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IN OVER THEIR HEAD? EXECUTIVE JOB DEMANDS AND THEIR EFFECT ON DECISION MAKING AND FIRM OUTCOMES.

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IN OVER THEIR HEAD? EXECUTIVE JOB DEMANDS AND THEIR EFFECT ON DECISION MAKING AND FIRM OUTCOMES.

A DISSERTATION APPROVED FOR THE
MICHAEL F. PRICE COLLEGE OF BUSINESS

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ABSTRACT

The business environment is more uncertain, dynamic and complex, organizations are more diverse and harder to manage, and owners demand greater and greater returns. From the perspective of CEOs, these factors, in tandem with the level of success they expect from themselves, have led the position of CEO to become increasingly demanding. This has led to over a thousand CEOs leaving their jobs in both 2008 and 2009. Job demands at the employee level have been a construct of interest, with demands positively related to mental strain, job dissatisfaction and burnout. However, demands also have been seen to benefit performance somewhat with an inverse-U shaped relationship between job demands and performance. While job demands at the employee level have been well researched, very little has been done at the executive level. The effect of job demands on top executives should be of great interest, given the high impact these executives' behavior has on the performance of a firm.

In this dissertation, I examine the effects of executive job demands first by operationalizing the construct using observable proxies for the previously proposed components of task challenges (created by environmental complexity as well as organizational characteristics such as diversification, slack, and support from the top management team), performance challenges (created by expectations for performance from owners and measured by the monitoring imposed on managers from the owners) and executive aspirations (created by a CEO's own expected level of performance). Using this operationalization, I examine how high job demands on a CEO affect their decision making process, specifically looking at how high demands might impact the

rational decision making of a manager such that they will limit their search for alternatives and be more likely to make decisions that mimic the strategic behavior of other similar firms. I find some support for this hypothesis. This limited rationality in decision making is also expected to cause a manager to lean more upon his or her prior experiences, strengthening previously demonstrated relationships between demographic characteristics of managers (upper echelon proxies for top manager cognitions) and strategic outcomes. However, I find no support for this hypothesis. As a final impact on decision making, high job demands are expected to cause a manager to vacillate in their strategic choices, leading a firm to exhibit frequent changes in strategy or have high strategic dynamism. There is some support for this hypothesis.

This dissertation also considers the effect of executive job demands on firm performance, specifically that job demands will have an inverse-U shaped relationship with firm performance (ROA, ROE, ROI & Tobin's Q). This hypothesis is not supported, however, there is some support that high demands are related to lower financial performance. Under high job demands, firm performance may also tend vacillate from year to year (performance variability), and there is some support for this hypothesis. Finally, while I examine main effects on the financial performance outcomes, I also consider that the strategic processes of conformity and dynamism affect these relationships. However, I do not find support for a mediating role of dynamism or conformity on financial performance.

Chapter 1

Introduction

Overview

> *"I went to (Ford's) board and told them I had too much to do. In this environment, with a relatively young management team facing tough times, I felt that we could benefit from leadership of someone who had been through tough times successfully."*
>
> -William C. Ford, Jr. (CNNMoney.com, 2006)

CEOs have been staying in their jobs for shorter and shorter periods in recent years, with studies[1] showing an average length of tenure of six years (Kaplan & Minton, 2006). Further, 1,482 CEOs left their positions in 2008 and 1,227 left in 2009 (up from 663 in 2004) with the majority citing the ambiguous "resignation" as to the reason why (Hsu, 2009). This turnover is not without consequences, with any change in firm leadership frequently leading to organizational change with mixed acceptance, increased rates of failure and mixed to negative impacts on the market performance of firms (Kenser & Sebora, 1994).

One possible explanation for such phenomena may be that the demands on top executives are too high and growing. When William Ford Jr. stepped down from the CEO and president position, he was doing the jobs of the CEO, president and chairperson. Further, the firm did not have a COO, and those responsibilities had become part of the office of the president. Externally, there was a perception that "the old game plan no longer (worked) in an auto industry facing nimble rivals in an

[1] Kaplan and Minton's study looked at CEOs from 1992-2005. Over the full sample, the average tenure was seven years, but over a smaller sample of 1998-2005, the average tenure shrunk to six years.

increasingly globalized market" (Freeman & Merle, 2006). The company was cutting production plans, shutting plants for extended periods of time, and divesting automobile brands (CNNMoney.com, 2006). Further, consumer preferences were seen as changing, and the company had lost $1.4 billion in the first half of the year (Freeman & Merle, 2006). Ford seemed to be facing strong environmental challenges, organizational limitations and performance challenges when he decided to step down. From a theoretical standpoint, it may be that Ford was affected by his position being a highly demanding one, leading him to withdraw (by reducing his role to only that of chairperson).

