i.e., as in VandeWalle and Cummings [1997]) which has a relatively higher emphasis on learning.

In addition to the research that examines "experiential learning" adaptation, researchers have also examined goal orientation's influence on "adjustment" adaptation. Adjustment has been measured in numerous ways: foreign exchange students' academic and social adjustment to their new environment (Gong & Fan, 2006), modification of individual roles within teams

(LePine, 2005), and other self-regulation adjustments (VandeWalle et al., 1999). Gong and Fan (2006) (discussed previously) examined the influence of exchange students' goal orientation on academic and social adjustment, as mediated by academic and social self-efficacy. The authors reasoned that because students possessing a learning goal orientation are less concerned about image and more intent on learning, early setbacks will not influence their confidence (i.e., self-efficacy) and, hence, they are motivated to adjust to their new academic (i.e., teaching styles, instructional methods, etc.) and social settings (i.e., cross-cultural differences). Because performance-goal-oriented individuals are concerned more with preserving an image and showing competency, these individuals may make less effort to adjust (i.e., to avoid negative evaluations of their competency) or may lose confidence with early setbacks, also discouraging future attempts to adjust. Gong and Fan (2006) found support for this model. In his research on salespeople, VandeWalle (2001: 166) reports similar findings, in that a "learning goal orientation enhances not only the likelihood of developing a plan, but also the willingness to adjust the plan to meet emergent situational demands."

In a third study concerned with adjustment, LePine (2005) examines whether a team's goal orientation determines how teams respond to unexpected changes in their tasks (using a radar simulation task) through changes in the team's role structure. While he did not find any direct effects of learning or performance goal orientation on role structure adaptation, teams with difficult goals and learning goal orientations presented high role structure adaptation whereas teams with difficult goals and performance goal orientations were characterized by low role structure adaptation. In supplemental analyses, LePine found that performance-goal-oriented teams communicated in ways that lowered morale and focus on the task, explaining their low levels of adaptation. LePine did not speculate on why goal orientation did not have direct effects



on adaptation; however, Chen and Mathieu's (2008) findings that complementary situational inducements can enhance the effects of goal orientations seems to provide one plausible explanation.

Goal orientation also determines an individual's adaptation to wholly new achievement situations. More specifically, one's goal orientation determines how well an individual transfers learned, fundamental skills from one achievement situation to another. Again, the logic is that a learning goal orientation maintains an individual's level of persistence when tasks become more difficult and challenging. Using a sample of 60 undergraduate students participating in a two-day decision-making simulation task, Kozlowski and his co-authors (Kozlowski et al., 2001) examined adaptive performance by how effectively students generalized fundamental skills learned in the first day's training session to the actual exercise on the second day. The authors showed that a learning goal orientation increases one's self-efficacy while acting within new and challenging settings, which in turn increased adaptive performance. The authors did not test for a direct relationship between performance goal orientation and adaptive performance, but performance goal orientation was not related to training performance, an antecedent of adaptive performance (Kozlowski et al., 2001).

Finally, in terms of performance, learning goal orientation is expected to have a positive relationship with performance by allowing individuals to adapt and stay focused in mastering tasks; performance prove goal orientation is expected to have neutral or slightly negative relationships with performance as individuals seek to maintain image, even at the detriment of performance in some cases; performance avoid goal orientation is expected to have a negative relationship with performance as individuals spend little effort on tasks to avoid negative evaluations. Meta-analytic results are equivocal (Payne et al., 2007). With respect to academic

performance and trait goal orientation measures, confidence intervals contained zero, suggesting no meaningful relationship for any goal orientation dimension. For task performance, only performance avoid goal orientation had a meaningful relationship, with the relationship being negative. For learning and performance prove goal orientation, again the confidence intervals for the meta-analytic results included zero, suggesting no meaningful relationship. With respect to state goal orientation and performance, again there were no meaningful relationships between the goal orientation dimensions and academic performance. In slight contradiction to expectations, learning goal orientation had a neutral relationship with task performance but performance prove goal orientation had a slightly positive relationship with task performance. Both learning and performance prove goal orientations had positive relationships with job performance, although learning goal orientation had a somewhat stronger relationship. Not enough studies had been conducted to test the relationship between performance avoid goal orientation and task or job performance (Payne et al., 2007). To summarize the meta-analytic results, goal orientation relationships with performance seem equivocal. One possible explanation for the equivocal results may be that goal orientation is not a direct predictor of performance; rather, goal orientation indirectly influences adaptive and task-related processes. I intend to examine the indirect influence of goal orientation on performance through adaptive processes as captured by entrepreneurial orientation.

## ENTREPRENEURIAL ORIENTATION

Entrepreneurship is a process through which individuals identify, evaluate, and exploit opportunities (Hitt, Ireland, Camp, & Sexton, 2001; Shane & Venkataraman, 2000; Stevenson & Jarillo, 1990). Entrepreneurial orientation is a construct that captures the degree to which a firm's posture may be characterized as being entrepreneurial (Covin, Green, & Slevin, 2006). Scholars have referred to entrepreneurial orientation using various other terms, including entrepreneurial strategic posture (Covin & Slevin, 1989; 1990), entrepreneurial top management style (Covin & Slevin, 1988), and corporate entrepreneurship intensity (Barringer & Bluedorn, 1999). Although these terminological differences exist, the measurement of entrepreneurial orientation and these other constructs have all been based upon a scale originally developed by Miller and Friesen (1982) with slight modifications later (e.g., Covin & Slevin, 1989).<sup>6</sup>

Similar to goal orientation, entrepreneurial orientation is a multi-dimensional construct. From a theoretical perspective, Lumpkin and Dess (1996) assert a five-dimensional conceptualization of entrepreneurial orientation: autonomy, competitive aggressiveness, innovativeness, proactiveness, and risk-taking. Each dimension captures specific attributes that characterize entrepreneurship. The following section elaborates on each dimension, conceptualizing entrepreneurial orientation essentially as capturing a set of attributes characterizing strategic actions that allow firms to adapt.

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<sup>6</sup> No review or other piece of research has addressed the terminological inconsistency of what is now commonly referred to as "entrepreneurial orientation." In my opinion, there are two likely causes to the terminological inconsistency. First, authors that have used the "entrepreneurial orientation" scale may have wrestled with what the scale really captures. Second, authors may have succumbed to reviewer pressures regarding the proper terms that "should" be used to capture the entrepreneurial orientation scale. In a personal correspondence with Jeff Covin, he acknowledged that much of the terminological inconsistency in his own "entrepreneurial orientation" research was driven by the reviewers. For the most part, though, Lumpkin and Dess's (1996) entrepreneurial orientation article published in the *Academy of Management Review* seems to have legitimized the use of the term "entrepreneurial orientation," and scholars have since used this term with limited exception.

### *Conceptualization of Entrepreneurial Orientation*

Entrepreneurship is a process driven by individuals. Individuals recognize opportunities and exploit these opportunities by gathering, bundling, and leveraging resources (Sirmon, Hitt, & Ireland, 2007). One can characterize entrepreneurship as a process of adaptation. Considering entrepreneurship as an adaptation process within firms, individual decision makers face novel situations of building new customer/supplier relationships, managing resources in new ways and forming new routines, and establishing new market relationships, among other forms of novelty. Individual decision makers adapt as they experientially learn and adjust to their novel situations when using the entrepreneurship process (Cope, 2005; Minnitti & Bygrave, 2001). The “autonomy” dimension of entrepreneurial orientation captures the independent actions of individuals (within firms) in recognizing and exploiting opportunities (Lumpkin & Dess, 1996; 2001).

One source of novelty that firms face is the continuously changing landscape created by competitors’ actions. Entrepreneurship may be used to respond to competitors. For example, entrepreneurship allows a firm to exploit new opportunities to more efficiently satisfy existing market niches or create wholly new market niches, thereby allowing the firm to outcompete rivals (Lumpkin & Dess, 1996). In other words, firms that aggressively respond to competition often utilize entrepreneurial means to identify and exploit opportunities as process and product innovations, among other firm enhancements. Process innovations can allow the firm to more efficiently exploit existing opportunities, whereas product innovations can more effectively satisfy a market need or create new needs/wants. Theoretically, the “competitive aggressiveness” dimension captures the extent to which a firm uses entrepreneurship to respond to competitors

(Lumpkin & Dess, 2001). In other words, competitive aggressiveness represents an adjustment made in response to the novelty created by competitors' actions.

Firms also face novel situations created by shifts in the external environment regardless of competitors' actions. Proactiveness refers to a firm's willingness to take action (i.e., to make adjustments) to resolve future needs and problems (Lumpkin & Dess, 1996). Whereas the competitive aggressiveness dimension refers to processes aimed at responding to competitors' actions, proactiveness captures processes that are innovative (or lead to innovative outcomes) regardless of competitors' actions. As with the competitive aggressiveness dimension, innovation is again the key outcome of proactive processes. However, proactiveness captures characteristics of strategic actions that allow the firm to identify and exploit opportunities, such as a willingness to be a first mover and an emphasis on technological leadership.

The dimension of entrepreneurial orientation that is most commonly used to refer to entrepreneurial firms, and as previously discussed with the competitive aggressiveness and proactiveness, is innovation. Innovation refers to the actual creation of newness, whether as manifested in new processes, products, or administrative schemas, to realize an opportunity (Damanpour, 1991). Innovation is the essence of entrepreneurship (Drucker, 1993). As a process, entrepreneurship occurs as individuals recognize opportunities, create tangible innovations to fit their perceptions of how the opportunities can be satisfied, and then exploit the innovations to create value. Innovativeness represents a firm's willingness to support the key factors of entrepreneurship, including new ideas, products, processes, creativity, and experimentation (Lumpkin & Dess, 1996). In other words, the "innovativeness" dimension captures factors that allow firms to make adjustments.

Risk-taking refers to the firm's willingness to make resource investments when there is a significant probability for loss (Lumpkin & Dess, 1996). Entrepreneurship is a process for which the outcomes are uncertain (McMullen & Shepherd, 2006). Uncertainty exists because of the inability to predict or to establish a probability scheme for market demand, potential technological, sociocultural, or other external environmental changes, and competitor actions. Within a context of uncertainty, individual decision makers (within firms) take action to exploit opportunities with innovations that are *perceived by them* as efficiently and effectively satisfying a market imperfection. However, failure in how firms adjust may be due to a number of reasons, including firms' decision makers ineffectively predicting (or failing to anticipate) how sources of uncertainty will manifest or the ineffective leveraging of resources in exploiting the opportunity. The uncertainty in the outcomes presents great financial, career, social, and reputational risks to decision makers and their firms. The risk-taking dimension of entrepreneurial orientation captures the extent to which the firm's processes involve and/or ignore risks.

Empirically, scholars have largely advanced a three-dimensional construct of entrepreneurial orientation composed of innovativeness, proactiveness, and risk-taking.<sup>7</sup> Each dimension of entrepreneurial orientation in the three-dimensional construct is conceptually the same as its corresponding dimension in the five-dimensional construct. Scholars using the entrepreneurial orientation scale have not specified why they have only examined the three dimensions. The use of this scale versus a comprehensive five-dimensional scale is perhaps due to the availability of a pre-existing, concise, validated scale.

A debate also exists concerning whether entrepreneurial orientation should be examined as a one-dimensional construct (consisting of innovativeness, proactiveness, and risk-taking

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<sup>7</sup> In a few early studies, Covin and Slevin (1988; 1989) refer to a "competitive aggressiveness" dimension while using the same measures others have since used to tap "proactiveness" (e.g., Covin, Green, & Slevin, 2006; Lumpkin & Dess, 2001).

dimensions) or three-dimensional construct (Covin et al., 2006). Proponents of the one-dimensional construct view assert that a process is not entrepreneurial until it is characterized as high on each dimension. A confirmatory factor analysis based on 1,067 firms in six countries supported modeling entrepreneurial orientation as a three-dimensional construct composed of innovativeness, proactiveness, and risk-taking dimensions (Kreiser, Marino, & Weaver, 2002). In contrast, the three-dimensional view is supported by arguments that each of these dimensions individually represents a facet of entrepreneurship. Herein, I intend to examine entrepreneurial orientation as a three-dimensional construct in the primary analysis. I will also examine entrepreneurial orientation as a one-dimensional construct in a post-hoc analysis.

#### *Entrepreneurial Orientation and Performance*

A key question among scholars is whether acting entrepreneurially increases a firm's performance. On the one hand, entrepreneurship can allow a firm to gain early-mover advantages, stay ahead of competitors, and established process-based efficiencies, among other benefits (Wiklund, 1999; Zahra & Covin, 1995). On the other hand, arguments have been made such that the change created through entrepreneurship can disrupt efficient routines, intra- and interfirm relationships, market-based relationships, and other sources of efficiency and effectiveness, thereby decreasing firm performance (Hannan & Freeman, 1989).

Scholars have used entrepreneurial orientation as a key construct in determining whether acting entrepreneurially increases firm performance (Covin & Slevin, 1989; Wiklund, 1999). In general, empirical evidence points to a positive relationship between entrepreneurial orientation and firm performance (Wiklund, 1999). Research seems to suggest, however, that the performance implications of entrepreneurial orientation depend on various firm and contextual factors (e.g., Covin & Slevin, 1988, 1989; Wiklund & Shepherd, 2003b). For example, Covin

and Slevin (1989) show the influence of industry context on the value of an entrepreneurial orientation to a firm. Using a sample of 161 small manufacturing firms, the authors found that an entrepreneurial orientation was positively related to firm performance in hostile (i.e., highly competitive) environments but negatively related to firm performance in benign environments. Covin and Slevin (1989) reason that while an entrepreneurial orientation allows firms to stay ahead of competitors in hostile environments, the high resource consumption required by an entrepreneurial orientation may be an unnecessary risk and cost for firms in benign environments.

Scholars have also examined how internal firm characteristics, such as structure and complementary resources, can moderate the relationship between entrepreneurial orientation and firm performance. In a second study, Covin and Slevin (1988) examined whether organizational structure influenced the relationship between entrepreneurial orientation and firm performance in a diverse sample of 80 firms that was approximately split between service and manufacturing firms across 40 industries. The authors asserted that an organization's structure was a key determinant of whether entrepreneurial orientation led to value creation because organizations require the flexibility to be innovative, take risks, and be proactive. In other words, firms characterized by organic structures (i.e., loose, informal controls, the ability to disregard formal controls without negative consequences, and the ability for individuals to take action without firm approval) were expected to facilitate entrepreneurial orientation. Firms that try to implement an entrepreneurial orientation while using a mechanistic structure were expected to experience a lack of fit, manifesting in inefficiencies caused by investments in opportunities that are slow to come to fruition. The researchers found that the positive relationship between entrepreneurial orientation and firm performance strengthened for firms with organic (versus mechanistic)



structures. Moreover, when splitting their sample into four groups based on a combination of high/low entrepreneurial orientations and organic/mechanistic structures, the authors found that firms characterized by a high entrepreneurial orientation and an organic structure or a low entrepreneurial orientation and mechanistic structure experienced higher performance than the other two groups lacking entrepreneurial orientation/structure fit.

Wiklund and Shepherd (2003b) suggested that knowledge-based resources complement an entrepreneurial orientation. Focusing on market and technology knowledge-based resources, the authors asserted that firms must first be able to effectively explore to identify valuable opportunities before leveraging them with an entrepreneurial orientation. Wiklund and Shepherd's (2003b) research first shows that while knowledge-based resources and entrepreneurial orientation each have direct and positive relationships with firm performance, the interaction of knowledge-based resources and entrepreneurial orientation is also positively related to firm performance. Their findings suggest that an entrepreneurial orientation does, in fact, complement knowledge-based resources.

Finally, the question remains of whether entrepreneurial orientation provides a short-term boost to firm performance or has lasting positive implications for firms. Advocates of the short-term perspective might suggest that entrepreneurial orientation can only provide a short-term benefit because attempting to use an entrepreneurial orientation over extended periods will eventually lead to too much change for a firm and no real source of efficiency. In contrast, those supporting a long-term perspective may point to the firm's ability to consistently stay ahead of competitors, thereby maintaining a stream of first-mover advantages. Using a sample of 132 small Swedish firms over a three-year period, Wiklund (1999) found that the positive effects of entrepreneurial orientation on firm performance are sustained over extended periods, providing

at least some evidence to suggest that firms adopting an entrepreneurial orientation can stay ahead of competitors over the long term.

Having conceptualized goal orientation and entrepreneurial orientation, I now move to develop the hypotheses in my proposed model. I first develop the hypotheses between each dimension of goal orientation and each dimension of entrepreneurial orientation. Following this, I develop the hypotheses between each dimension of entrepreneurial orientation and performance.

## HYPOTHESES

Individuals' goal orientations influence how they interpret, understand, and respond to achievement situations (Breland & Donovan, 2005; Dweck & Leggett, 1988; VandeWalle, Brown, Cron, & Slocum, 1999). Questions remain regarding whether decision-makers' goal orientations influence how they interpret and respond to their particular contexts, and more specifically, whether the decision-makers' responses manifest in characteristics of firm strategic actions. Upper echelons perspective suggests that, in general, decision-makers' personal attributes do influence their decisions and ultimately actions taken by the firm (Hambrick & Mason, 1984). Using the upper echelons perspective as a foundation, I hypothesize relationships between each of the goal orientation dimensions and each of the entrepreneurial orientation dimensions.

While most of the evidence cited in support of the hypotheses derives from research conducted with student or lower-level employee participants, one might suggest that the relationships between an individual's goal orientation and the use of particular adaptive/maladaptive strategic actions will be enhanced in the upper echelons of the firm. Situational components, such as externally set goals, are less relevant to the goal orientation of key decision makers (c.f., Ames & Archer, 1988; Kohli, Shervani, & Challagalla, 1998). In fact, the key decision maker is likely responsible for establishing firm goals, and one might suggest that the decision-maker's goal orientation cascades throughout the firm and serves to inform the firm's goals (e.g., Dragoni, 2005; Hambrick & Mason, 1984).

Firms' key decision makers face challenging and uncertain decision contexts. Opportunities and threats can arise in various segments of the firm's external environments, including changes in sociocultural, technological, and economic segments of its general

environments, changes in supplier and buyer relationships, new entrants, and product substitutes in its industry environments, and changes in the competitive landscape (Hitt, Ireland, & Hoskisson, 2009). As such, the fit between the demands of the external environment and the firm's competencies can quickly decrease. Evidence suggests that decision makers possessing learning goal orientations will adjust their firms' strategic actions more effectively to re-align their firms with their environments.

Individuals with learning goal orientations take a more adaptive response pattern to achievement situations (Dweck, 1986).<sup>8</sup> Faced with challenging and uncertain tasks, learning-goal-oriented individuals become intricately involved in mastering their tasks. A learning goal orientation leads individuals to persist in their efforts and seek feedback from external sources (VandeWalle & Cummings, 1997). Feedback serves as a valuable source of external knowledge and ideas which may allow individuals to more effectively and efficiently meet the demands of their achievement situation. Moreover, a learning goal orientation increases individuals' propensity to use learning strategies during their tasks (Ford et al., 1998). In doing so, individuals identify new sources of efficiency/effectiveness that they can use to adjust to their tasks' demands. In other words, learning-goal-oriented individuals incorporate new and external ideas and experiment with resources at hand in order to make adjustments to re-align with their external environments. Rather than avoid the challenges of their tasks, learning-goal-oriented individuals utilize innovative-type processes to master their tasks and adjust to their environments.

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<sup>8</sup> To establish each hypothesis, I first discuss goal orientation research for individuals in general – not necessarily a firm's top decision makers. Once I have discussed the relationship between one's type of goal orientation and adaptation-related behaviors, I then extend this discussion to the firm's top decision-making context to discuss my expectations for how the decision-maker's goal orientation will be reflected in the firm's posture.

A firm's key decision maker determines how to adjust their firms to external demands by interpreting signals from their internal and external environments and then formulating and implementing strategic actions to respond to various opportunities and threats. Learning-goal-oriented decision makers are likely to be motivated to master their situations in the sense that they feel (1) they possess a working knowledge of the firm's internal and external environments, and (2) they can competently lead the firm in making adjustments to their situations. In order to attain this mastery, the decision-maker's learning goal orientation becomes reflected in a firm-level posture that supports knowledge transfer to the decision maker and the ability for the decision maker to make firm-level adjustments as needed. More specifically, the decision maker characterized by a learning goal orientation likely favors knowledge absorption (i.e., feedback) from external sources, such as partnering firms, customers, suppliers, employees, etc. This feedback provides diagnostic information that allows the decision maker to monitor changes in the firm's internal and external environments. Moreover, individual decision makers are likely to use this absorbed knowledge to support firm actions to (1) generate new ideas and knowledge internally, (2) creatively develop new products and processes to adjust to their environments' demands, and (3) implement strategic actions that take advantage of real and/or perceived opportunities and threats (i.e., a firm posture of innovativeness). By doing so, individual decision makers use their firms' resources to master their tasks, in terms of both interpretation and response, as their respective firm's primary decision maker. Therefore, I hypothesize:

*Hypothesis 1a: A decision-maker's learning goal orientation is positively related to firm-level innovativeness.*

Individuals with a performance goal orientation are considered to have a maladaptive response pattern in achievement situations (Dweck, 1986). More specifically, performance-goal-oriented individuals try to prove their competence in achievement situations by performing the

task as quickly and with as little effort as possible. In doing so, these individuals only gain a peripheral understanding of the demands of their environment and do not adapt effectively (Ford et al., 1998). Moreover, individuals with performance goal orientations take more of an image-based approach to seeking feedback, as opposed to a learning-based approach. Performance-goal-oriented individuals tend to avoid feedback when the feedback may be negative (although constructive), seek feedback from legitimate figures with less consideration of relevant expertise, and prefer personal monitoring as opposed to external sources of feedback (VandeWalle, 2003). Therefore, these individuals shun potential sources of knowledge that may allow them to adjust to the demands of their environment.

Scholars have distinguished between two dimensions of performance goal orientation (e.g., VandeWalle, 1997). A performance prove goal orientation manifests in individuals as the motivation to prove one's competencies to others, whereas a performance avoid goal orientation manifests as the motivation to avoid negative feedback (VandeWalle, 1997). The maladaptive response pattern associated with performance goal orientation is generally attributed more strongly and consistently to the 'avoid' dimension (Payne et al., 2007). In fact, some evidence suggests that individuals possessing a performance prove goal orientation will maintain efforts as long as these efforts result in positive performance outcomes (Bell & Kozlowski, 2002; Porter, 2005). When performance declines, these individuals experience lower self-efficacy and decrease effort in the tasks. In contrast, individuals possessing performance avoid goal orientations avoid challenges altogether in order to prevent the potential for negative feedback.

A decision-maker's performance prove goal orientation is likely to be reflected in a firm-level posture that "proves" the decision-maker's competence in leading his/her firm, whereas a decision-maker's performance avoid goal orientation is likely to be reflected in firm-level

posture that seeks to avoid failure and loss. In terms of an innovative firm posture, superior market performance derives from the development of innovative products and processes that make firms can leverage for efficiency and/or effectiveness. Research shows that "... on average, about 32% of firm sales and 31% of firm profits come from products that have been commercialized in the last five years," although some firms may reap nearly 50% of sales and profits from products introduced in the same timeframe (Hauser, Tellis, & Griffin, 2005). However, innovation is also a process marred by high failure rates (Hauser et al., 2005). As such, in order to avoid firm failure, which may be considered a reflection of poor leadership, a key decision maker possessing a performance avoid goal orientation is likely to avoid supporting an innovative firm posture. In contrast, a decision maker possessing a performance prove goal orientation can be expected to support innovativeness in order to prove his/her competence as a visionary leader, although he/she may discontinue certain aspects of ventures early when the firm experiences failures. Therefore, I hypothesize:

*Hypothesis 2a: A decision-maker's performance prove goal orientation is positively related to firm-level innovativeness.*

*Hypothesis 3a: A decision-maker's performance avoid goal orientation is negatively related to firm-level innovativeness.*

In forming decisions, decision makers absorb and interpret various sources of information. Firms' top decision makers often face time constraints in forming their decisions due to the need to stay ahead of competitors/respond in a timely manner to competitors and/or to exploit a surfacing opportunity/neutralize a surfacing threat. Therefore, decision makers make decisions without fully grasping all aspects of contexts. Scholars often consider optimal decisions to balance a level of comprehensiveness with a level of efficiency. Comprehensiveness allows individuals to increase the bounds of their rationality by exhaustively weighing the factors

that influence a decision (Fredrickson, 1984). In doing so, comprehensiveness allows individuals to make informed and accurate decisions. However, comprehensiveness may have negative implications for individuals' decision-making processes. As mentioned previously, changes may occur in many different segments of the external environment. Decision makers cannot possibly incorporate every piece of information available in trying to resolve all sources of uncertainty and still make fast decisions. When environmental demands are quickly changing, comprehensiveness can slow the decision process to the extent to which individuals (and firms) cannot adapt quickly enough to remain effective (Fredrickson & Mitchell, 1984). As such, individuals must balance comprehensiveness and efficiency in making quality decisions.

Evidence seems to suggest that individuals possessing learning goal orientations in general use self-regulation processes that enable a balance of comprehensiveness and efficiency, leading to proactiveness. A high learning orientation will prompt proactiveness as individuals seek to improve their competency (Porath & Bateman, 2006). Because learning-goal-oriented individuals view feedback as useful diagnostic information that can improve task mastery, these individuals are expected to seek feedback more often, prefer positive and/or negative feedback from experts and throughout their activities, and actively inquire others for feedback in addition to their own monitoring activities (VandeWalle, 2003). Learning-goal-oriented individuals are constantly integrating current knowledge and ideas from external sources and monitoring the effectiveness of adjustments that follow. In doing so, these individuals can master their achievement situations more quickly, make more proactive decisions, and implement innovations early relative to competitors (thereby introducing a new challenge that can foster further learning) (Farr et al., 1993; Porath & Bateman, 2006).



Returning to the firm context, key decision makers possessing learning goal orientations can likely be considered motivated to favor a *constant* firm-level integration of various sources of knowledge and ideas. While allowing the learning-goal-oriented decision maker somewhat of an ongoing mastery of their decision-making situation, the constant integration of knowledge also serves to shape a proactive firm-level posture by allowing the decision maker to quickly determine how to make adjustments to changes in their task environments. In support of this assertion, Eisenhardt and Tabrizi (1995) found that firms using self-regulated processes, or processes within the firm to constantly absorb new knowledge (i.e., such as the use of multiple design iterations, numerous project milestones, and the incorporation of real-time information), made faster and more comprehensive decisions. Based on this logic, I hypothesize:

*Hypothesis 1b: A decision-maker's learning goal orientation is positively related to firm-level proactiveness.*

Individuals possessing performance prove goal orientations seek to prove their competency by performing tasks quickly (Dweck, 1986). For these individuals, less regard is given to whether they have mastered their situations in order to make comprehensive decisions. Rather, performance prove goal orientations lead individuals to “jump feet first” into situations to resolve uncertainties and to derive some type of outcome. However, these individuals have less regard for the effectiveness of their decisions, favoring a quick, fast decision over one that is perhaps more comprehensive and leading to better adjustments (but requiring a lengthier period to resolve). In other words, individuals with performance prove goal orientations may favor short-term performance gains while discounting longer-term, perhaps more effective performance gains (Porath & Bateman, 2006). Although firms' decision makers face significant uncertainty, we should expect decision makers with performance prove goal orientations to support proactive postures that allow their firms to be first movers. In doing so, the firm can gain

a distinctive reputation of being a technology leader, which in turn may lead to perceptions of competent leadership. Therefore, I hypothesize:

*Hypothesis 2b: A decision-maker's performance prove goal orientation is positively related to firm-level proactiveness.*

In contrast, performance avoid goal orientations may be expected to lead decision makers to avoid the uncertainty and challenge of trying to develop new innovations and establish markets for these innovations (c.f., VandeWalle, 1997). Instead, because much of the technology and market-based uncertainties are resolved by others (Lieberman & Montgomery, 1998), decision makers characterized by performance avoid goal orientations are likely to pursue imitation-based strategies. Although late movers using imitation-based strategies experience lower returns on average (Lee, Smith, Grimm, & Schomburg, 2000), the potential for firm failure of imitation-based strategies may be expected to be lower than that of proactive, early-mover strategies, thereby avoiding perceptions of complete failure in the firm's leadership. Putting this logic together, decision makers possessing performance avoid goal orientations are likely motivated to avoid potential failures associated with proactive market- and technology-leading solutions. As such, the performance avoid goal orientation is likely to be reflected in a more conservative and reactive orientation. I hypothesize:

*Hypothesis 3b: A decision-maker's performance avoid goal orientation is negatively related to firm-level proactiveness.*

Making adjustments to changes in the external environment that are predicted or that have already occurred involves risk. Risks stem from the inability to accurately predict the effectiveness of one's outcomes due to uncertainty. Firms' decision makers face significant uncertainties associated with the inability to predict market demands, unexpected changes in the technological, sociocultural, and economic segments of the external environment, and

unanticipated actions by competitors that can alter the competitive landscape. To the extent that changes in the external environment differ from the predictions of decision makers, risks may manifest in financial losses (as well as reputational, relational, and other forms of loss).

Some individuals inherently have higher risk-taking propensities that affect their decisions and consequent actions (Stewart & Roth, 2001; 2004). Evidence suggests that individuals possessing learning goal orientations may have higher risk-taking propensities. Learning-goal-oriented individuals seek to master tasks and their specific challenges. In doing so, these individuals often accept short-term performance declines as part of the learning process in mastering tasks (Elliot & McGregor, 1999; Kohli et al., 1998). On the one hand, this might suggest that learning-goal-oriented individuals perceive risks not as potential losses but as potential learning benefits. As such, a learning goal orientation increases one's risk-taking propensity by changing the individual's perceptions of risk. On the other hand, Kohli et al. (1998) speculate that because salespeople with learning goal orientations enjoy challenging tasks, they may prefer to call on more difficult and risky accounts. This speculation points to learning goal orientation as creating more of a motivation to pursue risks, as opposed to changing one's perceptions of risk.

Either way, in discerning how to adjust their firms, decision makers can weigh various options that differ in their associated risks. The risks exist for the firm in the form of financial losses and perhaps failure. A decision maker characterized by a learning goal orientation, however, may interpret risks as challenges and opportunities to learn. In addition, decision makers possessing a learning goal orientation may be expected to support firm postures characterized by higher risk-taking because of inherent motivations for challenging decision-

making tasks and because they perceive these processes as leading to learning and long-term benefits as opposed to financial losses. As such, I hypothesize:

*Hypothesis 1c: A decision-maker's learning goal orientation is positively related to firm-level risk-taking.*

Individuals with performance prove goal orientations desire to prove their competency with as little effort as possible (Dweck, 1986). By exerting little effort to complete tasks, it is impossible for individuals with performance prove goal orientations to fully understand the relevant risks of their decisions (i.e., what are all the potential outcomes if the adjustments made do not lead to their desired results). As such, decision makers are likely to support risk-taking firm postures because the decision makers do not fully perceive the risks associated with these postures.

However, despite the predominant focus by scholars on single firm actions, firm processes often occur with a series or sequence of investments (Adner & Levinthal, 2004; Myers, 1977). When firms recognize new opportunities, they build their presence through numerous, incremental investments as sources of uncertainty wane. While decision makers characterized by performance prove goal orientations may proactively and boldly lead their firms to explore and exploit new opportunities (i.e., because of low risk perceptions due to a lack of knowledge), early failures are likely to produce lower perceptions of the firm's capabilities to effectively exploit these opportunities and decisions to withdraw resources from these activities (c.f., Gong & Fan, 2006). In other words, performance-prove-goal-oriented decision makers withdraw from challenges and risky situations and favor increasingly *conservative* firm postures over time. As such, I hypothesize:

*Hypothesis 2c: A decision-maker's performance prove goal orientation is negatively related to firm-level risk-taking.*

Individuals with performance avoid goal orientations have an intrinsic motivation to avoid the potential for negative feedback and/or failure. To the performance avoid goal-oriented individual, negative feedback and failure are caused by a lack of one's competency to successfully complete a task. As such, these individuals are motivated to avoid others' perceptions of their incompetency in completing tasks, whether or not the cause of negative feedback or failure was actually the individual or uncontrollable factors in the external environment.

A certain level of risk taking underlies any firm decision. In other words, the potential for project failures and negative performance implications (i.e., risks) exist for firms at any point in time due to the uncertainty of the decision-making context and the inability to absorb and interpret all sources of information in during the decision-making process. However, decision makers can reduce risks through the decisions they make regarding their firm's posture. Conservative orientations that rely on imitation-based strategies, a focus on internal strengths and weaknesses, and avoiding bold actions to exploit opportunities or to neutralize threats that surface in the external environment are all firm posture-related decisions that serve to reduce risks. Conservative orientations allow decision makers to let other decision makers (and their respective firms) absorb risks and define the path of greater certainty, to fall back on existing competencies, and to minimize the magnitude of losses if failure should occur.

Because poor firm performance can be perceived as a reflection of incompetent firm leadership, firms' decision makers who possess performance avoid goal orientations are motivated to favor firm postures characterized by less risk taking. In line with this reasoning, I hypothesize:

*Hypothesis 3c: A decision-maker's performance avoid goal orientation is negatively related to firm-level risk-taking.*

Having established the hypothesized relationships between the dimensions of goal orientation and those of entrepreneurial orientation, I now turn to the second half of the model to discuss the hypothesized relationships for each dimension of entrepreneurial orientation on firm performance. Innovativeness represents a firm's willingness to support the key factors of entrepreneurship, including new ideas, products, processes, creativity, and experimentation (Lumpkin & Dess, 1996). In other words, innovativeness characterizes firms that are willing to make investments in knowledge and resources in order to develop new products and processes that can serve as future sources of competitive advantage. Whereas conservative firms focus their efforts on refining existing routines and maintaining efficiency, entrepreneurial firms use innovation to develop new routines and wholly new sources of efficiency. Relative to conservative firms, entrepreneurial firms rely to a greater extent on adjustments through the creation of wholly new sources of efficiency and effectiveness, as opposed to incremental refinements of existing routines. Given that many industries are becoming increasingly dynamic and "change is constant in the new economy landscape" (Brown & Eisenhardt, 1998; Hitt et al., 2001: 479), I hypothesize the following relationship:

*Hypothesis 4a: Innovativeness is positively related to firm performance.*

Proactiveness refers to a firm's willingness to take action to resolve future needs and problems (Lumpkin & Dess, 1996). Proactive firms explore and exploit innovations based on predictions of future opportunities and threats in the external environment irrespective of competitors' actions. As such, proactive firms can make adjustments early to re-align themselves before or soon after changes in the external environment occur. Being an early mover allows firms to gain certain advantages, including favorable access to raw materials, the ability to establish market share and a brand name, form distribution channels, and establish market-based

relationships (Lieberman & Montgomery, 1988). While early movers face some disadvantages, such as greater uncertainty, high costs associated with having to establish markets and legitimacy, and large second-mover competitors (Lieberman & Montgomery, 1998), on average early movers gain above-average returns (Lee et al., 2000). Therefore, I hypothesize,

*Hypothesis 4b: Proactiveness is positively related to firm performance.*

Risk-taking refers to the firm's willingness to make resource investments when there is a significant probability for loss (Lumpkin & Dess, 1996). Risk, and some associated level of potential loss, underlies any form of entrepreneurial action for which outcomes are uncertain (McMullen & Shepherd, 2006). In other words, innovation occurs through a risk-taking process by firms. A firm's actions taken to adjust through innovative products and processes may lead to potential losses if conditions in the external environment unexpectedly change and/or if a market never manifests for the firm's product/services. Haphazard investments, in which the level of risks taken is uncontrolled, can create substantial losses that offset any gains provided by successful innovations (Nohria & Gulati, 1996). As such, one might expect an optimum level of risk-taking before firms incur declining marginal or even negative performance.