This dissertation is an inquiry into how such high demands may affect the behavior of top executives. The overarching research question considered is how executive job demands affect the strategic choices of the CEO and the subsequent firm outcomes. This question and some of the relationships to be examined come out of Hambrick, Finkelstein and Mooney's (2005a) theoretical paper that first considered the impact of executive job demands.

With William Ford's withdrawal in mind, it may be useful to consider how job demands affect a top manager. At any level, job demands can be seen as "physical, social, or organizational aspects of the job that require sustained physical or mental effort" (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001: 501). Such demands or stressors can lead to withdrawal from the organization (Drake & Yadama, 1996; Geurts, Schaufeli & De Jonge, 1998; Jex, 1998; Koeske & Koeske, 1993; Podsakoff, LePine & LePine, 2007) reduction of in role behaviors (Cropanzano, Rupp, & Byrne, 2003) or detachment from the job (Halbesleben & Buckley, 2004). These demands can

also lead to exhaustion (Demerouti et al., 2001) and other physical health problems (Theorell & Karasek, 1996), negative emotions and cognitions (Jex, 1998) mental strain, and job dissatisfaction (Karasek, 1979). However, not all effects are negative. It is suggested that too easy or hard a job can lower satisfaction or performance, but moderate job demands can increase the satisfaction and performance (Janssen, 2001). This would seem to be supported by achievement motivation theory, suggesting that high achievers actually look for a moderate challenge (McClelland, 1962; 1976). Further, if employees see their job stressors as creating opportunity for development and achievement, they may actually become more satisfied, committed and perform better (Cavanaugh, Boswell, Roehling & Boudreau, 2000; LePine, Podsakoff, LePine, 2005; Podsakoff et al., 2007)

The outcomes from excessive job demands at any level of the organization can be detrimental to the smooth functioning of said organization. However, the effects of executive job demands may have a greater impact due to the relative importance of the top executives, specifically CEOs, on organizational outcomes (Hambrick 2007; Hambrick et al., 2005a). Given the assumption that the strategic choices of individuals does have an effect on firm outcomes, organizational actors, especially at the upper echelons of the firm, can affect the performance of an organization (Child, 1972). These individuals' strategic choices are expected to reflect the values and cognitions of top managers (Hambrick & Mason, 1984). These executives also have relatively great power within an organization. Given this, the cognitions of top managers are seen as important due to the sizable impact their decisions have on the firm (Carpenter, Geletkanycz & Sanders, 2004).

Executive job demands are seen to come out of external environmental pressures, organizational structure, owner expectations for a given level of performance and the aspirations an executive places on themselves (Hambrick et al., 2005a) Such demands may impact the decision making processes of a top executive by limiting their cognitive capacity. Even without high demands, the information processing requirements already on a manager limit their ability to search for and evaluate all possible alternatives, forcing them to be boundedly rational in their decision making (Cyert & March, 1963). Further, the less procedural rationality used in making the decision (driven by the constraints on time used for a comprehensive search for information or for analysis of such information), the less likely the decisions will be effective (Dean & Sharfman, 1996). High job demands are expected to exacerbate this problem, putting further constraints on the time for search and processing (Hambrick et al., 2005a).

High job demands may create stress for top executives (Karasek, 1979). Stress has been shown to have two possible outcomes on decision making. First, stress may restrict information gathering and processing, leading a firm to behave rigidly and with a greater focus on its prior behavior (Staw, Sandelands & Dutton, 1981). Conversely, executives under high stress may engage in high levels of strategic initiatives and then vacillate between high levels of activity and paralysis (Hambrick & D'Aveni, 1988; Staw et al., 1981). High stress may also do more to activate the top managers (Gardner, 1986; Gardner & Cummings, 1988; Janssen, 2001), leading to greater interaction. How such stressors are perceived may be important to such results (Cavanaugh et al. 2000; LePine et al., 2005; Podsakoff et al. 2007).

Importance of the Research

Theoretical contributions. The theoretical basis for this dissertation was laid out in Hambrick, Finkelstein and Mooney's (2005a) paper on executive job demands. As such, this dissertation is focusing primarily upon their arguments. However, this dissertation does make a theoretical contribution by consideration of upper echelons theory through the Brunswik (1956) lens model. Upper echelons provides important insight as to how managers make decisions, namely that they perceive information through their values and cognitions. However, it does not address the question fully of *why* these processes affect managerial decision (Bacharach, 1989). The lens model assumes that individuals do not directly perceive things in the external environment but rather perceive multiple fallible indicators of a given object or event. Not all possible indicators are perceived by an individual, but the indicators that are perceived are chosen based upon an individual's values and cognitions (using the upper echelons nomenclature - Hambrick & Mason, 1984). Given the tremendous impact a top manager's decisions can have on the overall performance of the firm, greater understanding of the drivers of such decisions, specifically how an individual's lens selects indicators, can contribute meaningfully to the literature. Given that job demands on executives seem to be increasing with a more uncertain, dynamic and complex business environment, more diverse and difficult to manage organizations and increasing demands from ownership for greater and greater returns, it seems that study of the effects of such demands would be of increasing theoretical importance. Therefore, this study examines how such demands shrink the number of indicators considered, or even distort the way such indicators are perceived and processed.

Empirical Contributions. As stated, Hambrick and colleagues' prior work drives much of the theoretical arguments; thus the overall empirical contribution is to test this prior work. Specifically the first empirical contribution of this dissertation is to examine a number of direct effects of executive job demands on the decision making processes of top executives (and the subsequent strategic processes and performance outcomes of such decisions). This dissertation begins by testing whether the constraints on information gathering and processing created by job demands; constraints which shrink the number if indicators considered and tighten the lens; will lead a manager to implement policies that mimic the strategic behavior of other, exemplar firms regardless of the appropriateness of such action (Hambrick et al., 2005a; Haveman, 1993). Second, the dissertation tests the question of if the stress created by executive job demands will distort the lens through which a manager perceives the environment, leading indicators to be perceived as threats. Such perceptions of the indicators as threats may cause an executive to be more likely to vacillate between engaging in many strategic actions in one year, and then do nothing the next (Hambrick & D'Aveni, 1988; Hambrick et al., 2005a; Staw et al., 1981). Finally, job demands are expected to have an impact on the firm's "bottom line," so the direct effects of executive job demands on a firm's financial performance and whether or not such performance is stable, or varies wildly from year to year are examined.

For a second contribution, this dissertation considers the potential moderating effects of executive job demands. This moderating effect is another possible consequence of the restriction of information gathering and processing. Given that an executive under high demands is expected to have little time for effective decision

making, once again the executives lens is expected to tighten, leading an executive to filter indicators even more through his or her values and cognitive bases and lean more on his or her past experiences (Hambrick et al., 2005a). Given this greater reliance on values and cognitive bases and the greater emphasis on prior experience, job demands are expected to moderate traditional upper echelons relationships (i.e. the relationship between an executive's demographic characteristics and their strategic behaviors - Hambrick, 2007). This dissertation examines such a relationship by testing previously suggested relationships between executive tenure and the strategic processes in the model plus examining how executive job demands moderate this relationship. This is expected to expand both the understanding of job demands' effects on the cognitions of a manager, as well as offering greater understanding of what elements may impact the demographics-to-strategy upper echelons model.

While the direct and moderating effects of executive job demands are expected to affect strategic processes and firm outcomes significantly, it may be that the relationships are complex and that they may feed into one another. Again, with the assumption that the choice of a manager can affect the outcomes of a firm (Child, 1972), it is likely that the strategic processes chosen have an impact on the performance of a firm. This dissertation asserts that there will be a significant relationship between executive job demands and the strategic processes of the firm. Therefore, the third empirical contribution this dissertation will make is to test an alternate explanation of the proposed relationships between executive job demands, strategic processes and firm performance by examining the potential for mediated

relationships. Specifically, I test to see if strategic processes will fully mediate the relationship between executive job demands and firm performance.

Measurement contributions. Despite executive job demands being seen as a potentially important determinant of top executive behavior (and by their actions, firm behavior), there has not yet been a study testing the effect of executive job demands (Hambrick, 2007). Ng, Ang and Chan (2008) did perform a study showing the moderating role of job demands on the relationship between leader effectiveness (mediated by leader self-efficacy) and neuroticism, extraversion and conscientiousness. However, this relationship was examined by looking at the leader effectiveness of military recruits using a five item scale examining workload, task difficulty and problem solving demands. While there is a leadership component of top executive behavior, this study is not particularly generalizable to a strategic context in trying to examine how the cognitions of a top manager affect the actions and performance of a firm.