Given that the measures of the entrepreneurial orientation scale tap decision-makers' perceptions of the extent to which they favor risk-taking in their firm, however, I do not expect such a curvilinear relationship. To knowingly invest haphazardly would reflect irrational decision-making by the firms' top managers. Conversely, I expect that, in general, decision makers perceive themselves taking low to high, yet moderated risks in leading their firms. Therefore, I hypothesize:

*Hypothesis 4c: Risk-taking is positively related to firm performance.*

## METHODS

### *Sample and Sampling Issues*

Strong consideration was given to the source of data needed to test the hypotheses and the overall model. The first consideration was the need to access a sample of firm decision makers willing to provide responses regarding specific psychological traits and attributes of their firms' processes. As noted by Hambrick (2007: 335), there is "great difficulty [in] obtaining conventional psychometric data on top executives (especially those who head major firms) ...". Cycyota and Harrison (2006) conducted a meta-analysis of studies from 1992 to 2003 that used surveys of top executives and found a median but declining response rate of 28%, much lower than response rates of other samples (i.e., employees, managers, students, etc.). While Hambrick suggests that demographic characteristics and other unobtrusive physical indicators can be used as proxies for psychological traits (and may overcome social desirability issues related to surveys), measures of demographic characteristics are coarse grained. Given my intent to examine the psychological trait of goal orientation and firm process characteristics captured in entrepreneurial orientation, I opted for a sample of primarily smaller and privately-held firms in which key decision makers may be more willing to respond given perhaps (1) less demands on their time and (2) fear of public scrutiny to fit socially desirable templates that could influence socially desirable survey responses.

To test the hypotheses, a random sample of 1,990 decision makers was drawn from the Association of Former Students' database at Texas A&M University.<sup>9</sup> The criterion used to identify top decision makers within the database was that the decision-maker's job title includes one of the following categorizations: Chief Executive Officer, President, self-employed, or

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<sup>9</sup> Of the 1,990 surveys that were sent, 65 surveys were returned due to inadequate or outdated mailing addresses. I was contacted by an additional 15 individuals who told me they had retired, the potential respondent was deceased, or for some other reason did not fit the sampling frame.



business owner. Colleagues in the Association of Former Students used the criterion to compile the sample and provided a mailing list for the sample in October 2008.

By opting to sample privately-held firms (i.e., to increase the ability to tap finer-grained individual attributes and firm-level characteristics more than likely not possible in publicly-held firms [Hambrick, 2007]), potential common method variance issues in the form of self-report biases are introduced in that the individual-level traits, firm-level process characteristics, and performance measures must all be captured in a self-report survey rather than through publicly available sources. Bagozzi and Yi (1991) suggest that common method variance issues may be a likely source of systematic measurement error related to item content, social desirability, scale type, response format, level of concept abstractedness, etc. As systematic error, biases introduced by common method variance can inflate or deflate observed relationships, leading to both Type I and Type II statistical errors (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Spector (2006) discusses common method variance issues as more of an “urban legend.” He states, “Perhaps the first piece of evidence that refutes the [common method variance] legend can be easily found in many cross-sectional, self-report studies. If the self-report survey itself is a method that introduces shared bias into the measurement of variables, we should find a baseline level of correlation among all variables. Unless the strength of [common method variance] is so small as to be inconsequential, this baseline should produce significant correlations among all variables reported in such studies, given there is sufficient power to detect them. Yet failure to find significant correlations, even those theoretically expected, is common in published studies that passed a peer-review process that disfavors null results ... Counter to the [common method variance] legend, using a self-report methodology is no guarantee of finding significant results, even with very large samples” (Spector, 2006: 224).

Common method variance issues are admittedly a necessary tradeoff to capturing finer-grained individual attributes and firm-level characteristics. Entering the black box of upper echelons theory by capturing these finer-grained attributes of decision makers and examining their relationship with firm-level outcomes provides a unique study of the essence of upper echelons theory not possible by analyzing data from publicly available sources. Therefore, the potential theoretical contributions of finer-grained measures (1) arguably outweigh the empirical weaknesses of common method variance issues (especially when survey design decisions are taken to minimize the potential for common method variance issues *ex ante* and *post hoc*), and (2) thereby allow an effective complement to existing studies in which scholars have opted to forego levels of theoretical clarity to reduce common method variance issues through the use of coarse-grained demographic measures.

As inferred, extensive actions were taken to reduce the potential bias introduced by common method variance, following steps advised by Podsakoff and Organ (1986). First, a multi-stage, multi-respondent survey design was used (See the “Sampling Procedure and Instrumentation” section that follows for more detail). In using this survey design, I was able to separate the measurement of independent and dependent variables over time and/or by different respondents. This survey design helps to resolve issues associated with single respondents linking independent variables to dependent variables, attempts to respond in socially desirable ways, and other potential sources of common method variance issues.

I also conducted a Harman one-factor test, as further recommended by Podsakoff and Organ (1986), as an *ex post* test to determine whether the data are characterized by common method variance issues. The Harman one-factor test involves running a factor analysis on all the variables of interest. If a single factor emerges or accounts for the majority of variance, then

common method variance is considered to be an issue undermining the quality of the data (Podsakoff & Organ, 1986).<sup>10</sup> A general rule of thumb suggests that if 50% of the variance is explained by a single unrotated factor, then common method variance issues are a concern (although the smaller the percentage of variance explained by the primary factor, the better).

Finally, three other aspects of my research design may reduce the potential for common method variance issues. First, the cross-level nature of my research focus (i.e., individual-level goal orientation and firm-level entrepreneurial orientation) reduces the potential that linkages may be made by respondents in terms of the types of relationships being studied and what may be socially desired responses. Second, the survey instructions clearly specified the voluntary nature of the survey and the need for open and honest answers. While not empirically tested, the lack of an endorsing body or authority figure that highly recommends participation removes any signal of what may be deemed socially desirable. Third, a follow-up phone interview was used to examine test-retest reliability of randomly chosen variables from the survey.

### *Sampling Procedure and Instrumentation*

The survey process began in September 2008 with a pilot study. While each of the scales used in the study has been used and well-validated in previous research, the goal orientation scale was adapted from the student context to the firm decision-making context. Therefore, one aim of the pilot study was to determine whether the items in the adapted goal orientation scale

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<sup>10</sup> Other *ex ante* statistical manipulations have been recommended to control for common method variance issues. Some scholars suggest that one could include social desirability or negative affectivity measures in the survey to see whether these potential sources of self-report biases exist and then to control for them if they do (Spector, 2006). Another manipulation involves the inclusion of an additional variable in the survey that is theoretically predicted to not be correlated with the variables of interest and then to partial out any correlation that is detected (Lindell & Whitney, 2001; Malhotra, Kim, & Patil, 2006). I chose not to consider these options of controlling for common method variance issues for two reasons. First, a pilot study of my survey provided evidence to suggest that the survey was the optimal length and including additional measures, such as those to capture social desirability and negative affectivity, could become overly burdensome for respondents. Second, because of the weaknesses of the statistical manipulations (e.g., every variable of interest likely does not correlate equally with social desirability or negative affectivity) (Spector, 2006), the statistical manipulations introduce their own biases and are imperfect.

remained well understood and applicable to the decision-making context in firms. Other aims of the pilot study were to ascertain the approximate time taken by respondents to complete the survey and whether any questions were deemed inappropriate. The pilot study of 27 decision makers did not identify any material changes to be necessary for the items in my survey.

The actual survey was mailed in late October/early November 2008. The process followed the Dillman (2007) method from this point forward. The survey was preceded by a pre-survey notice explaining the general content of the survey and specifying that the survey would be arriving in the mail during the next 7 to 10 days. The actual survey was mailed 7 to 10 days following the mailing of the pre-survey notice. Two separate surveys were mailed to each potential respondent. A survey was mailed to the individual decision maker identified in the Association of Former Students (heretofore, primary respondent). The primary respondent survey measured the decision-maker's goal orientation and the control variables necessary for testing the relationships between the decision-maker's goal orientation and the firm's entrepreneurial orientation. A second survey was also mailed to the decision maker identified in the Association of Former Students. However, the instructions included with this survey stated that, if possible, the primary respondent should choose a second individual in the firm (heretofore, secondary respondent), who is knowledgeable of the firm's strategy and activities, to respond to this second survey. The secondary respondent survey captured the firm's entrepreneurial orientation and the control variables needed to test the relationship between entrepreneurial orientation and firm performance. Firm performance was captured in a follow-up phone interview with the primary respondent between one to two months following receipt of the primary and secondary respondent surveys. The final sample size is 273 (14.2% response rate)

for the primary respondent survey, 250 for the secondary respondent survey (13.0% response rate), and 213 for the follow-up phone interviews (11.1% response rate).

The following section describes the variables and scales used to capture those variables included in the survey.

### *Variables*

**Independent variables.** The three dimensions of *goal orientation* were tapped using a 13-item scale developed by VandeWalle (1997). The scale was originally developed for the academic domain, so some items required modification to the decision-making context in firms. The original and modified scales are presented in Appendix 1. Five items measure learning goal orientation, four items measure performance prove goal orientation, and four items measure performance avoid goal orientation. Each of the 13 items uses a 7-point Likert-type scale ranging from 1 (strongly agree) to 7 (strongly disagree). The following are the Cronbach alpha values for each dimension: learning (reliability=.89), performance prove (reliability=.85), and performance avoid (reliability=.88).

*Entrepreneurial orientation* was measured using a 9-item scale fully developed by Covin and Slevin (1989). Each of the three dimensions of entrepreneurial orientation (i.e., innovativeness, proactiveness, and risk-taking) was measured with three items. Each item consists of two polar options, with one option tapping a conservative orientation and a second option tapping an entrepreneurial orientation of the firm's processes. Respondents decide on a scale from 1 to 7, with 1 representing a strong tendency of one option and 7 representing a strong tendency towards a second option, whether their firm's processes are characterized more by a conservative or entrepreneurial orientation. I tested both a uni-dimensional and 3-dimensional entrepreneurial orientation construct. Covin and Slevin (1989) tested a uni-dimensional

construct. In a factor analysis, the scholars found all measures to load at a level of at least .5 on a single factor, with an inter-item reliability coefficient of .87. Wiklund and Shepherd (2003b) had a reliability of .75. Kreiser et al. (2002) conducted a confirmatory factor analysis on entrepreneurial orientation measured from 1,067 firms in six countries. The findings of their factor analysis support a 3-factor structure for EO. Cronbach alpha values were above .70 for the EO scale items in all six countries (innovativeness reliability=.62 [deleting the R&D technological leadership item increased reliability to .75]; proactiveness reliability=.71; risk taking reliability=.75) (Kreiser et al., 2002). The entrepreneurial orientation scale is also included in Appendix 1.

**Dependent variables.** *Performance* was measured using various perceptual measures as reported by the primary and secondary respondents. Perceptual measures can introduce various limitations, such as measurement error and common method variance issues (Delaney & Huselid, 1996). However, objective performance measures for privately-held firms and for single businesses within corporations are often not available, and perceptual measures have been found to be positively correlated with objective measures and reliable (i.e., interrater reliability ranges from .84-.87 for the various perceptual measures) (Dess & Robinson, 1984). I chose previously used perceptual measures of performance of *growth*, *relative focal firm-competitor performance*, and *future performance* (e.g., Delaney & Huselid, 1996; Dess & Robinson, 1984).

I chose these perceptual measures for a number of reasons. Perceptual measures of sales and profitability growth offer the advantage of most closely resembling accounting-based measures. However, these measures are often influenced by the firm's industry (Dess & Robinson, 1984) and based upon the aspirations of key decision makers, especially in privately-held firms (Wiklund & Shepherd, 2003a). Therefore, I also opted to use more generic

performance measures that can allow inter-industry comparisons. As such, respondents were asked to compare their firm's performance to the performance of relevant competitors over the last three years for market share, sales growth, and overall performance. Responses were based on a scale that ranges from 1 (top 20%) to 5 (bottom 5%). Perceptual measures of general organizational performance were used, such as how would you compare your firm's performance over the last three years to competing firms based upon overall customer/client satisfaction or ability to retain essential employees.

Finally, whereas the previously mentioned perceptual measures of performance attempt to capture present (and past) performance, I also included various perceptual measures of expected future performance. While perhaps not as concrete as perceptual measures of present and past performance, perceptual measures of future performance more accurately capture the essence of the hypothesized theoretical model. More specifically, the model predicts that specific processes used will lead to some outcome. Because the entrepreneurial orientation scale measures the degree of "entrepreneurial-ness" of existing processes in the firm, ideally the performance outcomes should be measured one to three years in the future. Obvious time constraints of the dissertation process and the difficulty in accessing performance measures in future surveys requires me to adapt the method of measuring performance. Therefore, I have included perceptual measures of their firm's projected future performance.<sup>11</sup> To my knowledge, scholars have not used perceptual measures of future performance. Scholars have previously used Tobin's Q as a measure to estimate future performance based upon the upside potential captured in a firm's stock price (Bharadwaj, Bharadwaj, & Konsynski, 1999; Harney & Tower,

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<sup>11</sup> Perceptual measures of present and past performance may not be wholly inaccurate. As mentioned, goal orientation is considered to be a quasi-trait, implying a fairly high degree of stability. As such, the decision makers' decisions regarding firm processes may be expected to be quite consistent over time, allowing present and past performance measures to reflect accurate measures of performance.

2003). However, I expect many, if not most, of the firms in my sample to be privately held, meaning that Tobin's Q would not be available for most firms in my sample. As such, I have developed four perceptual measures of future performance based on Likert-type scales ranging from 1 (strongly agree) to 7 (strongly disagree) that seek to capture whether the key decision makers feel that their firms are well-positioned to perform well in the near future (i.e., the presence of opportunities, their ability to adjust, their ability to meet earnings targets, and the potential that they may miss earnings expectations).

Appendix 2 provides a complete list of the performance measures that were used in the survey.

**Control variables.** Previous research suggests that a number of variables may influence the types of decisions made regarding firm processes and whether these processes lead to increased performance. As such, a number of variables were used to identify the effects of goal orientation on entrepreneurial orientation and, then subsequently, the effects of entrepreneurial orientation on firm performance.

A number of variables were controlled in the examination of the goal orientation to entrepreneurial orientation relationship. Research suggests that executive tenure and executive age explain inter-firm differences in the types of decisions made regarding firm processes (Carpenter et al., 2004). More specifically, because they are less socialized to firm norms and overarching industry recipes and because they have longer time horizons, less tenured and younger executives, respectively, are expected to make riskier and more innovative decisions regarding firm processes. *Executive tenure* was measured as the executive's tenure with the present firm in number of years. A second measure of tenure (*industry tenure*) was measured as



the number of years of experience in their present firm's industry. *Executive age* was measured as the executive's age in number of years.

As discussed, upper echelons research also suggests that the top management team can influence firm decisions. While I focus on the top decision maker, variables should also be included to control for the top management team's influence. For the same reasons as discussed above for executive age and tenure, I controlled for average *top management team age* and average *top management team tenure*. It is also important to distinguish the CEO's influence relative to the top management team's influence on firm decisions. Therefore, I also controlled for CEO dominance (i.e., CEO influence relative to the top management team). Previously, Haleblan and Finkelstein (1993) used ten different measures to tap CEO dominance, including measures such as those comparing the number of corporate boards held by the CEO versus other top management team members, relative total cash-based compensation, formal titles held by CEO versus other top management team members, and so on. Given that many firms in my sample are expected to be both privately-held and relatively small in size, the CEO dominance measures of Haleblan and Finkelstein (1993) do not appear relevant for my sample. Rather, I measured *CEO dominance* using three measures based on Likert-type scales ranging from 1 (strongly agree) to 7 (strongly disagree): (1) Major decisions are commonly decided upon by the top management team as a whole; (2) There is little discussion among top management team members in making major firm decisions (reverse scored); and (3) The CEO is the final voice on all major decisions (reverse scored).

Research has also shown that founders can have lasting effects on the firms' strategic direction (and actions) even long after the founder has left the firm. As such, I controlled for the extent to which the current CEO has to overcome potential effects of a previous founder. I

measured *Founder* as a dichotomous (0=no; 1=yes) variables capturing whether the firm had a founder prior to the present CEO. In addition, I measured *CEO tenure* as the number of years that the current CEO has served in this position for the firm. A longer CEO tenure may reflect a greater ability for the CEO to shape the firm according to his or her goal orientation.

Finally, I controlled for whether the firm has any form of external influence that can alter the key decision-maker's goal orientation by providing some other desired, legitimate goal. As such, I included two additional control variables. I included the variable *Public* as a dichotomous control variable (1 for public, 0 for private) to capture whether the firm is publicly or privately owned. Public ownership may increase the influence of short-term, market-oriented performance goals that can alter or enhance a decision-maker's goal orientation. Similarly, I also included the control *Stakeholder* as a dichotomous control variable (1 for presence of an influential stakeholder, 0 for no influential stakeholder) because even when firms are privately held, influential stakeholders (i.e, family investors, business angels, venture capital firms, etc.) can affect the overall goals of the firm.

A number of additional and separate variables were also controlled in the analysis of the entrepreneurial orientation to performance relationship. A number of variables have been commonly recognized as explaining differences in firm performance. Theoretical assertions captured in liabilities of newness and adolescence have found that younger and smaller firms face particular challenges associated with limited resource stocks, established routines, and relationships (e.g., Bruderl & Schussler, 1990). Therefore, I controlled for *firm age*, measured as the log of the number of years since founding. Differences in firm performance may also be explained by firm size. Small firms again face particular challenges associated with potential limited resources needed to explore and exploit opportunities; however, large firms face

challenges to overcome inertia of existing routines and power dynamics that may disrupt the firm's ability to explore and exploit opportunities (Cooper, 2001). Therefore, I also controlled for *firm size*, measured as the log of the number of individuals presently employed by the firm.