Further, while this measure was appropriate for their context, the survey seems inappropriate for further research on executives for two reasons. Firstly, the questions may not be appropriate for the demands placed on a top executive, given that the questions do not reflect that many of the top executive's decisions are non routine and create streams of sub-decisions (Hickson, Butler, Gray, Mallory & Wilson, 1985; Mintzberg, Raisinghani & Theoret, 1976). These questions are also inappropriate because they ignore one proposed driver of demands, the executive's own aspirations. Secondly, because this measure requires surveying executives, it may limit the ability of researchers to use executive demands as a construct. The upper echelons perspective

focuses on the use of observable characteristics as proxies of manager cognitions, at least in part, due to the difficult in gaining access to such top managers (Carpenter et al., 2004; Hambrick & Mason, 1984).

The major methodological contribution of this dissertation is the creation of a measure of executive job demands based upon observable characteristics. This measure draws from the theoretical construct proposed by Hambrick et al., (2005a) who suggested that executive job demands are made up of task challenges (demands created by environmental pressures and characteristics of the organization), performance challenges (demands for financial performance from a firm's owners) and the individual aspirations of the manager (an internal pressure to perform). These three elements of job demands are measured using measures of organizational characteristics (e.g. productivity, diversification, slack); agency measures to capture the performance challenges placed on a manager, and biographical and compensation based data as observable proxies of the aspirations of a manager.

Managerial contributions. The current statistics on turnover at the CEO level raise an interesting question: Is the job of CEO too hard? Are the demands placed on the CEO so high that a single individual cannot handle those demands? William Ford's example of being an executive wearing too many hats in a highly demanding environment may suggest that the demands on the job of CEO have surpassed the capacity of any one individual to do it. This study will attempt to establish the effects of such high demands on the manager. These effects may show that by asking so much out of a CEO, their effectiveness in terms of their decisions and the performance of the firm will be limited. By showing such limitations, this may lead to greater interest in job design at

the CEO level. It may also suggest that a larger executive team will mitigate the effects of such high demands.

Organization of the Dissertation

This dissertation will continue as follows. In chapter two, I review the relevant elements of the job demands and upper echelons literatures. From this background, I outline how these literatures come together for the executive job demands construct. With this construct established, I develop hypotheses that examine the direct, moderated and mediated effects between executive job demands, strategic processes and firm performance. Chapter three outlines how the executive job demands construct is measured and the other previously established measures that are used to test the hypotheses. This dissertation uses a sample of 200 firms from multiple industries to test the hypotheses. OLS regression and structural equations modeling (SEM) is used to test the various hypotheses. Chapter four provides the results of this study, and chapter five discusses the implications of such results and concludes the dissertation.

Chapter 2

Literature Review and Hypotheses

This dissertation examines the effects executive job demands have on strategic processes and financial performance. This chapter discusses the theoretical background behind this research question, beginning with a review of the upper echelons perspective with emphasis on integrating the Brunswik lens model (1956). Next, I review three models of job demands with an emphasis on outcomes of job demands. The executive job demands model, explicated by Hambrick et al., (2005a) and informed by my previous discussion on upper echelons and job demands is described. Finally, hypotheses on possible direct, mediated and moderated relationships with strategic processes and financial performance are proposed.

The Upper Echelons Perspective

The upper echelons perspective, as first proposed by Hambrick and Mason (1984), focuses on the top executives for explanations of a firm's behavior. Rather than assuming that a firm's actions and outcomes are determined entirely by their industry group (Porter, 1980) or by shifts in the external environment (Hannan & Freeman, 1977), the upper echelons perspective assumes that a manager's choice matters (Child, 1972) and therefore shapes the behavior and outcomes of the firm. With this focus on strategic choice, upper echelons considers that "executives act on the basis of their personalized interpretations of the strategic situations they face and …these personalized construals are a function of the executives' experiences, values and personalities" (Hambrick, 2007: 334). The focus is placed on the top executives in a firm because they often make up the dominant coalition, the group of individuals with

the greatest impact on the organization's mission and goals (Cyert & March, 1963). The top executives represent the primary interface between the firm and its external environment and have a relatively high degree of power in the organization, leading to said top executives' behavior having a strong impact on that organization's actions and outcomes (Carpenter et al., 2004).

Upper echelons takes a behavioral theory perspective in that it views the decisions of top managers as made in a boundedly rational way (Hambrick, 2007; Hambrick & Mason, 1984). Under such assumptions of bounded rationality, the amount of information a manager has access to is overwhelming (Mintzberg, 1973) and a manager cannot optimize his or her decisions because of the information processing requirements. Rather, the manager chooses a satisfactory course of action (Simon, 1947; March & Simon, 1958). In selecting alternatives, how a manager perceives information in the environment and how they make choices is based upon their cognitive bases and their values (Hambrick & Mason, 1984).

Managers alter their perception of the environment and the organization in three important ways (Hambrick & Snow, 1977). First, managers selectively choose what elements of the environment and organization on which to focus their attention. This attention can be dependent on the context or situation the manager is in and how the organization is set up (Ocasio, 1997). Next, that manager further limits their perception by selectively perceiving information within those elements to which he or she is paying attention. Finally, the information is filtered through the manager's cognitive bases and values in order to interpret those pieces of information.

The original upper echelons perspective put the emphasis on the entire top management team (TMT), rather than a single executive (usually the CEO) (Hambrick & Mason, 1984). The shifted emphasis to the group level was undertaken with the understanding that leadership of an organization is shared with the team, and such a focus would lead to better explanations of the organization's outcomes (Hambrick, 2007). This dissertation does not consider the entire TMT, but rather does focus solely on the CEO[2]. There is acknowledgement that, despite the explanatory power found with a focus on the TMT, there are still some questions best considered at the individual level of analysis (Carpenter et al., 2004) and thus upper echelons research is not restricted exclusively to the group level. While some characteristics of executive job demands are applicable to the entire team and the theory suggests that as the demands on the CEO rise the demands on the rest of the team will also rise (Hambrick et al., 2005a), some of the elements of demands affect the CEO greater than the elements would affect another manager in the firm.

Methodologically, the upper echelons perspective created a focus on observable proxies for cognitions and values of a top manager (Hambrick & Mason, 1984). Use of such data is important because of the great difficulty in getting data from top managers of major firms. Such observable characteristics can be things like tenure, functional background, age (Hambrick & Mason, 1984), but can also be deeper assessments of specific characteristics, such as international experience (Carpenter & Fredrickson, 2001), content analyses of shareholder letters as assessments of

[2] I did use the variables TMT heterogenity, TMT firm tenure and TMT team tenure in my analysis. However, those variables were used to reflect challenges presented to the CEO by working with a less experienced TMT with a narrower base of experience. The analysis is focused on demands at the CEO level, not the TMT level.

managerial attention (Abrahamson & Hambrick, 1997) and CEO pictures in the annual report as assessments of narcissism (Chatterjee & Hambrick, 2007). These proxies are admittedly incomplete and imprecise (Hambrick 2007), but the lowered cost of gathering enough data for meaningful analysis offsets the loss of precision. In general, the examination of demographic characteristics as a proxy for cognitions and values has shown a meaningful impact on firm outcomes (see Finkelstein & Hambrick [1996] and Carpenter et al. [2004] for a review).

Upper Echelons Theory and the Lens Model.

Where upper echelons has shown a strong capacity to predict, it does not quite meet the test of strong theory in its ability to explain (Bacharach, 1989), specifically in its ability to explain why cognitions and values might affect strategic choice and subsequent outcomes. The upper echelons perspective describes the process sequentially: the environment is too complex to be perceived by a given decision maker, thus they screen the environment, selectively perceiving and interpreting information based upon their cognitive bases and values (Hambrick & Mason, 1984). What is not described is why these cognitions and values are used to filter and interpret information. To find explanations for this filtering mechanism, it may be useful to consider the decision making mechanisms assumed in upper echelons thinking through psychological theory.