As noted previously, industry characteristics can explain differences in firm performance. Following others that have examined the effects of entrepreneurial orientation on firm performance (e.g., Covin & Slevin, 1989; Lumpkin & Dess, 2001), I controlled for *environmental dynamism* using a 5-item scale developed by Miller and Friesen (1982) and *environmental hostility* using a 3-item scale developed by Khandwalla (1977). Both scales use 7-point Likert-type scales and have presented strong reliability across numerous studies. As previous research has shown (e.g., Covin & Slevin, 1989), an entrepreneurial orientation has a more positive relationship with firm performance in dynamic and hostile environments where firms need to use innovation to stay ahead of competitors. In contrast, an entrepreneurial orientation in stable and benign environments may lead to inefficiencies and lower performance.

Finally, the firm's ability to efficiently and effectively leverage resources through processes characterized by an entrepreneurial orientation also influences firm performance (Wiklund & Shepherd, 2003b). As such, I controlled for *knowledge-based resources* using an 11-item, 7-point Likert-type scale originally developed by Gupta and Govindarajan (2000). The scale was modified by Wiklund and Shepherd (2003b) but continued to present high reliability (.84).

Specific survey measures for all of the control variables can be found in Appendix 3.

### *Data Analysis*

The hypotheses were tested using a structural equation model. Structural equation modeling incorporates the family of regression techniques but provides the additional advantage

of determining an overall model fit (Kline, 2005). Moreover, structural equation modeling provides the additional advantage of being able to simultaneously test a number of theoretical propositions involving numerous variables and relationships in a complex model (Bentler, 1990). Structural equation modeling also allows a researcher to compare alternative models by examining the models' meaningfulness, parsimony, and ability to fit the data (Aquino, Griffith, Allen, & Hom, 1997). I compared the three-dimensional entrepreneurial orientation model with an alternative one-dimensional entrepreneurial orientation model. In terms of overall fit, I provide different fit indices for the two models. I report the chi-square statistic. Good model fit is achieved with a chi-square statistic that is not statistically significant, suggesting that there is no difference between the proposed model and the data structure. However, scholars have criticized the chi-square statistic in that this statistic is often not statistically significant due to large sample sizes (Smith & McMillan, 2001). Therefore, I also report a number of incremental fit indices, including the comparative fit index (CFI), root-mean-square error of approximation (RMSEA), and standardized root mean residual (SRMR). Close fit of the data is achieved when CFI is greater than .9, RMSEA is less than .05, and SRMR is less than .08 (Smith & McMillan, 2001).

A number of preliminary analyses preceded the hypothesis testing. First, the Harman one-factor test was conducted to test whether common method variance issues were present. As an additional test for the presence of common method variance issues and a test of the stability of the key constructs, I examined the test-retest reliability of a random sample of goal orientation and entrepreneurial orientation items. Next, factor analyses were conducted to ensure the factor structures of goal orientation and entrepreneurial orientation. Upon determining these construct's factor structures, I then conducted the structural equation analyses to test the hypotheses.

## RESULTS

The final sample size is 273 (14.2% response rate) for the primary respondent survey, 250 for the secondary respondent survey (13.0%), and 213 for the follow-up phone interviews (11.1%). While this response rate is approximately half of the median response rate found by Cychota and Harrison (2006) in their meta-analysis of top-executive surveys, one reason for this discrepancy may be the fact that survey design was not controlled for in the meta-analysis, a limitation admitted by the authors. Because my survey design included a request for two respondents and an additional follow-up interview, my survey's response rate likely decreased as a result of the required complexity of its design, given the limited time that top executives have to devote to non-business-related requests.

Table 1 provides the correlations and descriptive statistics for the variables included in this study. Of the individual respondents, 24 were female and 249 were male. The average age of the respondents is 52.2 years old (range of 27 to 84 years old), their average tenure as CEO of their firms is 14.2 years, and their average industry experience is 24.9 years. In terms of their level of education, 4 respondents have less than an undergraduate degree from college, 156 have undergraduate degrees, 57 have Master's degrees, and 13 have doctorates. Of the 273 respondents, 191 are also founders of their firm, and 121 have performance motivations (i.e., profit or growth) versus non-performance motivations (i.e., lifestyle focus or social needs-orientation). The average age of the firms is 27.2 years old, ranging from less than one to 117 years old. The average size of the firms is 91.1 employees, ranging from one to 5,000 employees. Ten of the 273 firms are publicly held, whereas 47 have influential shareholders.

Tables 2 and 3 provide the results of the Harman one-factor tests. Two separate tests were conducted. A first test examined the factor structure of just goal orientation and entrepreneurial

**TABLE 1**  
**Correlations and Descriptive Statistics**

|                          | Mean  | Standard<br>Deviation | Growth  | Present<br>Performance | Future<br>Performance |
|--------------------------|-------|-----------------------|---------|------------------------|-----------------------|
| Growth                   | 20.88 | 35.69                 |         |                        |                       |
| Present Performance      | 3.83  | .77                   | 0.078   |                        |                       |
| Future Performance       | 5.25  | .83                   | 0.129   | .241**                 |                       |
| Performance Motivation   | .52   | .50                   | -0.048  | 0.126                  | 0.038                 |
| Education                | 1.34  | .61                   | 0.016   | 0.095                  | 0.076                 |
| Firm Experience          | 16.55 | 10.31                 | -.196** | 0.095                  | -0.027                |
| Industry Experience      | 24.92 | 9.98                  | -.152*  | 0.021                  | -0.11                 |
| CEO Experience           | 14.23 | 9.81                  | -.139*  | 0.035                  | -0.048                |
| Decision Maker Age       | 52.15 | 8.90                  | -0.12   | -0.058                 | -0.047                |
| Founder                  | .70   | .46                   | .154*   | -.182**                | 0.009                 |
| Gender                   | .91   | .28                   | -0.052  | -0.063                 | -0.053                |
| Secondary Respondent     | .87   | .34                   | -0.013  | -0.066                 | -0.023                |
| TMT Age                  | 49.37 | 8.65                  | -.148*  | -0.108                 | -0.063                |
| TMT Tenure               | 14.49 | 10.23                 | -.144*  | -0.056                 | -0.013                |
| CEO Dominance            | 4.43  | 1.12                  | -0.024  | -0.017                 | 0.035                 |
| Firm Age                 | 27.16 | 24.02                 | -.205** | .214**                 | 0.013                 |
| Public Ownership         | .04   | .19                   | -0.028  | 0.056                  | -0.067                |
| Influential Shareholder  | .17   | .38                   | .205**  | 0.015                  | 0.027                 |
| Firm Size                | 91.11 | 425.03                | 0.002   | 0.062                  | -0.018                |
| LGO                      | 5.81  | .65                   | 0.131   | 0.118                  | .246**                |
| PPGO                     | 3.75  | 1.21                  | -0.002  | -0.081                 | 0.028                 |
| PAGO                     | 2.82  | 1.07                  | -0.066  | -.136*                 | 0.006                 |
| Innovativeness           | 3.60  | 1.30                  | 0.099   | 0.066                  | .166*                 |
| Proactiveness            | 4.50  | 1.06                  | 0.122   | .215**                 | .272**                |
| Risk taking              | 3.96  | 1.24                  | .134*   | 0.126                  | .161*                 |
| Dynamism                 | 3.44  | 1.09                  | -0.021  | -0.039                 | -0.011                |
| Hostility                | 3.80  | 1.13                  | 0.021   | -.225**                | -0.283**              |
| Market Knowledge         | 4.68  | 1.30                  | 0.077   | .173*                  | 0.063                 |
| Research Knowledge       | 5.42  | 1.09                  | 0.11    | .236**                 | .240**                |
| Administrative Knowledge | 5.67  | .88                   | 0.096   | 0.099                  | .213**                |
| Operational Knowledge    | 5.21  | .99                   | 0.014   | 0.021                  | 0.044                 |

\*\* - Correlation is statistically significant at  $p < 0.01$

\* - Correlation is statistically significant at  $p < 0.05$

TABLE 1, CONTINUED

|                          | Performance<br>Motivation | Education | Firm<br>Experience | Industry<br>Experience | CEO<br>Experience |
|--------------------------|---------------------------|-----------|--------------------|------------------------|-------------------|
| Growth                   |                           |           |                    |                        |                   |
| Present Performance      |                           |           |                    |                        |                   |
| Future Performance       |                           |           |                    |                        |                   |
| Performance Motivation   |                           |           |                    |                        |                   |
| Education                | -0.074                    |           |                    |                        |                   |
| Firm Experience          | 0.036                     | -0.104    |                    |                        |                   |
| Industry Experience      | 0.12                      | -0.027    | .644**             |                        |                   |
| CEO Experience           | -0.014                    | -0.017    | .852**             | .593**                 |                   |
| Decision Maker Age       | 0.122                     | .136*     | .560**             | .671**                 | .570**            |
| Founder                  | -0.107                    | 0.091     | -0.089             | 0.008                  | .215**            |
| Gender                   | 0.076                     | -0.012    | .177**             | .178**                 | .130*             |
| Secondary Respondent     | -0.086                    | 0.01      | 0.016              | 0.096                  | 0.089             |
| TMT Age                  | -0.008                    | .139*     | .369**             | .399**                 | .310**            |
| TMT Tenure               | -0.042                    | -0.083    | .567**             | .388**                 | .516**            |
| CEO Dominance            | 0.035                     | -0.02     | 0.002              | 0.022                  | -0.061            |
| Firm Age                 | 0.075                     | 0.02      | .434**             | .257**                 | .207**            |
| Public Ownership         | 0.067                     | -0.058    | 0.000              | 0.045                  | -0.106            |
| Influential Shareholder  | 0.119                     | -0.014    | -0.091             | -.058                  | -.146*            |
| Firm Size                | 0.106                     | -0.014    | 0.018              | 0.009                  | -.128*            |
| LGO                      | -0.029                    | .135*     | -.232**            | -0.055                 | -.160**           |
| PPGO                     | -0.064                    | 0.092     | -.121*             | 0.002                  | -0.06             |
| PAGO                     | -0.02                     | 0.062     | 0.01               | -0.02                  | -0.004            |
| Innovativeness           | 0.000                     | .135*     | -.125              | -0.12                  | -0.102            |
| Proactiveness            | 0.058                     | 0.099     | -0.065             | -0.064                 | -0.091            |
| Risk taking              | 0.043                     | 0.091     | -0.081             | -0.014                 | 0.003             |
| Dynamism                 | 0.000                     | 0.046     | -0.096             | -0.04                  | -0.094            |
| Hostility                | 0.04                      | -0.021    | -.226**            | -0.093                 | -.239**           |
| Market Knowledge         | .160*                     | -0.037    | 0.091              | 0.000                  | 0.079             |
| Research Knowledge       | 0.031                     | 0.111     | -0.085             | -0.055                 | -0.115            |
| Administrative Knowledge | -0.01                     | 0.012     | -0.046             | 0.034                  | -0.013            |
| Operational Knowledge    | 0.083                     | -0.016    | -0.066             | 0.012                  | -0.078            |

\*\* - Correlation is statistically significant at  $p < 0.01$

\* - Correlation is statistically significant at  $p < 0.05$

TABLE 1, CONTINUED

|                          | Decision<br>Maker Age | Founder  | Gender | Secondary<br>Respondent | TMT Age |
|--------------------------|-----------------------|----------|--------|-------------------------|---------|
| Growth                   |                       |          |        |                         |         |
| Present Performance      |                       |          |        |                         |         |
| Future Performance       |                       |          |        |                         |         |
| Performance Motivation   |                       |          |        |                         |         |
| Education                |                       |          |        |                         |         |
| Firm Experience          |                       |          |        |                         |         |
| Industry Experience      |                       |          |        |                         |         |
| CEO Experience           |                       |          |        |                         |         |
| Decision Maker Age       |                       |          |        |                         |         |
| Founder                  | 0.03                  |          |        |                         |         |
| Gender                   | .180**                | -0.089   |        |                         |         |
| Secondary Respondent     | 0.005                 | .201**   | -0.117 |                         |         |
| TMT Age                  | .597**                | -.129*   | 0.018  | 0.078                   |         |
| TMT Tenure               | .329**                | -.163**  | .157** | 0.034                   | .506**  |
| CEO Dominance            | -0.019                | -0.086   | 0.036  | -0.116                  | -0.048  |
| Firm Age                 | .263**                | -.660**  | .158** | -.153*                  | .225**  |
| Public Ownership         | 0.016                 | -.129*   | 0.061  | 0.011                   | 0.004   |
| Influential Shareholder  | 0.01                  | -0.157** | 0.039  | -.148*                  | -0.025  |
| Firm Size                | -0.044                | -.213**  | 0.051  | -0.092                  | 0.041   |
| LGO                      | -0.028                | 0.081    | -0.09  | -0.041                  | .056    |
| PPGO                     | 0.058                 | 0.054    | -0.102 | 0.095                   | .180**  |
| PAGO                     | 0.003                 | -0.013   | -0.046 | 0.034                   | .164**  |
| Innovativeness           | -0.12                 | 0.097    | -.149* | 0.046                   | -0.121  |
| Proactiveness            | -0.075                | -0.018   | 0.001  | -0.05                   | -0.114  |
| Risk taking              | 0.045                 | .239**   | -0.109 | .136*                   | -0.005  |
| Dynamism                 | 0.053                 | 0.019    | -0.1   | 0.084                   | 0.018   |
| Hostility                | -0.073                | -0.02    | -0.082 | -0.014                  | -0.085  |
| Market Knowledge         | 0.05                  | 0.017    | -0.03  | 0.031                   | 0.012   |
| Research Knowledge       | -.142*                | 0.057    | -0.089 | 0.062                   | -0.062  |
| Administrative Knowledge | 0.015                 | 0.088    | -0.039 | 0.092                   | 0.000   |
| Operational Knowledge    | -0.038                | 0.045    | 0.000  | 0.024                   | -0.09   |

\*\* - Correlation is statistically significant at  $p < 0.01$

\* - Correlation is statistically significant at  $p < 0.05$



TABLE 1, CONTINUED

|                          | TMT Tenure | CEO Dominance | Firm Age | Public Ownership | Influential Shareholder |
|--------------------------|------------|---------------|----------|------------------|-------------------------|
| Growth                   |            |               |          |                  |                         |
| Present Performance      |            |               |          |                  |                         |
| Future Performance       |            |               |          |                  |                         |
| Performance Motivation   |            |               |          |                  |                         |
| Education                |            |               |          |                  |                         |
| Firm Experience          |            |               |          |                  |                         |
| Industry Experience      |            |               |          |                  |                         |
| CEO Experience           |            |               |          |                  |                         |
| Decision Maker Age       |            |               |          |                  |                         |
| Founder                  |            |               |          |                  |                         |
| Gender                   |            |               |          |                  |                         |
| Secondary Respondent     |            |               |          |                  |                         |
| TMT Age                  |            |               |          |                  |                         |
| TMT Tenure               |            |               |          |                  |                         |
| CEO Dominance            | 0.098      |               |          |                  |                         |
| Firm Age                 | .392**     | 0.002         |          |                  |                         |
| Public Ownership         | -0.002     | -0.055        | 0.104    |                  |                         |
| Influential Shareholder  | -0.076     | -0.003        | .148*    | .169**           |                         |
| Firm Size                | -0.006     | 0.028         | .177**   | .438**           | .145*                   |
| LGO                      | -0.089     | -0.03         | -0.113   | -0.008           | 0.021                   |
| PPGO                     | 0.061      | -0.005        | -0.105   | 0.000            | -0.006                  |
| PAGO                     | 0.093      | -0.013        | -0.002   | 0.041            | -0.016                  |
| Innovativeness           | -.140*     | 0.05          | -0.114   | -0.026           | .132*                   |
| Proactiveness            | -0.092     | 0.079         | 0.027    | 0.085            | 0.099                   |
| Risk taking              | -0.046     | -0.07         | -.209**  | -.159*           | -0.004                  |
| Dynamism                 | -0.121     | 0.052         | -0.006   | -0.034           | 0.05                    |
| Hostility                | -.153*     | 0.085         | -0.068   | 0.035            | -0.004                  |
| Market Knowledge         | 0.033      | -0.028        | 0.051    | -0.052           | 0.088                   |
| Research Knowledge       | -0.208     | 0.062         | -.141*   | 0.015            | 0.049                   |
| Administrative Knowledge | 0.033      | -0.02         | -0.022   | 0.047            | 0.07                    |
| Operational Knowledge    | 0.007      | -0.011        | -0.077   | 0.096            | 0.072                   |

\*\* - Correlation is statistically significant at  $p < 0.01$

\* - Correlation is statistically significant at  $p < 0.05$

TABLE 1, CONTINUED

|                          | Firm Size | LGO    | PPGO   | PAGO    | Innovativeness |
|--------------------------|-----------|--------|--------|---------|----------------|
| Growth                   |           |        |        |         |                |
| Present Performance      |           |        |        |         |                |
| Future Performance       |           |        |        |         |                |
| Performance Motivation   |           |        |        |         |                |
| Education                |           |        |        |         |                |
| Firm Experience          |           |        |        |         |                |
| Industry Experience      |           |        |        |         |                |
| CEO Experience           |           |        |        |         |                |
| Decision Maker Age       |           |        |        |         |                |
| Founder                  |           |        |        |         |                |
| Gender                   |           |        |        |         |                |
| Secondary Respondent     |           |        |        |         |                |
| TMT Age                  |           |        |        |         |                |
| TMT Tenure               |           |        |        |         |                |
| CEO Dominance            |           |        |        |         |                |
| Firm Age                 |           |        |        |         |                |
| Public Ownership         |           |        |        |         |                |
| Influential Shareholder  |           |        |        |         |                |
| Firm Size                |           |        |        |         |                |
| LGO                      | -0.05     |        |        |         |                |
| PPGO                     | -.152*    | .213** |        |         |                |
| PAGO                     | -0.065    | -.123* | .436** |         |                |
| Innovativeness           | -0.017    | .289** | 0.043  | -0.095  |                |
| Proactiveness            | 0.078     | .234** | -0.016 | -0.122  | .402**         |
| Risk taking              | -.141     | .322** | -0.012 | -.228** | .419**         |
| Dynamism                 | -0.033    | .165** | 0.095  | 0.033   | .375**         |
| Hostility                | 0.057     | -0.102 | 0.001  | -0.105  | -0.016         |
| Market Knowledge         | 0.108     | .163** | -0.053 | -.225** | 0.072          |
| Research Knowledge       | 0.031     | .295** | 0.059  | -0.034  | .348**         |
| Administrative Knowledge | .128*     | .222** | 0.038  | -0.016  | 0.086          |
| Operational Knowledge    | .165**    | 0.116  | -0.036 | -0.064  | -0.023         |