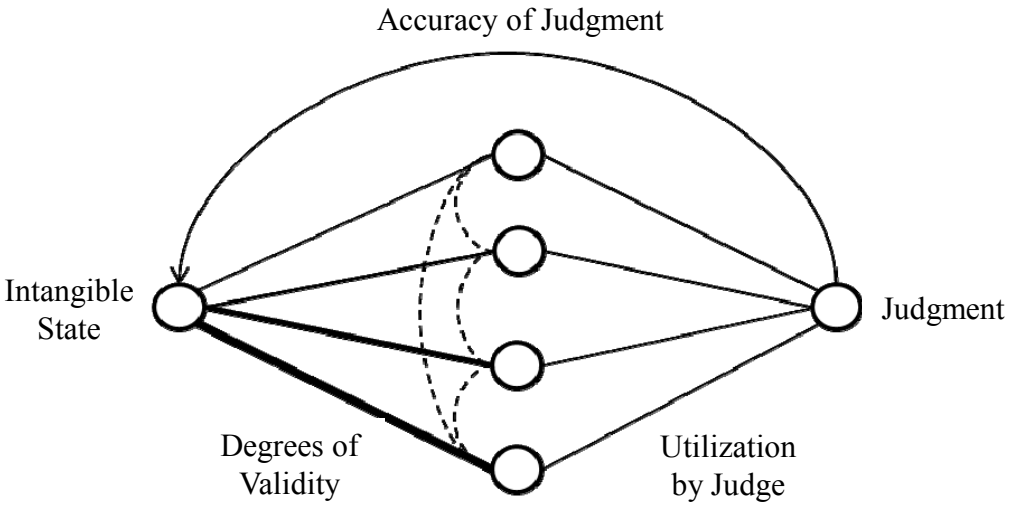
The upper echelons perspective seems to agree with Brunswik's (1956) lens model of perception. This model suggests that objects are not directly perceived by individuals, but instead perception depends on the attributes of the object, the context in which it is seen, the manner it is perceived and on characteristics of the perceiver

(Fiske & Taylor, 1991). The lens model assumes that there is a great degree of uncertainty in the world (Hammond, 1996). To cope with this uncertainty, an individual needs a perceptual lens through which they view the external environment (Wolf, 2005). Through this lens, individuals integrate multiple fallible indicators as a means of interpreting the world (Hammond, 2000), a means of seeing the world very much in synch with the upper echelons perspective.

This concept of multiple fallible indicators suggests that we make inferences about the true state of a given object based upon a number of characteristics of that given object. None of those indicators completely describe the object nor can they be seen as perfectly dependable (Hammond, 2000). No combination of these indicators will completely eliminate the uncertainty around the true nature of the object. So innate is the tendency of human beings to use multiple fallible indicators, that they will construct indicators in their absence. Each individual must independently weight the multiple indicators in their perception.

As demonstrated in Figure 1, the validity of each indicator can vary. One indicator might give a very accurate impression of the object of interest while another might only describe the object in a passing way. As a result, more accurate judgments about the object of interest can be made provided that the individual gives greater weight to the more valid indicators. Time may also be an important component of analyzing such indicators, in as much as an individual can better analyze the multiple indicators when they have a greater time horizon.

FIGURE 1
Lens Model



The lens model: the pictorial representation of the presence of (1) multiple fallible indicators (center), (2) their differential degrees of validity (thickness of lines indicate degree of validity), (3) their interrelationships (dashed lines), (4) degree of utilization (or weight by judge), and accuracy of judgment.

(Hammond, 1996: 168)

How these judgments are made hinges on an organizing principle, "the cognitive mechanism by which the information from multiple fallible indicators is organized into a judgment" (Hammond, 1996: 171). The principle may be to treat all indicators equally, to average the indicators or to give different weight to each indicator. Using the upper echelons nomenclature, it is the cognitive bases and values of a top executive that affects which multiple fallible indicators he or she most relies upon when making a judgment.

In Hambrick and Mason's (1984) original conceptualization, cognitive bases and values are the filter through which information passes. This leads to what information is perceived and how it is interpreted as a top executive makes a strategic decision. Using the lens model as an explanation for this process, the cognitions and values of the top executive serve to tighten or expand the lens through which they perceive either the external environment or organizational cues. With an expanded lens, more indicators may be perceived and more sophisticated organizing principles may be used (leading to greater accuracy in judgments). With a tightened lens, the cognitions and values of a top executive serve to limit the number of indicators perceived and diminish the effectiveness of the organizing principle.

With the upper echelons perspective established and its connection to the lens model discussed, I will now discuss theory underlying the job demands construct. I will then tie the two together by discussing the executive job demands construct and then propose the hypotheses this dissertation will test.

Job Demands

As stated before, job demands can be seen as "physical, social, or organizational aspects of the job that require sustained physical or mental effort" (Demerouti et al., 2001: 501). The mental effort can be either cognitively based or emotionally based (Bakker & Demerouti, 2007). Such demands are not automatically negative, but they become job stressors in situations when high effort is required and the employee is not given adequate time to recover (Meijman & Mulder, 1998). When they become stressors, they may lead to strains, including anxiety, exhaustion, depression and burnout (Jex, 1998). There are three major models discussing how these

demands interact with other elements of the job to create physical and mental strain in the individual. Such strain can affect said individuals' physical and psychological well being as well as the individual's performance. The first of these models is the demand-control-model (DCM), which is influenced by the demands on an individual and the amount of control an employee feels he or she has over the performance of their job (Karasek, 1979). This model emphasizes demands created by work overload, time pressure or conflicting demands created by performance of their jobs. There is an appreciation within the DCM model that task related demands are the major source of job pressures (Buck, 1972). Job control focuses on the ability of the employee to control their activities and skill usage (Karasek & Theorell, 1990) and may also be seen as the autonomy an employee has (Bakker & Demerouti, 2007). This model focuses on the interaction between these two constructs with the greatest mental and physical strain put on the employee when a job has high demands and little control. There has been strong support for the hypothesis of demands leading to strain (Karasek, 1979; Schnall, Landsbergis, & Baker, 1994), but less conclusive support for the interaction effect between control and demands on strain (Bakker & Demerouti, 2007; De Jonge & Kompier, 1997; Van der Doef & Maes, 1999) or burnout (Halbesleben & Buckley, 2004).

The second model, the effort-reward imbalance model (ERI), focuses more on the rewards associated with work (Siegrist, 1996). This model sees strain as the outcome of an imbalance between effort and rewards, where the greatest strain comes out of situations where an employee is putting forth great effort and receiving low rewards. Effort, as originally used in the ERI model, can be seen as having extrinsic

(physical demands, time constraints, psychological effort) and intrinsic sources (the internal motivations of a worker). Alternate conceptions of the ERI model (Siegrist, 1999; van Vegchel, de Jonge, Bosma & Schaufeli, 2005) have suggested that intrinsic sources might better be conceptualized as overcommitment, "a set of attitudes, behaviors and emotions reflecting excessive striving in combination with a strong desire of being approved and esteemed" (Bakker & Demerouti, 2007: 310). In this model, overcommitment could lead to job strain even without an imbalance between extrinsically driven efforts and rewards, but the greatest strain would be created when an imbalance between extrinsic job demands and rewards interacts with overcommitment (Siegrist, 2002).

Under conditions of imbalance, the equity theory predictions (Adams, 1963) of reduction of effort, maximization of rewards or withdrawal from the situation would be undertaken by the individual in the imbalance situation. However, in certain conditions; no alternative job opportunities, strategic choice for expected future returns, or the individual is prone to work related overcommitment; an individual may persist in these conditions of imbalance (Siegrist, 1996). If the individual persists, they are prone to physiological impairments (Siegrist, 1996), burnout (de Jonge, Bosma, Peter & Siegrist, 2000) and lowered job satisfaction (Calnan, Wainwright & Almond, 2000) (see van Vegchel et al. [2005] for a more exhaustive review).

While there has been empirical support for the DCM and ERI models (van der Doef & Maes, 1999; van Vegchel et. al, 2005), there is concern that the models do not completely consider the complexity of organizations and may focus on variables (control or rewards) which may be applicable in one job but not in another (Bakker &

Demerouti, 2007). To address this concern, Demerouti et al., (2001) proposed the Job Demands-Resources (JD-R) model. This model presumes that each job has different elements that may create or mitigate stress and that those elements can be categorized as either job demands or job resources. Job demands are again focused on elements of the job leading to increased and sustained effort. Job resources are physical, psychological, social or organizational elements of a job that are "(a) functional in achieving work goals; (b) reduce job demands at the associated physiological and psychological costs; (c) stimulate personal growth and development" (Demerouti et al., 2001: 501). With this definition, resources are important both for their ability to mitigate job demands as well as to help achieve positive personal and organizational outcomes. Looking to the previous models, the resources construct would include the control of the DCM and the rewards of the ERI.