\*\* - Correlation is statistically significant at  $p < 0.01$

\* - Correlation is statistically significant at  $p < 0.05$

TABLE 1, CONTINUED

|                          | Proactiveness | Risk Taking | Dynamism | Hostility | Market Knowledge |
|--------------------------|---------------|-------------|----------|-----------|------------------|
| Growth                   |               |             |          |           |                  |
| Present Performance      |               |             |          |           |                  |
| Future Performance       |               |             |          |           |                  |
| Performance Motivation   |               |             |          |           |                  |
| Education                |               |             |          |           |                  |
| Firm Experience          |               |             |          |           |                  |
| Industry Experience      |               |             |          |           |                  |
| CEO Experience           |               |             |          |           |                  |
| Decision Maker Age       |               |             |          |           |                  |
| Founder                  |               |             |          |           |                  |
| Gender                   |               |             |          |           |                  |
| Secondary Respondent     |               |             |          |           |                  |
| TMT Age                  |               |             |          |           |                  |
| TMT Tenure               |               |             |          |           |                  |
| CEO Dominance            |               |             |          |           |                  |
| Firm Age                 |               |             |          |           |                  |
| Public Ownership         |               |             |          |           |                  |
| Influential Shareholder  |               |             |          |           |                  |
| Firm Size                |               |             |          |           |                  |
| LGO                      |               |             |          |           |                  |
| PPGO                     |               |             |          |           |                  |
| PAGO                     |               |             |          |           |                  |
| Innovativeness           |               |             |          |           |                  |
| Proactiveness            |               |             |          |           |                  |
| Risk taking              | .373**        |             |          |           |                  |
| Dynamism                 | 0.094         | .231**      |          |           |                  |
| Hostility                | -0.061        | -0.013      | .219**   |           |                  |
| Market Knowledge         | .337**        | .287**      | 0.091    | 0.04      |                  |
| Research Knowledge       | .387**        | .331**      | 0.043    | -.139*    | .229**           |
| Administrative Knowledge | .290**        | .144*       | -0.085   | -.153*    | .420**           |
| Operational Knowledge    | 0.053         | 0.073       | -.151*   | -0.005    | .237**           |

\*\* - Correlation is statistically significant at  $p < 0.01$

\* - Correlation is statistically significant at  $p < 0.05$

TABLE 1, CONTINUED

|                          | Research<br>Knowledge | Administrative<br>Knowledge | Operational<br>Knowledge |
|--------------------------|-----------------------|-----------------------------|--------------------------|
| Growth                   |                       |                             |                          |
| Present Performance      |                       |                             |                          |
| Future Performance       |                       |                             |                          |
| Performance Motivation   |                       |                             |                          |
| Education                |                       |                             |                          |
| Firm Experience          |                       |                             |                          |
| Industry Experience      |                       |                             |                          |
| CEO Experience           |                       |                             |                          |
| Decision Maker Age       |                       |                             |                          |
| Founder                  |                       |                             |                          |
| Gender                   |                       |                             |                          |
| Secondary Respondent     |                       |                             |                          |
| TMT Age                  |                       |                             |                          |
| TMT Tenure               |                       |                             |                          |
| CEO Dominance            |                       |                             |                          |
| Firm Age                 |                       |                             |                          |
| Public Ownership         |                       |                             |                          |
| Influential Shareholder  |                       |                             |                          |
| Firm Size                |                       |                             |                          |
| LGO                      |                       |                             |                          |
| PPGO                     |                       |                             |                          |
| PAGO                     |                       |                             |                          |
| Innovativeness           |                       |                             |                          |
| Proactiveness            |                       |                             |                          |
| Risk taking              |                       |                             |                          |
| Dynamism                 |                       |                             |                          |
| Hostility                |                       |                             |                          |
| Market Knowledge         |                       |                             |                          |
| Research Knowledge       |                       |                             |                          |
| Administrative Knowledge | .324**                |                             |                          |
| Operational Knowledge    | .256**                | .457**                      |                          |

\*\* - Correlation is statistically significant at  $p < 0.01$

\* - Correlation is statistically significant at  $p < 0.05$

orientation. These two constructs are the primary variables of interest for the first half of the model captured in the written portion of the survey. Moreover, common method variance issues are more likely for this part of the model given that a large portion of respondents ignored the request for a secondary respondent.<sup>12</sup> Table 2 summarizes the results of a Harman one-factor test including the goal orientation and entrepreneurial orientation measures. The results provide two pieces of evidence to suggest that common method variance issues are minimal. First, the primary unrotated factor accounts for only 20.4% of the total variance explained, much less than the 50% threshold recommendation. Second, and perhaps more interesting, the unrotated factor analysis suggests a 7-factor solution, much greater than the one-factor solution if common method variance issues existed and nearly consistent with the expected 3-factor solutions for both goal orientation and entrepreneurial orientation. A second Harman one-factor test included all of the variables of interest in the study. Table 3 summarizes the test's results. Again, the results suggest that bias introduced by common method variance issues is minimal. The primary unrotated factor now accounts for only 17.1% of the total variance explained, and the unrotated factor analysis suggests a 10-factor solution.

I next examined the test-retest reliability for a random sample of goal orientation and entrepreneurial orientation measures. A minimum level of .60 is recommended for test-retest reliability (Anastasi, 1998), although other scholars recommend a more stringent level of .75 as reflecting good reliability (Portney & Watkins, 1993). To determine whether my data met this criterion, I asked the primary respondents during the follow-up interviews whether they would be

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<sup>12</sup> I realized before beginning the survey process that not every primary respondent would have a knowledgeable secondary respondent given that many firms are small and have only one primary decision maker. In my sample, 80 firms have only a single top decision maker and no top management team. Of the remaining 193 firms with top management teams, I had 33 cases in which there were different primary and secondary respondents (i.e., approximately 17% of the firms for which having primary and secondary respondents was possible) and 160 cases in which the primary and secondary respondents were the same individual.

willing to participate in a reliability test following the survey of the performance measures. Given their time commitments, some respondents were unable to participate in the reliability test while other respondents were able to participate in only part of the reliability test. I focused on test-retest reliability of the entrepreneurial orientation measures for those respondents that had time to partially participate in this part of the survey process. This focus was chosen for two reasons. First, I wanted to determine the level of consistency between primary and secondary respondents in terms of entrepreneurial orientation. Second, examining test-retest reliability of the entrepreneurial orientation measures allows me to determine a level of stability for firm-level decisions regarding innovativeness, proactiveness, and risk taking. Of the initial respondents, 54.8% agreed to participate in the test-retest reliability of the entrepreneurial orientation measures, which is calculated to be reliability (EO)=.81. The reliability of the entrepreneurial orientation measures suggests consistency between primary and secondary respondents and some level of stability over time. The test-retest reliability results in conjunction with a separation in time of one to two months in measuring these data provide further evidence that common method variance issues are minimal in my survey (Podsakoff & Organ, 1986).<sup>13</sup>

I next examined whether items loaded on the appropriate factors as expected. Therefore, I performed factor analyses for the constructs in my core model, including goal orientation, entrepreneurial orientation, and performance, as well as for constructs that serve as control variables, including CEO dominance, environmental dynamism and environmental hostility, and knowledge-based resources. The rotated factor solutions are provided in Tables 4-9, respectively. For each of the factor analyses, factors were extracted based upon eigenvalues greater than one. I followed the stringent guidelines used by Richard et al. (2004) in evaluating each factor's

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<sup>13</sup> 25.6% of the respondents also agreed to participate in the retest of four randomly chosen goal orientation measures. The test-retest reliability of the goal orientation measures was also at an acceptable level of .765.

**TABLE 2**  
**Harman One-Factor Test – Goal Orientation and Entrepreneurial Orientation Only**

|                  | Component* |       |       |       |       |       |       |
|------------------|------------|-------|-------|-------|-------|-------|-------|
|                  | 1          | 2     | 3     | 4     | 5     | 6     | 7     |
| Innovativeness 1 | .516       | .201  | .122  | .186  | .370  | -.185 | -.260 |
| Innovativeness 2 | .575       | .122  | .424  | .186  | -.379 | -.355 | -.007 |
| Innovativeness 3 | .581       | .222  | .421  | .118  | -.358 | -.305 | -.103 |
| Proactiveness 1  | .465       | -.050 | .340  | .326  | .084  | .600  | -.105 |
| Proactiveness 2  | .625       | .189  | .213  | .375  | .002  | .388  | -.135 |
| Proactiveness 3  | .284       | .033  | .094  | -.052 | -.108 | .269  | .678  |
| Risk taking 1    | .691       | .082  | .220  | -.296 | .283  | -.089 | .049  |
| Risk taking 2    | .713       | .005  | .149  | -.392 | .203  | -.115 | .116  |
| Risk taking 3    | .682       | -.024 | .033  | -.480 | .280  | .006  | .030  |
| LGO 1            | .486       | .239  | -.296 | .188  | -.223 | -.068 | .351  |
| LGO 2            | .251       | .550  | -.269 | -.104 | -.131 | .058  | .241  |
| LGO 3            | .398       | .280  | -.504 | .231  | .076  | -.166 | -.108 |
| LGO 4            | .440       | .090  | -.447 | .127  | .261  | .064  | -.017 |
| LGO 5            | .436       | .181  | -.574 | .256  | .066  | -.039 | -.056 |
| PPGO 1           | -.020      | .713  | -.037 | -.196 | -.270 | .204  | .010  |
| PPGO 2           | -.031      | .720  | -.076 | -.311 | -.095 | .041  | -.215 |
| PPGO 3           | -.171      | .700  | -.024 | -.185 | -.012 | .189  | -.170 |
| PPGO 4           | -.090      | .603  | -.027 | -.131 | -.220 | .050  | -.241 |
| PAGO 1           | -.419      | .537  | .031  | .046  | .283  | -.110 | .157  |
| PAGO 2           | -.344      | .557  | .245  | .273  | .287  | -.021 | .140  |
| PAGO 3           | -.337      | .525  | .174  | .335  | .214  | -.280 | .252  |
| PAGO 4           | -.345      | .378  | .421  | -.037 | .230  | .042  | .036  |

\* Components were extracted based upon having eigenvalues greater than one. The eigenvalues (percentage of variance explained) for each extracted component are as follows: 4.479 (20.4), 3.528 (16.0), 1.833 (8.3), 1.362 (6.2), 1.164 (5.3), 1.073 (4.9), and 1.022 (4.6).

**TABLE 3**  
**Harman One-Factor Test – All Variables of Interest**

|                       | Component* |       |       |       |       |
|-----------------------|------------|-------|-------|-------|-------|
|                       | 1          | 2     | 3     | 4     | 5     |
| Innovativeness 1      | .464       | .239  | -.165 | -.105 | .156  |
| Innovativeness 2      | .600       | .025  | -.294 | -.197 | .406  |
| Innovativeness 3      | .509       | .118  | -.264 | -.347 | .473  |
| Proactiveness 1       | .499       | -.076 | -.108 | .128  | .359  |
| Proactiveness 2       | .667       | .137  | -.239 | .147  | .246  |
| Proactiveness 3       | .253       | -.045 | -.070 | .038  | .180  |
| Risk taking 1         | .641       | -.015 | -.220 | -.313 | .123  |
| Risk taking 2         | .658       | -.059 | -.225 | -.242 | .077  |
| Risk taking 3         | .646       | -.093 | -.090 | -.242 | -.090 |
| LGO 1                 | .467       | .146  | -.261 | -.137 | -.295 |
| LGO 2                 | .260       | .511  | -.179 | -.136 | -.254 |
| LGO 3                 | .507       | .292  | -.143 | .021  | -.420 |
| LGO 4                 | .484       | .001  | .053  | -.044 | -.448 |
| LGO 5                 | .446       | .254  | -.134 | .056  | -.528 |
| PPGO 1                | .075       | .709  | -.127 | -.025 | -.142 |
| PPGO 2                | -.020      | .709  | -.032 | .052  | -.097 |
| PPGO 3                | -.054      | .688  | .000  | .012  | -.083 |
| PPGO 4                | .011       | .598  | .055  | -.105 | .187  |
| PAGO 1                | -.273      | .633  | .143  | .188  | .045  |
| PAGO 2                | -.172      | .627  | .059  | .181  | .213  |
| PAGO 3                | -.128      | .541  | .095  | .343  | .240  |
| PAGO 4                | -.338      | .392  | -.018 | .169  | .369  |
| 3-YR Sales Growth     | .445       | -.016 | .775  | -.114 | .011  |
| 5-YR Sales Growth     | .515       | .091  | .732  | -.137 | .094  |
| 3-YR Profit Growth    | .371       | .053  | .815  | -.011 | .004  |
| 5-YR Profit Growth    | .488       | .109  | .781  | -.067 | .012  |
| Market Share          | .331       | -.224 | -.127 | .548  | .030  |
| Growth                | .436       | -.234 | .172  | .482  | .021  |
| Financial Performance | .147       | -.151 | -.031 | .665  | -.047 |
| Overall Performance   | .356       | -.175 | -.132 | .361  | -.090 |
| Future Performance 1  | .444       | -.073 | -.127 | .334  | .034  |
| Future Performance 2  | .248       | .142  | -.168 | .258  | -.122 |
| Future Performance 3  | .410       | .083  | .039  | .531  | .034  |
| Future Performance 4  | -.200      | -.005 | .006  | -.361 | -.098 |

\* Components were extracted based upon having eigenvalues greater than one. The eigenvalues (percentage of variance explained) for each extracted component are as follows: 5.829 (17.1), 3.834 (11.3), 3.081 (9.1), 2.429 (7.1), 1.832 (5.4), 1.593 (4.7), 1.277 (3.8), 1.176 (3.5), 1.094 (3.2), and 1.018 (3.0).



TABLE 3, CONTINUED

|                       | Component |       |       |       |       |
|-----------------------|-----------|-------|-------|-------|-------|
|                       | 6         | 7     | 8     | 9     | 10    |
| Innovativeness 1      | -.218     | .344  | .301  | .182  | -.058 |
| Innovativeness 2      | -.090     | -.006 | .087  | .027  | -.025 |
| Innovativeness 3      | -.153     | -.043 | .047  | -.047 | -.111 |
| Proactiveness 1       | -.104     | .258  | -.268 | -.428 | .121  |
| Proactiveness 2       | -.093     | .179  | -.215 | -.256 | .123  |
| Proactiveness 3       | .136      | -.306 | -.579 | .335  | .346  |
| Risk taking 1         | .234      | .053  | .138  | .165  | .012  |
| Risk taking 2         | .240      | -.124 | .224  | .194  | -.040 |
| Risk taking 3         | .247      | -.158 | .286  | -.004 | -.090 |
| LGO 1                 | -.140     | .036  | -.361 | .114  | -.099 |
| LGO 2                 | .182      | .156  | -.318 | -.056 | -.400 |
| LGO 3                 | -.142     | .043  | .059  | .207  | .301  |
| LGO 4                 | -.255     | -.022 | .254  | -.087 | .287  |
| LGO 5                 | -.236     | .228  | -.100 | .102  | .148  |
| PPGO 1                | .303      | -.145 | -.152 | -.075 | -.167 |
| PPGO 2                | .377      | -.152 | .165  | -.088 | .030  |
| PPGO 3                | .268      | .073  | .049  | -.223 | .009  |
| PPGO 4                | .103      | -.332 | .005  | -.116 | .283  |
| PAGO 1                | -.121     | -.054 | .133  | .039  | -.137 |
| PAGO 2                | -.136     | .230  | -.053 | .192  | .126  |
| PAGO 3                | -.219     | .152  | .023  | .352  | -.072 |
| PAGO 4                | .030      | .089  | .185  | .060  | .207  |
| 3-YR Sales Growth     | .107      | -.009 | -.055 | .037  | -.030 |
| 5-YR Sales Growth     | .092      | .043  | -.056 | -.097 | -.036 |
| 3-YR Profit Growth    | -.158     | .057  | -.029 | .058  | -.070 |
| 5-YR Profit Growth    | -.032     | -.029 | -.001 | -.109 | .010  |
| Market Share          | .400      | .073  | -.008 | -.148 | .106  |
| Growth                | .347      | .018  | .034  | .265  | .053  |
| Financial Performance | .316      | .164  | .112  | -.006 | .016  |
| Overall Performance   | .055      | .289  | .041  | -.072 | -.263 |
| Future Performance 1  | -.057     | -.392 | .017  | .149  | -.070 |
| Future Performance 2  | -.373     | -.422 | .105  | -.365 | -.004 |
| Future Performance 3  | -.279     | -.183 | .110  | -.089 | -.003 |
| Future Performance 4  | .250      | .330  | .088  | -.164 | .437  |

loading. More specifically, an item's loading on a particular factor had to be (1) at least .40, and (2) .20 greater than its cross loading on any other factor. In terms of goal orientation, a three-factor solution was identified, and each item loaded on the appropriate factor with minimal cross loading present. The rotated factor solution was not as clean for entrepreneurial orientation. The first innovativeness item (whether top managers favored an emphasis on tried and true versus innovative products and services) did not meet the loading or cross loading criteria. One explanation may be that the first innovativeness item captures the extent to which the top managers favor tried and true versus innovativeness overall, whereas the second two innovativeness items reflect actual change in a firm's products and services over the past five years. The third proactiveness item (whether top managers avoid competitive clashes or adopt a very competitive posture) also did not meet the loading or cross loading criteria. Lumpkin and Dess (2001) find evidence to suggest that this item actually captures a degree of competitive aggressiveness (i.e., responsiveness) versus proactiveness. Both items were dropped, and a second rotated factor solution provided a three-factor solution for entrepreneurial orientation, including two items for innovativeness, two items for proactiveness, and three items for risk taking (see Table 5). Next, the various performance measures (i.e., sales and profit growth for the past 3 and 5-year periods, perceptual measures of the firm's present performance relative to the firm's closest competitors for the last 3 years in terms of market share, growth, overall financial performance, and overall general performance, and perceptual measures of the firm's future expected performance in terms of taking advantage of opportunities, avoiding major threats, and meeting targets) were examined. Interestingly, three items were extracted, one each for past growth, present performance relative to competitors, and future performance (see Table 6). Each

**TABLE 4**  
**Factor Analysis for Goal Orientation**

|        | Component* |       |       |
|--------|------------|-------|-------|
|        | 1          | 2     | 3     |
| LGO 1  | .113       | .652  | -.094 |
| LGO 2  | .433       | .516  | .088  |
| LGO 3  | .012       | .739  | .049  |
| LGO 4  | .023       | .558  | -.137 |
| LGO 5  | -.030      | .761  | -.062 |
| PPGO 1 | .749       | .179  | .116  |
| PPGO 2 | .795       | .044  | .117  |
| PPGO 3 | .739       | -.077 | .256  |
| PPGO 4 | .645       | .020  | .174  |
| PAGO 1 | .218       | -.047 | .701  |
| PAGO 2 | .200       | -.045 | .776  |
| PAGO 3 | .089       | .005  | .827  |
| PAGO 4 | .208       | -.376 | .516  |

\* Components were extracted based upon having eigenvalues greater than one. The eigenvalues (percentage of variance explained) for each extracted component are as follows: 3.361 (25.9), 2.510 (19.3), and 1.149 (8.8).

**TABLE 5**  
**Factor Analyses for Entrepreneurial Orientation**

|                  | Component |       |      |
|------------------|-----------|-------|------|
|                  | 1         | 2     | 3    |
| Innovativeness 1 | .352      | .389  | .240 |
| Innovativeness 2 | .154      | .872  | .112 |
| Innovativeness 3 | .170      | .884  | .106 |
| Proactiveness 1  | .071      | .140  | .865 |
| Proactiveness 2  | .132      | .377  | .778 |
| Proactiveness 3  | .268      | -.076 | .382 |
| Risk taking 1    | .772      | .268  | .177 |
| Risk taking 2    | .837      | .231  | .118 |
| Risk taking 3    | .866      | .069  | .131 |

|                  | Component* |      |      |
|------------------|------------|------|------|
|                  | 1          | 2    | 3    |
| Innovativeness 2 | .165       | .892 | .158 |
| Innovativeness 3 | .179       | .887 | .164 |
| Proactiveness 1  | .119       | .063 | .905 |
| Proactiveness 2  | .182       | .290 | .811 |
| Risk taking 1    | .776       | .241 | .173 |
| Risk taking 2    | .856       | .206 | .095 |
| Risk taking 3    | .890       | .025 | .124 |

\* Components were extracted based upon having eigenvalues greater than one. The eigenvalues (percentage of variance explained) for each extracted component are as follows: 3.266 (46.7), 1.295 (18.5), and 1.027 (14.7).

**TABLE 6**  
**Factor Analysis for Performance**

|                       | Component* |       |       |
|-----------------------|------------|-------|-------|
|                       | 1          | 2     | 3     |
| 3YR Sales Growth      | .884       | .096  | -.041 |
| 5YR Sales Growth      | .905       | .013  | .017  |
| 3YR Profit Growth     | .848       | .008  | .081  |
| 5YR Profit Growth     | .912       | -.027 | .107  |
| Present Performance 1 | -.042      | .783  | .096  |
| Present Performance 2 | .280       | .751  | .054  |
| Present Performance 3 | -.094      | .754  | .033  |
| Present Performance 4 | .009       | .560  | .175  |
| Future Performance 1  | .012       | .315  | .577  |
| Future Performance 2  | -.095      | -.073 | .713  |
| Future Performance 3  | .169       | .289  | .674  |
| Future Performance 4  | -.080      | -.026 | -.609 |

\* Components were extracted based upon having eigenvalues greater than one. The eigenvalues (percentage of variance explained) for each extracted component are as follows: 3.438 (28.7), 2.475 (20.6), and 1.360 (11.3).

**TABLE 7**  
**Factor Analysis for CEO Dominance**

|                 | Component* |
|-----------------|------------|
|                 | 1          |
| CEO Dominance 1 | 0.766      |
| CEO Dominance 2 | 0.808      |
| CEO Dominance 3 | 0.528      |

\* The component was extracted based upon having an eigenvalue greater than one. The eigenvalues (percentage of variance explained) for the extracted component was 1.519 (50.6).

**TABLE 8**  
**Factor Analysis for Environmental Dynamism and Environmental Hostility**

|                           | Component* |       |
|---------------------------|------------|-------|
|                           | 1          | 2     |
| Environmental dynamism 1  | .731       | -.040 |
| Environmental dynamism 2  | .747       | .198  |
| Environmental dynamism 3  | .627       | -.077 |
| Environmental dynamism 4  | .600       | .176  |
| Environmental dynamism 5  | .732       | .158  |
| Environmental hostility 1 | .259       | .651  |
| Environmental hostility 2 | .012       | .835  |
| Environmental hostility 3 | -.010      | .805  |

\* Components were extracted based upon having eigenvalues greater than one. The eigenvalues (percentage of variance explained) for each extracted component are as follows: 2.706 (33.8) and 1.617 (20.2).

**TABLE 9**  
**Factor Analysis for Knowledge-Based Resources**

|              | Component* |      |       |       |
|--------------|------------|------|-------|-------|
|              | 1          | 2    | 3     | 4     |
| Knowledge 1  | .085       | .127 | -.070 | .870  |
| Knowledge 2  | .119       | .095 | .330  | .795  |
| Knowledge 4  | .071       | .234 | .833  | .142  |
| Knowledge 7  | .156       | .145 | .883  | .049  |
| Knowledge 3  | .123       | .761 | .064  | .366  |
| Knowledge 5  | .085       | .710 | .368  | -.053 |
| Knowledge 6  | .244       | .776 | .159  | .063  |
| Knowledge 8  | .825       | .119 | .166  | -.019 |
| Knowledge 9  | .865       | .076 | .127  | .151  |
| Knowledge 10 | .674       | .441 | -.058 | .178  |

\* Components were extracted based upon having eigenvalues greater than one. The eigenvalues (percentage of variance explained) for each extracted component are as follows: 3.749 (37.5), 1.386 (13.9), 1.283 (12.8), and 1.006 (10.1).



item satisfied the loading and cross loading criteria. As expected, the three CEO Dominance items loaded on a single factor (see Table 7). Also as expected, the items intended to capture environmental dynamism and environmental hostility loaded on their respective factors while satisfying the cross loading criteria. The two-factor solution is provided in Table 8. Interestingly, the knowledge-based resources did not load onto a single factor as expected. Rather, while satisfying the loading and cross loading criteria, the rotated factor analysis provided evidence for a four-factor solution (See Table 9). Upon further investigation, the analysis seemed to suggest four different types of knowledge-based resources, including administrative, marketing, research, and operational knowledge-based resources.

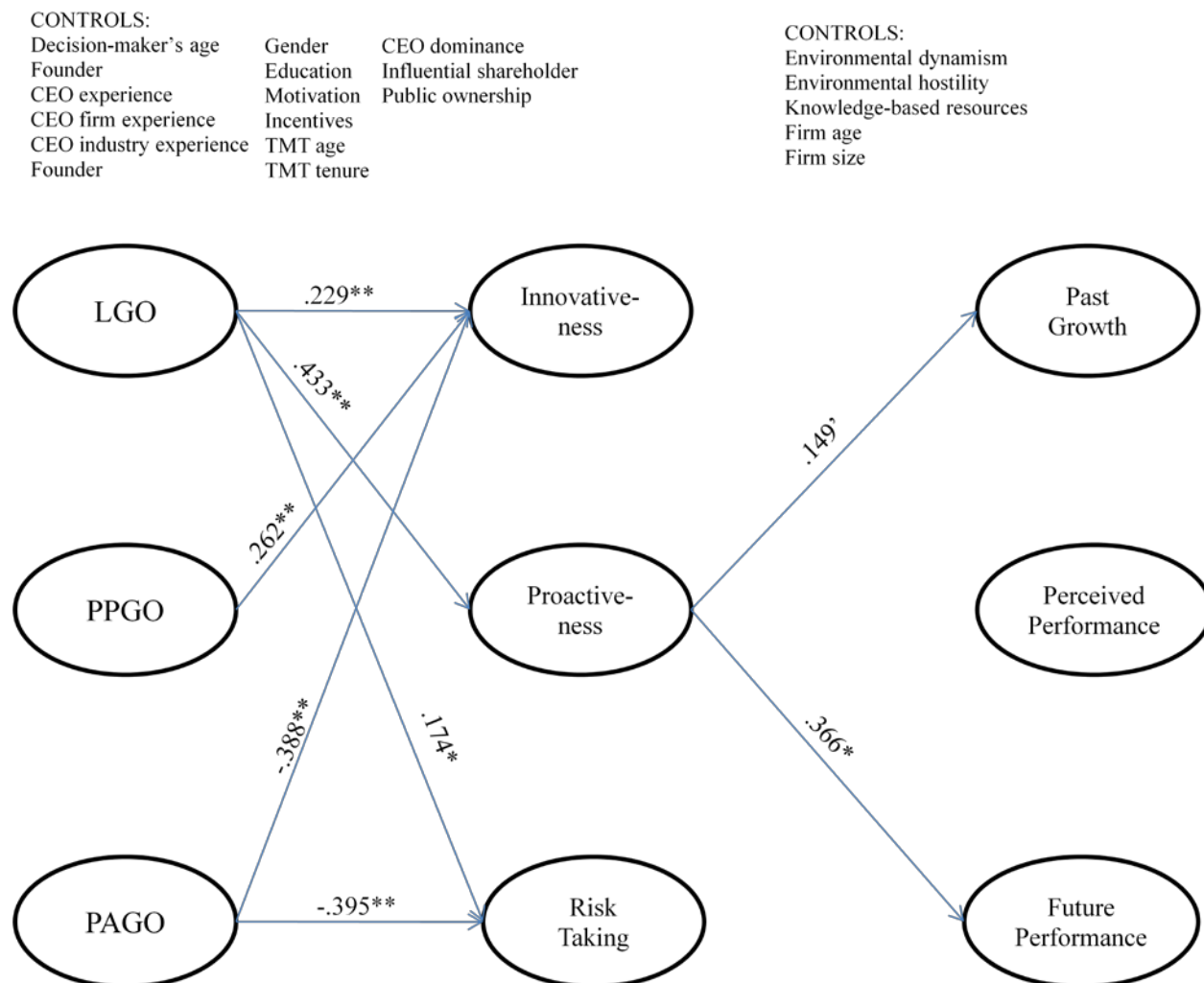
I next evaluated the proposed theoretical model. The estimation of the proposed model presented acceptable fit (chi-squared=2631.4, df=2046,  $p < .01$ ; root-mean-square error of approximation (RMSEA)=.032; comparative fit index(CFI)=.911; standardized root mean residual (SRMR)=.0737). Figure 2 provides the results for the hypothesized relationships of the core model, and Table 10 provides the results for the entire analysis including control variables. The paths from learning goal orientation to innovativeness ( $\beta = .229$ ,  $p < .01$ ), proactiveness ( $\beta = .433$ ,  $p < .01$ ), and risk taking ( $\beta = .174$ ,  $p < .05$ ) are positive and statistically significant, supporting Hypotheses 1a-1c. While the coefficient for the path from performance prove goal orientation to innovativeness is positive and statistically significant ( $\beta = .262$ ,  $p < .01$ ), the paths from performance prove goal orientation to proactiveness ( $\beta = .143$ , *ns*) and risk taking ( $\beta = .131$ , *ns*) were not statistically significant. These results lend support for Hypothesis 2a but fail to support Hypotheses 2b and 2c. As hypothesized in Hypotheses 3a and 3c, the paths from performance avoid goal orientation to innovativeness ( $\beta = -.388$ ,  $p < .01$ ) and risk taking ( $\beta = -.395$ ,  $p < .01$ ) were negative and statistically significant. However, the path from performance avoid

goal orientation to proactiveness was not statistically significant ( $\beta = -.119$ , *ns*). This result provides no support for Hypothesis 3b. Finally, the results for the relationships between each dimension of entrepreneurial orientation and each form of performance were less promising. Only the paths between proactiveness and past performance ( $\beta = .149$ ,  $p < .1$ ) and future performance ( $\beta = .366$ ,  $p < .05$ ) were statistically significant, lending very little support for Hypothesis 4.

The estimation of the alternative one-dimensional entrepreneurial orientation model also provided good fit (chi-squared=2708.2,  $df=2091$ ,  $p < .01$ ; RMSEA=.033; CFI=.907; SRMR=.0721). Figure 3 provides the results for the hypothesized relationships of the core model, and Table 11 provides the results for the entire analysis including control variables. Figure 3 highlights compelling findings. The path from learning goal orientation to entrepreneurial orientation is positive and statistically significant ( $\beta = .425$ ,  $p < .01$ ). Similarly, the path from performance prove goal orientation to entrepreneurial orientation is positive and statistically significant ( $\beta = .276$ ,  $p < .05$ ). The path from performance avoid goal orientation was negative and statistically significant ( $\beta = -.375$ ,  $p < .01$ ). Interestingly, each of the paths from entrepreneurial orientation to performance was positive and statistically significant: from entrepreneurial orientation to past growth ( $\beta = .304$ ,  $p < .01$ ), from entrepreneurial orientation to perceived performance relative to competitors ( $\beta = .211$ ,  $p < .05$ ), and from entrepreneurial orientation to perceived future performance ( $\beta = .574$ ,  $p < .01$ ).

As both the proposed and alternative models fit the data well, an empirical test is needed to determine whether the proposed three-dimensional entrepreneurial orientation model or the parsimonious model (theory) (Hox, 2002). Akaike's Information Criterion (AIC) (Akaike, 1987) is used to compare the fit of non-nested models, as is the case here. A smaller AIC reflects better

**FIGURE 2**  
**Structural Equation Modeling Results for the Proposed Three-Dimensional Entrepreneurial Orientation Model**



Path coefficients are standardized and statistically significant path coefficients are presented by ( $p < .1$ ,  $*p < .05$ ,  $**p < .01$ ). LGO=learning goal orientation, PPGO=performance prove goal orientation, and PAGO=performance avoid goal orientation.

**TABLE 10**  
**Structural Equation Modeling Results for the Proposed Three-Dimensional Entrepreneurial Orientation Model Including Control Variables**

| <b>Variables</b>        | <u>Innovativeness</u> | <u>Proactiveness</u> | <u>Risk Taking</u> |
|-------------------------|-----------------------|----------------------|--------------------|
| CEO Experience          | 0.021                 | -0.105               | 0.321              |
| Firm Experience         | 0.236*                | 0.073                | -0.283             |
| Industry Experience     | -0.09                 | 0.041                | -0.064             |
| Founder                 | 0.046                 | 0.055                | 0.22               |
| Education               | 0.143**               | 0.093'               | -0.02              |
| Motivation              | 0.039                 | -0.018               | 0.05               |
| Gender                  | -0.041                | 0.032                | -0.061             |
| Decision-Maker's Age    | -0.206*               | -0.052               | 0.068              |
| TMT Age                 | 0.003                 | -0.08                | 0.08               |
| TMT Tenure              | -0.117'               | 0.047                | -0.003             |
| CEO Dominance           | 0.03                  | 0.055                | -0.067             |
| Public Ownership        | -0.014                | 0.085                | -0.153**           |
| Influential Shareholder | 0.114*                | 0.024                | -0.001             |
| Incentives              | -0.055                | 0.096                | -0.153*            |
| Learning GO             | 0.229**               | 0.431**              | 0.174*             |
| Performance Prove GO    | 0.262**               | 0.146                | 0.131              |
| Performance Avoid GO    | -0.388**              | -0.124               | -0.395**           |

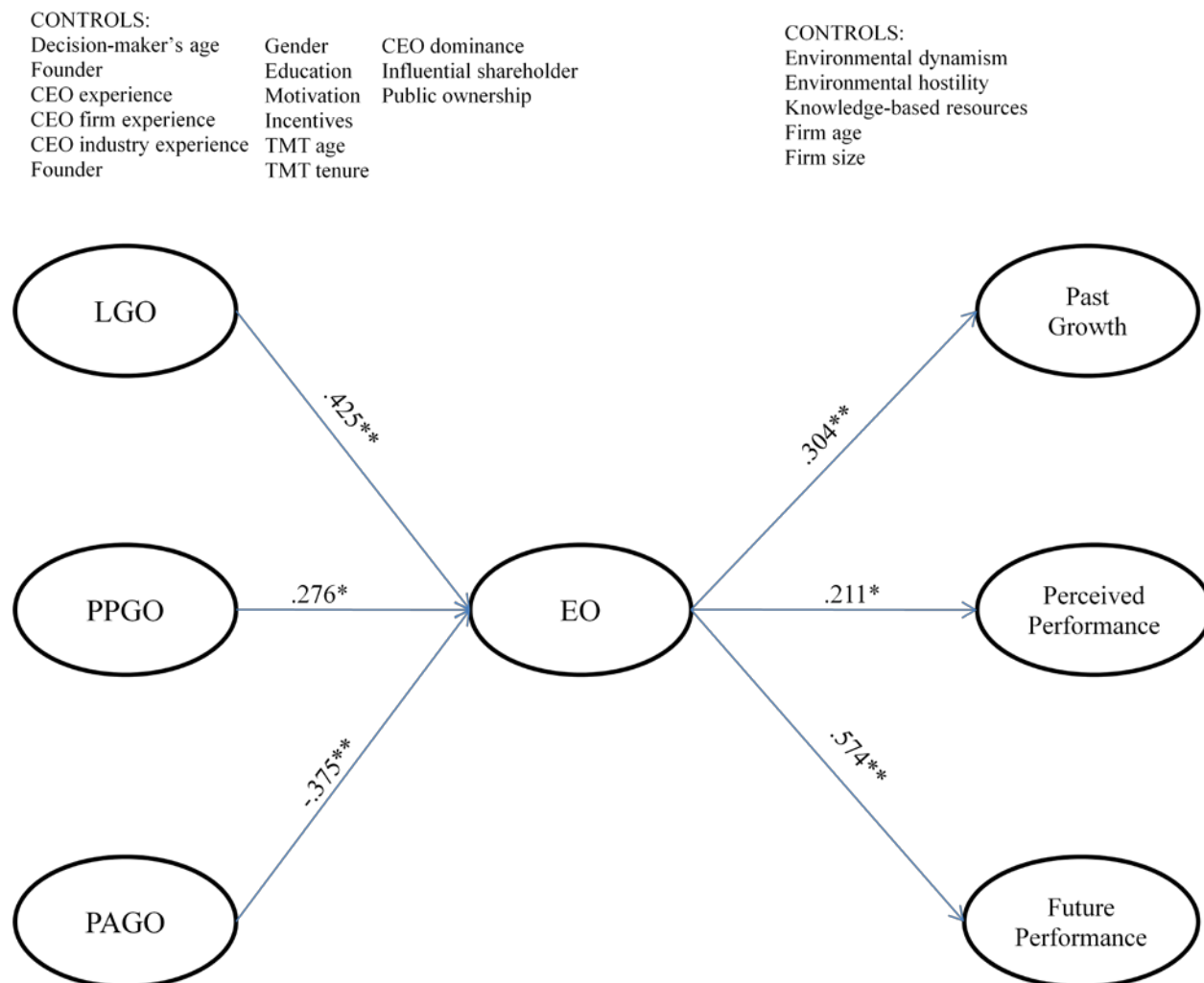
  

|                          | <u>Past Growth</u> | <u>Perceived Performance</u> | <u>Future Performance</u> |
|--------------------------|--------------------|------------------------------|---------------------------|
| Environmental Dynamism   | -0.08              | -0.08                        | -0.126                    |
| Environmental Hostility  | 0.082              | -0.204                       | -0.285*                   |
| Market Knowledge         | -0.019             | 0.257**                      | -0.001                    |
| Research Knowledge       | -0.083             | 0.047                        | -0.315**                  |
| Administrative Knowledge | 0.22*              | -0.105                       | 0.321*                    |
| Operational Knowledge    | -0.132             | 0.015                        | 0.141                     |
| Firm Age                 | -.183**            | 0.205**                      | 0.096                     |
| Firm Size                | -0.018             | 0.028                        | -0.02                     |
| Innovativeness           | 0.033              | 0.142                        | 0.092                     |
| Proactiveness            | .143'              | 0.024                        | 0.363**                   |
| Risk Taking              | 0.06               | 0.052                        | 0.139                     |

' p<.1, \* p<.05, \*\* p<.01

Results are standardized regression weights. Notes for the model: Chi-squared = 2631.4, df=2046, p<.01, CFI=.911, RMSEA=.032, SRMR=.0737.

**FIGURE 3**  
**Structural Equation Modeling Results for the Alternative One-Dimensional Entrepreneurial Orientation Model**



Path coefficients are standardized and statistically significant path coefficients are presented by (\* $p < .05$ , \*\* $p < .01$ ). LGO=learning goal orientation, PPGO=performance prove goal orientation, PAGO=performance avoid goal orientation, and EO=entrepreneurial orientation.

**TABLE 11**  
**Structural Equation Modeling Results for the Alternative One-Dimensional**  
**Entrepreneurial Orientation Model Including Control Variables**

| <b>Variables</b>        | <u>Entrepreneurial</u><br><u>Orientation</u> |
|-------------------------|--|
| CEO Experience          | -.297*                                       |
| Firm Experience         | .422**                                       |
| Industry Experience     | -.164'                                       |
| Founder                 | .225**                                       |
| Education               | .156   |
| Motivation              | 0.045*                                       |
| Gender                  | -0.096                                       |
| Decision-Maker's Age    | -0.09  |
| TMT Age                 | -0.028                                       |
| TMT Tenure              | 0.051  |
| CEO Dominance           | -0.029                                       |
| Public Ownership        | -0.058                                       |
| Influential Shareholder | 0.128'                                       |
| Incentives              | 0.122'                                       |
| Learning GO             | 0.425**                                      |
| Performance Prove GO    | 0.276*                                       |
| Performance Avoid GO    | -0.375**                                     |

|                                | <u>Past Growth</u> | <u>Perceived</u><br><u>Performance</u> | <u>Future Performance</u> |
|--------------------------------|--------------------|--|---------------------------|
| Environmental Dynamism         | -0.101             | -0.074                                 | -0.116                    |
| Environmental Hostility        | 0.084              | -0.193*                                | -0.248*                   |
| Market Knowledge               | -0.042             | 0.214*                                 | -0.014                    |
| Research Knowledge             | -0.092             | 0.146                                  | -0.257*                   |
| Administrative Knowledge       | 0.194'             | -0.134                                 | 0.362*                    |
| Operational Knowledge          | -0.108             | -0.002                                 | -0.014                    |
| Firm Age                       | -0.132*            | 0.219**                                | 0.099                     |
| Firm Size                      | 0.015              | 0.021                                  | 0.017                     |
| Entrepreneurial<br>Orientation | 0.304**            | 0.219*                                 | 0.595**                   |

' p<.1, \* p<.05, \*\* p<.01

Results are standardized regression weights. Notes for the model: Chi-squared = 2708.2, df=2091, p<.01, CFI=.907, RMSEA=.033, SRMR=.0721.

one-dimensional entrepreneurial orientation model fit the data better. A general principle in determining model fit when alternative models fit the data equally well is to choose the more model fit. AIC for the proposed model is 3367.4 versus 3347.6 for the alternative model, suggesting better fit for the alternative one-dimensional entrepreneurial orientation model.

## DISCUSSION

The objective of this study was to determine whether decision-makers' goal orientations shaped their firms' entrepreneurial orientations, which in turn was expected to influence firm performance. This study involved entering the black box of the upper echelons theory to examine whether fine-grained attributes of top decision makers influence firm-level decisions and ultimately firm performance. While demographic-based research has lent strong support for upper echelons theory, questions remain as to whether finer-grained attributes influence firm-level decisions or whether such effects are muddled by the strong situational context at the firm's top decision-making context (i.e., uncertainty, complexity, dynamism, etc.). More specifically, I examined decision-makers' goal orientations as influencing the decision-makers' interpretations and responses (in terms of shaping their firms' entrepreneurial orientations) to various environmental and firm-level signals, thereby ultimately influencing firm performance.

Before discussing the proposed model's core findings, brief mention should be made as to the results for the control variables. Many of the demographic attributes, such as decision-makers' age, education, experience, and similar top management team characteristics, that are commonly studied as influencing firm-level decisions were found to have inconsistent and equivocal findings. For example, decision-maker's age was negatively related to innovativeness. One could logically speculate that older decision makers are more settled into existing routines, less up-to-date on the latest trends, and less motivated to invest great time and effort into leading highly innovative firms. The relationships between decision-makers' age and both proactiveness and risk-taking were not statistically significant. Certainly, one could speculate that as decision makers age, they are less prone to support risk-taking firm postures because such postures increase the likelihood for loss, which could in turn undermine the decision-maker's retirement



security. Similarly, influential shareholders are found to be positively related to innovativeness; however, influential shareholders do not have statistically significant relationships with the other dimensions of entrepreneurial orientation. While one may expect influential shareholders to promote innovativeness because new products and services lead to higher profit margins, one would seemingly also expect influential shareholders to push for proactive and risk-taking postures that leverage the firms' innovations. However, our influential shareholder variable included various types of shareholders, such as business angels, venture capitalists, private equity groups, and partners. The lack of statistically significant findings in terms of the relationship between influential shareholders and proactiveness and risk taking may reflect the fact that different firm postures may be desired by different influential shareholders. Some control variables, such as TMT age and tenure and the decision-maker's CEO and industry experiences, do not have statistically significant relationships with innovativeness, proactiveness, and risk-taking firm postures at all. Focusing only on the control variables capturing demographic characteristics suggests little consistent support for the assertions of upper echelons theory.

The results of the dissertation's core model (i.e., of the proposed three-dimensional entrepreneurial orientation model), however, show strong support for the upper echelons theory-grounded assertions. First, it was argued that learning-goal-oriented decision makers are motivated to master their situations. Because of this motivation, these decision makers persist in the face of challenge and attempt to understand their situations via constant learning and adjustment. Moreover, I expected that this motivation would be reflected in firm-level actions taken to constantly seek and absorb feedback from various sources in the firm's internal and external environment and a willingness to make adjustments to meet the firm's evolving

demands. In support of these assertions, the results show a strong positive relationship between learning goal orientation and both innovativeness and proactiveness (supporting Hypotheses 1a and 1b). A learning goal orientation also motivates individuals to actually seek challenge and to discount losses as necessary to take advantage of opportunities to learn and master their tasks. Results also supported Hypothesis 1c's expectation that decision-makers' learning goal orientation would be reflected in a risk-taking posture in their firms as these decision makers were expected to perceive risks (and potential losses) as necessary to mastering their situations and staying ahead of competitors.

While the results for the relationships between performance prove goal orientation and the various dimensions of entrepreneurial orientation were not as strong as those for learning orientation, the results were not wholly unexpected. Previous goal orientation research has often found only a slightly positive to null relationship between performance prove goal orientation and adaptation-related outcomes (Payne et al., 2007). Interestingly, performance prove goal orientation was positively related to innovativeness, supporting Hypothesis 2a; however, I failed to find empirical support for Hypotheses 2b and 2c which anchored the expectation for positive relationships between performance prove goal orientation and proactiveness and risk-taking, respectively. One plausible explanation for these results may be that decision makers with performance prove goal orientations are constantly comparing themselves to others (i.e., decision makers in other firms), and hence, to a certain extent they are (1) aware of changes in their firm's external environment and (2) willing to make firm-level adjustments necessary to ensure that their firms stay as innovative as their counterparts. However, in general, these decision makers are not necessarily motivated to be proactive or to take significant risks to preserve their image as effective decision makers. In terms of a proactive firm posture, performance-prove-goal-

oriented decision makers may not perceive distinctiveness in being the first to market but rather only in being able to adjust effectively when needed. Similarly, the motivation to prove their competence may decrease performance-prove-goal-oriented decision-makers' willingness to take risks. Rather, proving one's competence may mean steadily growing a firm without radical fluctuations in firm performance.

As expected, the results strongly supported expectations that decision makers possessing a performance avoid goal orientation would favor less innovative and less risk-taking firm postures. A performance avoid goal orientation motivates individuals to avoid significant performance declines and to avoid uncertainty and risk in their decision-making contexts. Because of the high failure rates of innovations and the potential losses that are associated with risk taking, it was no surprise to find that performance-avoid-goal-oriented decision makers favor less innovative and risk-taking firm postures. Somewhat of a surprise, however, was that the relationship between performance avoid goal orientation and proactiveness was not statistically significant. I expected that decision-makers' performance avoid goal orientations would be reflected in reactive firm-level decisions aimed at allowing other decision makers/firms to resolve market and technological uncertainties. Perhaps, performance-avoid-goal-oriented decision makers realize the necessity to not move late as a means through which to avoid total firm failure. In other words, the motivation to avoid total firm failure may prompt timely firm-level decisions despite the risk of relatively more minor failures along the way.

In terms of the relationships between each dimension of entrepreneurial orientation and each type of firm performance, the lack of consistent findings was a bit surprising at first. One explanation may be that a more complex moderation model is needed. Rather than just controlling for environmental dynamism/hostility and knowledge-based resources, a finer-

grained analysis of each dimensions' effects on firm performance while taking into account various contextual factors may be needed. However, viewing the results for the proposed three-dimensional entrepreneurial orientation model in light of the results for the alternative one-dimensional entrepreneurial orientation model provides some interesting implications. As discussed by Rauch, Wiklund, Lumpkin, and Frese (2009), each dimension of entrepreneurial orientation is equally important to explaining firm performance. Taking any dimension of entrepreneurial orientation alone does not necessarily influence performance. Rather, the value of an entrepreneurial orientation may depend on having the right combination of innovativeness, proactiveness, and risk-taking. To explain further, the development of new products and services alone (i.e., innovation) is not necessarily value creating if the innovation is just imitating the products and services of other firms without taking risks or being proactive. Such innovation would only place a firm in a position of competitive parity. Therefore, moderate to high levels of each dimension of entrepreneurial orientation may be needed in combination to create desired performance effects.

### *Implications*

This study provides implications for practitioners and scholars. Practitioners need to understand their own strengths and weaknesses so that they can understand the actions that can be taken to enhance these strengths and reduce these weaknesses. Integrating the findings of this dissertation with future research, one could suggest that no type of goal orientation is perfect for all decision-making contexts. As Covin and Slevin (1989) found, entrepreneurial orientations are more effective for dynamic and hostile environments whereas more conservative orientations in munificent and benign environments. The findings here suggest that learning (and some extent performance prove) goal orientations become reflected in entrepreneurial orientations whereas

performance avoid goal orientations become reflected in more conservative orientations. One option may be for decision makers to choose certain types of contexts. Performance-avoid-goal-oriented decision makers may select those more benign and munificent contexts that “fit” their intrinsic motivation. High learning goal orientations in such contexts may lead to too much firm-level experimentation for the firm to operate efficiently.

Selecting into a certain environmental context may not always be a viable option. An individual’s education, experiences, and other knowledge-based strengths may be suited to a context that conflicts with his or her goal orientation. Previous research suggests that situational inducements can alter one’s goal orientation (Chen & Mathieu, 2008). Firms may be able to enact systems of incentives and controls that induce desired goal orientations from their top decision makers.

For scholars, this dissertation provides results that contribute to upper echelons theory, goal orientation research, and entrepreneurial orientation research. The results strongly support upper echelons theory in showing that the intrinsic motivations of top decision makers shape their decisions regarding their firm’s posture. The support of the results for the dissertation’s theory suggests that scholars need to examine further the black box of upper echelons theory to study (1) finer-grained attributes of decision makers and (2) finer-grained activities of executives’ decision-making processes. Goal orientation represents one type of intrinsic motivational trait, yet many other types of motivations, values, norms, beliefs, and other personal characteristics inform how decision makers arrive at their decisions. Similarly, interpretation and response represent two decision-making process activities, others of which as discussed previously include absorption, filtration, selection, etc. Substantial research in non-top-decision-making contexts exists in psychology that could be extended to upper echelons theory for this

purpose. In doing so, scholars would have a stronger theoretical foundation upon which to base their finer-grained empirical studies.

The results provide an interesting twist to upper echelons theory. The results show that when many of the proxies commonly studied under the upper echelons umbrella, such as decision-maker's age, firm and industry tenure of the decision maker, etc., are controlled, the decision-maker's goal orientation remains a strong influence on the firm's entrepreneurial orientation. In fact, many of the proxies commonly examined in upper echelons studies did not have statistically significant relationships with the studied outcomes. On the one hand, the the results for the goal orientation effects alone emphasize the strength of upper echelons theory in providing a theoretical foundation for how firm outcomes are shaped by the personal attributes of decision makers. On the other hand, taking the results of the goal orientation and proxy effects together highlights the need to move to a finer-grained analysis of upper echelons theory.

The dissertation extended goal orientation research to the top decision-making contexts in firms. The top decision-making context in firms is very different from the contexts of previous goal orientation research, which largely examined achievement situations in classroom/lab-based studies and in the context of sales. The top decision-making context in firms, it could be argued (i.e., Davis-Blake & Pfeffer, 1989), is a much stronger context characterized by significant uncertainty, information overload, and perhaps high levels of dynamism and hostility. As such, one may not expect to find relationships between the finer-grained measures of decision-makers' personal attributes and firm outcomes. The results, however, strongly contradict this argument and show that decision-makers' traits are related to firm outcomes.

Previous goal orientation research has examined the relationship between an individual/team's goal orientation and the individual/team's adaptation. The results of the

dissertation also contribute to goal orientation research by showing that the individual decision-maker's goal orientation can shape the firm's entrepreneurial orientation, or how the firm adapts. This cross-level finding provides evidence to suggest, for example, that scholars will need to take into account the goal orientation of team (or business unit or any other higher-level organization) leaders (or other key individuals) alongside team member goal orientation in determining team (organizational) adaptation. Moreover, the finding also suggests that scholars need to examine how individuals define their achievement situations and the various mechanisms/tools that individuals use to fulfill their intrinsic motivations in these situations. For example, does the decision-maker's goal orientation influence the firm's entrepreneurial orientation through the vision that the decision maker forms for the firm? Or, does the decision-maker's goal orientation manifest in specific requests from or dictates to employees?

In terms of scholarly implications for entrepreneurial orientation research, the dissertation's findings suggest the nature of entrepreneurial action and entrepreneurial performance begins with the individual. Decision makers absorb, interpret, and respond to environmental signals based upon their personal attributes. How the individual recognizes and exploits opportunities (or not) is shaped by the individual's personal attributes. An entrepreneurship theory will need to form around individuals and their understanding of their context. For this theory to develop, more empirical research will be needed utilizing complex mediation (e.g., individual characteristic-behavior/interpretation-performance) and moderation models (Baum, Locke, & Smith, 2001).

While the individual resides at the nexus of entrepreneurship research, the context remains an important influence on the individual. During personal conversations with decision makers during the interview process, the decision makers discussed the recent widespread

economic downturn as altering the degree to which their firms' postures were entrepreneurial, often noting that their firm postures had become more conservative. The decision-makers' comments highlight the central role of individual decision makers in shaping their firms as well as the influence that context may have on the decision-making process. Further research is needed in terms of how and why decision makers perceive and react to the same signals differently in shaping their firm postures.

### *Limitations*

The present research has a number of limitations. Certainly, a scholar should avoid limitations to the extent possible in conducting research. However, I was fully aware of the limitations from the beginning with the understanding that in large part the strengths of my research corresponded to the limitations of previous research, and vice versa. Research designs present a list of tradeoffs, and I chose the set of strengths/limitations that in my opinion held the greatest potential to contribute to the current status of research. I address these limitations below, realizing that these limitations provide opportunities for future research just as previous research's limitations have provided the opportunity for this dissertation.

As discussed previously, the need to tap finer-grained measures of goal orientation required a research design involving self-reported data from respondents. The need for self-report data introduces common methods variance issues that may bias the results, including responding in socially desirable ways, concept abstractedness that leads to misinterpretations of various items, and other sources of systematic error. While I attempted to *ex ante* and *ex post* reduce the concern for common methods variance issues, a limited number of mechanisms are available to control for these issues, especially when surveying top-level decision makers. To the extent that more convenient types of samples exist, scholars may be able to rely upon secondary



sources of information to test for reliability of survey responses. For example, a scholar could compare whether “innovativeness” actually corresponds to higher level of innovative outcomes, such as new products and/or services. Similarly, research could be conducted to determine the extent to which unobtrusive indicators of one’s personal attributes (i.e., the symbols or pieces of information left behind by individuals as they partake in various activities) correlate with self-reported measures.

While a complex model in terms of examining how individual-level attributes indirectly influence firm performance through firm-level decisions, one could argue that the current model oversimplifies theory regarding entrepreneurial orientation. More specifically, the current research does not examine how environmental factors (i.e., dynamism and hostility) and firm-level factors (i.e., knowledge-based resources) moderate the relationship between entrepreneurial orientation and firm performance. While previous research has shown evidence for these moderated relationships, attempting to test for these moderated relationships would arguably lead to an excessive level of complexity by needing to test multiple four-way interactions. I have instead chosen to control for these variables given that the primary focus of this dissertation was on the antecedents of entrepreneurial orientation and not on the well-studied performance outcomes of entrepreneurial orientation. Certainly, the opportunity exists for scholars to examine the relationship between entrepreneurial orientation and performance using more complex research designs.

Given that my sample consisted largely of privately-held firms, performance data were not readily available in secondary sources. Therefore, I relied upon various other forms of performance data, including past growth rates, relative performance to competitors on a number of different metrics, and expectations for future performance. Each of these measures has

limitations. Relative performance and expectations for future performance are both perceptions of the decision maker and may be biased by various individual-level factors, such as the decision maker's hubris or his/her knowledge of competitors and the overall landscape. In terms of growth, one would ideally have data in terms of the growth rate for the year or two following collection of the data regarding entrepreneurial orientation. One could argue that past performance actually alters a decision-maker's aspirations and, hence, the types of decisions made regarding the firm. Therefore, the question arises as to whether the entrepreneurial orientation of the firm is actually the same as it was three or five years ago. While this question may be valid, my examination of test-retest reliability suggests at least some level of stability in entrepreneurial orientation over time. While one could (and should) examine entrepreneurial orientation's effects on firm performance going forward over the next year or two, the same argument could be posed in that the firm's entrepreneurial orientation could change during this timeframe.

#### *Prospects for Future Research*

This dissertation's research may serve as a platform for future research in numerous ways. First, the findings of this research suggest that top-level executives' finer-grained traits actually influence firm-level decisions and ultimately firm performance. The focus of this research centered on whether an executive's goal orientation influences how he or she may be motivated to interpret and then respond to their situations through decisions regarding the firm's innovativeness, proactiveness, and risk taking. However, interpretation and response (and my perspective on interpretation and response) captures only a minor part of the overall decision-making process. Absorption, filtration, interpretation, intra-firm communication and debate, and selection of a decision represent the formulation of a decision, which is then repeated over and

over as the firm implements the formulated decision. One can expect different individual-level attributes to influence each activity in this process. While this assertion follows existing upper echelons argument, it appeals to a finer-grained analysis not only of the individual-level attributes of decision makers (in terms of their values, norms, personality traits, motivations, and beliefs as opposed to coarser-grained demographic attributes) but also a finer-grained analysis of the decision-making process. Research in this vein would examine not only the types of actions upon which executives decide but also how, in terms of absorption, filtration, interpretation, etc., the executives arrived at that decision and how their personal individual-level attributes shape each decision-making activity.

The findings within the dissertation also provide interesting results regarding performance-avoid-goal-oriented decision makers. Being a top-level decision maker in an established firm usually entails a process through which an individual works his or her way up the “corporate ladder.” One might suggest that individuals possessing performance avoid goal orientations are unlikely in the upper echelons of a firm because of the individuals’ tendencies to avoid achievement situations. Similarly, the ambiguous and uncertain decision-making context of founding a firm also seemingly suggests a low likelihood of performance-avoid-goal-oriented individuals undertaking this task. From a theoretical standpoint, individuals possessing performance avoid goal orientations are not likely to exist at any meaningful level in the upper echelons of a firm because they are unable to climb the corporate ladder and are not likely to found their own firms. However, my findings point to a strong negative relationship between performance avoid goal orientation and innovativeness, risk taking, and overall entrepreneurial orientation, which in turn has negative implications for firm performance. While most of the respondents possessed performance avoid goal orientations on the lower end of the Likert scale,

a slight performance avoid goal orientation may actually disrupt the ability for decision makers to interpret and respond to some situations.

The top decision-making context in firms is a very different context than the classroom-based context in which the goal orientation construct emerged. The presence of these different contexts begs the question of whether individuals may possess different goal orientations to *achieve* in each respective *situation*. As of yet, research has not discerned other potential forms of goal orientations in different achievement situations. One potential form of goal orientation that may exist in the top decision-making context in firms that may not exist in the classroom-based context is an uncertainty avoidance goal orientation. Decision makers may not necessarily be performance avoid goal oriented and may actually realize that failures along the way build stronger firms in the long run. However, not all failures are perhaps necessary to building stronger firms, and decision makers may be more willing to absorb failures in certain contexts versus other contexts. More specifically, decision makers may be willing to take risks and accept failure in contexts of minimal uncertainty that provide learning opportunities, where the source of risks and failure in uncertain situations may be so ambiguous as to leave little opportunity to learn. Decision makers, therefore, may have internal motivations to avoid uncertainty without necessarily having internal motivations to avoid failure or performance declines.

Following previous research, the focus of this research was to examine the direct effects of each goal orientation dimension on entrepreneurial orientation (and its respective dimensions). However, evidence suggests that individuals may be able to possess more than one type of goal orientation (Button et al., 1996). A fruitful avenue of future research may be to examine how different goal orientations interact to influence a decision-maker's actions and decisions. Gully and Phillips (2005), for example, assert that a learning goal orientation may lead to more

exploration-type activities whereas performance goal orientation may lead to more exploitation-type activities. Porter et al. (2007) find evidence to suggest that, under certain conditions, individuals possessing both learning and performance goal orientations are less able to effectively adapt to changes in their tasks. The authors theorize that the individuals' inability to adapt (at least in the short term) may be due to the difficulty in balancing the competing motivations/demands of learning goal orientation/exploration and performance goal orientation/exploitation. Future endeavors that examine the interactions of all three dimensions of goal orientation can provide future insights into how individuals are motivated to interpret and respond to their situations.

## CONCLUSION

This study had three objectives: (1) to examine goal orientation as an antecedent of entrepreneurial orientation, (2) to examine how individual-level goal orientation influences firm-level entrepreneurial decisions and ultimately firm performance, and (3) to enter the “black box” of upper echelons theory to examine whether and how the finer-grained measures of individual-level attributes actually overcome situational influences in determining firm decisions. A substantial amount of research has established the link between individuals’ goal orientations and how they interpret and respond to their situations, and the research here has extended this relationship to the top decision-making context in firms where individuals face strong situational forces caused by uncertainty, complexity, and dynamism. In addition, this research has shown that the effects of goal orientation on entrepreneurial orientation are present even when controlling for commonly studied demographic attributes, such as decision-maker’s age, education, experiences, and top management team characteristics. I hope that this research encourages other scholars to (1) examine more complex models of how decision-makers’ personal attributes influence their entrepreneurial decisions in terms of both recognizing and exploiting opportunities, and (2) examine other finer-grained attributes of top decision makers within a finer-grained framework of the decision-making process.

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## APPENDIX 1

### INDEPENDENT VARIABLES

#### Goal Orientation

*Original VandeWalle (1997) scale*

On a scale from 1 (strongly agree) to 6 (strongly disagree), how would you rate yourself in respect to the following statements?

Learning goal orientation (Reliability=.89)

- (1) I am willing to select a challenging work assignment that I can learn a lot from.
- (2) I often look for opportunities to develop new skills and knowledge.
- (3) I enjoy challenging and difficult tasks at work where I'll learn new skills.
- (4) For me, development of my work ability is important enough to take risks.
- (5) I prefer to work in situations that require a high level of ability and talent.

Performance prove goal orientation (Reliability=.85)

- (1) I'm concerned with showing that I can perform better than my coworkers.
- (2) I try to figure out what it takes to prove my ability to others at work.
- (3) I enjoy it when others at work are aware of how well I am doing.
- (4) I prefer to work on projects where I can prove my ability to others.

Performance avoid goal orientation (Reliability=.88)

- (1) I would avoid taking on a new task if there was a chance that I would appear incompetent to others.
- (2) Avoiding a show of low ability is more important to me than learning a new skill.
- (3) I'm concerned about taking on a new task at work if my performance would reveal that I had low ability.
- (4) I prefer to avoid situations at work where I might perform poorly.

*VandeWalle (1997) scale adapted for top decision-making context*

On a scale from 1 (strongly agree) to 6 (strongly disagree), how would you rate yourself in respect to the following statements?

Learning goal orientation

- (1) I am willing to lead challenging projects that I can learn a lot from.
- (2) I often look for opportunities to develop new skills and knowledge.
- (3) I enjoy challenging and difficult tasks at work where I'll learn new skills.
- (4) For me, development of my work ability is important enough to take risks.

(5) I prefer to work in situations that require a high level of ability and talent.

Performance prove goal orientation

- (1) I'm concerned with showing that I can perform better than my others (i.e., other decision makers in your firm or competing firms).
- (2) I try to figure out what it takes to prove my ability to others (i.e., peers at work, friends, family, etc.).
- (3) I enjoy it when others at work (or who are close to me) are aware of how well I am doing.
- (4) I prefer to lead projects where I can prove my ability to others.

Performance avoid goal orientation

- (1) I would avoid leading a project if there was a chance that I would appear incompetent to others.
- (2) Avoiding a show of low ability is more important to me than learning a new skill.
- (3) I'm concerned about leading new initiatives at work if my performance would reveal that I had low ability.
- (4) I prefer to avoid situations at work where I might perform poorly.

### **Entrepreneurial Orientation**

On a scale from 1 (very strongly the first option) to 7 (very strongly the second option), please weigh the following comparative statements in terms of your firm. Reliability=.75 (Wiklund & Shepherd, 2003b).

*In general, the top managers of my firm favor ...*

A strong emphasis on the marketing of tried and true products and services vs. A strong emphasis on R&D, technological leadership, and innovations

*How many new lines of products or services has your firm marketed in the past 5 years?*

No new lines of products or services vs. Very many new lines of products or services

Changes in product or service lines have been mostly of a minor nature vs. Changes in product or service lines have usually been quite dramatic

*In dealing with its competitors, my firm ...*

Typically responds to actions which competitors initiate vs. Typically initiates actions which competitors then respond to

Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc. vs. Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.

Typically seeks to avoid competitive clashes, preferring a “live and let live” posture vs. Typically adopts a very competitive, “undo the competitors” posture

Is very aggressive and intensely competitive vs. Makes no special effort to take business from the competition\*

*In general, the top managers of my firm have ...*

A strong proclivity for low-risk projects (with normal and certain rates of return) vs. A strong proclivity for high-risk projects (with chances of very high returns

*In general, the top managers of my firm believe that ...*

Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior vs. Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm’s objectives

*When confronted with decision-making situations involving uncertainty, my firm ...*

Typically adopts a cautious, “wait and see” posture in order to minimize the probability of making costly decisions vs. Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities

\*This item was added by Lumpkin and Dess (2001) when comparing proactiveness and competitive aggressiveness.

## APPENDIX 2

### DEPENDENT VARIABLES

#### **Growth**

In percent growth (i.e., a sales increase from \$1 to \$2 equals 100% growth),

- (1) What has been your firm's sales growth for the last three years, or since inception?
- (2) What has been your firm's sales growth for the last five years?
- (3) What has been your firm's profit growth for the last three years, or since inception?
- (4) What has been your firm's profit growth for the last five years?

Approximately, how many individuals were employed by your firm three years ago (or at the time of the firm's founding)? Please count full-time employees as 1 and part-time employees as .5.

Approximately, how many individuals were employed by your firm five years ago (or at the time of the firm's founding)? Please count full-time employees as 1 and part-time employees as .5.

#### **Relative focal firm-competitor performance**

For the following criteria and on a scale from 1 (top 20%) to 5 (lowest 20%), how would you rank your company relative to your closest competitors in your industry for the last three years?

- (1) Market share
- (2) Growth
- (3) Overall financial performance
- (4) Overall performance

#### **General Organizational Performance**

For the following criteria and on a scale from 1 (top 20%) to 5 (lowest 20%), how would you rank your company relative to your closest competitors in your industry for the last three years?

- (1) Overall customer/client satisfaction
- (2) Ability to retain essential employees
- (3) Ability to attract essential employees
- (4) Quality of products and services
- (5) Development of new products and services
- (6) Implementation of key strategies
- (7) Implementation of key internal processes

**Future Performance**

Please rank the following statements from 1 (strongly agree) to 7 (strongly disagree):

- (1) The firm is positioned to take advantage of future opportunities.
- (2) The firm has the capabilities to adjust effectively to potential changes in the external environment.
- (3) The firm should be able to gain above-average returns for the next three years.
- (4) There is a potential that the firm will miss earnings estimates sometime in the near future. (reverse scored)

**APPENDIX 3**  
**CONTROL VARIABLES**

**Executive tenure**

How many years have you been employed by your firm?

**Industry tenure**

How many years of experience do you have in the industry in which your firm competes?

**Executive age**

What is your age?

**Top management team age**

What is the average age of your firm's top management team members?

**Top management team tenure**

What is the average tenure for the top management team members in your firm?

**CEO dominance**

Please rank the following statements from 1 (strongly agree) to 7 (strongly disagree)

- (1) Major decisions are commonly decided upon by the top management team as a whole.
- (2) There is little discussion among top management team members in making major firm decisions (reverse scored).
- (3) The CEO is the final voice on all major decisions (reverse scored).

**CEO tenure**

How many years have you served as CEO of your firm?

**Founder**

Are you the founder or one of the founders of your firm?

**Public**

Is your firm publicly held?

**Stakeholder**

Does your firm have any influential stakeholders (i.e., family investors, business angels, venture capital firms, etc.)?

**Firm Age**

When was your firm founded?

**Firm Size**

How many individuals are currently employed by your firm? Please count full-time employees as one and part-time employees as .5 each.

**Environmental dynamism**

On a scale from 1 (very strongly for the first option) to 7 (very strongly for the second option), how would describe the external environment within which your firm operates?

- (1) Our firm must rarely change its marketing practices to keep up with the market and competitors vs. Our firm must change its marketing practices extremely frequently (e.g., semi-annually)
- (2) The rate at which products/services are getting obsolete in the industry is very slow (e.g., basic metal like copper) vs. The rate of obsolescence is very high (e.g., as in some fashion goods and semi-conductors)
- (3) Actions of competitors are quite easy to predict vs. Actions of competitors are unpredictable
- (4) Demand and consumer tastes are fairly easy to forecast (e.g., for milk companies) vs. Demand and tastes are almost unpredictable (e.g., for fashion goods)
- (5) The production/service technology is not subject to very much change and is well established vs. The modes of production/service change often and in a major way

**Environmental Hostility**

On a scale from 1 (very strongly for the first option) to 7 (very strongly for the second option), how would you characterize the external environment within which your firm operates?

- (1) Very safe, little threat to the survival and well-being of my firm vs. Very risky, a false step can mean my firm's undoing
- (2) Rich in investment and marketing opportunities vs. Very stressful, exacting, hostile; very hard to keep afloat
- (3) An environment that my firm can control and manipulate to its own advantage, such as a dominant firm has in an industry with little competition and few hindrances vs. A dominating environment in which my firm's initiatives count for very little against the tremendous competitive, political, or technological forces



**Knowledge-based Resources**

On a scale from 1 (very strong) to 7 (very weak), compared to other companies in your industry, how would you rank your company's position in terms of:

- (1) Staff with a positive commitment to the company's development
- (2) Technical expertise
- (3) Expertise regarding the development of products and services
- (4) A highly productive staff
- (5) Expertise in marketing
- (6) Special expertise regarding customer service
- (7) Special expertise regarding management
- (8) Innovative markets
- (9) Staff educated in giving superior customer service
- (10) Staff who like to contribute with ideas for new products/services
- (11) Staff capable of marketing your products/services

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