Under the JD-R model, demands exhaust the mental and physical resources of an employee, potentially leading to exhaustion and health problems (Bakker & Demerouti, 2007; Demerouti et al., 2001) and are seen as the most crucial predictor of job strain (Bakker, van Veldhoven & Xanthopoulou, 2010). Additionally, job resources are the most crucial driver of motivation, and can lead to high work engagement, low cynicism and good performance (Bakker & Demerouti, 2007). The model also assumes an interaction effect such that the highest levels of strain and the lowest levels of motivation would be found in a situation with high demands and low resources.

The stress literature may also have some interesting effects on my job demands conceptualization. In general stressors are "stimuli that induce the stress process" (Podsakoff et al., 2007: 439).That process creates outcomes of strain including

exhaustion and depression (Jex, 1998). From a job demands perspective, while a demand might become a stressor, an employee given time to recover from high demands will be better able to mitigate such stressors' effects (Meijman & Mulder, 1998). When demands become stressors, they may lead to strains, including anxiety, exhaustion, depression and burnout (Jex, 1998). Just as the JD-R model suggests that there are elements of the job that make it harder or easier, the stress literature suggests that there are stressors that can engage or discourage. Challenge stressors are aspects of a job that managers might see as obstacles to be overcome in order to succeed in tasks and grow personally and professionally. These include things such as number of projects to attend to, time pressures and responsibility (Cavanaugh et al., 2000). Cavanaugh and colleagues felt there were also hindrance stressors, demands which prevented personal growth and task success. These demands include such things as internal politics, indefinite job requirements and lack of job security. These differing types of stressors have different effects on the employees perceiving them with hindrance stressors increasing turnover and turnover intentions while decreasing job satisfaction and performance whereas challenge stressors had the opposite effect (Cavanaugh et al., 2000; LePine et al., 2005; Podsakoff et al., 2007).

Further, there may be a connection between types of stressors and motivation. LePine and colleagues (2005) suggested that challenge stressors may be related to high motivation because people believe there to be a relationship between the effort expended on the various tasks and positive outcomes from these tasks. However, hindrance stressors decrease motivation because people do not perceive there being means of solving the issue. Because an individual does not see a solution, they will see

little relationship between exerting effort and successful outcomes so will therefore have little motivation to exert effort to deal with these stressors.

While I have addressed some of outcomes found for each model, I would like to highlight certain outcomes of excessive job demands important to the present study of executive job demands. First is burnout. Employees experiencing burnout experience emotional exhaustion, depersonalization and reduced personal accomplishment (Halbesleben & Buckley, 2004; Maslach, 1982). With emotional exhaustion, employees' emotional resources are depleted and they often feel they can give no more to their job. Depersonalization is a response to this exhaustion whereby employees detach from their job and begin feeling uncaring towards their job, performance and individuals associated with the job. Reduced personal accomplishment refers to an employee's personal perception that he or she is not as capable as performing well at a job as they once could. From a JD-R perspective, high demands affect burnout by leading to emotional exhaustion while resources help motivate employees and prevent them from experiencing the depersonalization element of burnout (Demerouti et al., 2001). Burnout can lead to negative consequences for the organization, including increased turnover/turnover intention (Drake & Yadama, 1996; Geurts et. al , 1998; Koeske & Koeske, 1993) and lowered job performance (Wright & Bonett, 1997; Wright & Crapanzano, 1998).

One possible reaction to high demands is utilizing a performance-protection strategy wherein an individual avoids serious disruption to performance in a task at greater cost to activities that are less relevant to task performance (Hockey, 1993). These can include affect, emotional stability and autonomic and endocrine activation.

As an adjustment, an individual might make changes to their task strategies. Importantly, under highly demanding conditions, an individual might narrow the focus of their attention and be more selective in the information they pay attention to (Broadbent, 1971; Hockey, 1979). Further, if such demands cause an individual to be exhausted, they may make more risky choices and exhibit behaviors that require less effort (Holding, 1983).

Finally, while much of my discussion has focused on the negative impacts of job demands, there may be a relatively positive effect of demands. Under activation theory, (Gardner, 1986; Gardner & Cummings, 1988), a task that engages neural activity (activation level) above or below an individual's usual level of activity has the effect of gradually decreasing both affect and performance of the task. The degree to which a given job is demanding is seen as increasing the worker's activation level. As that activation level raises to the individual's usual level, performance increases up to the point where the activation level surpasses the normal activation level, at which point performance decreases (Gardner & Cummings, 1988; Janssen, 2001). This relationship also follows achievement motivation theory, which would suggest that high achievers set moderate, yet challenging goals for themselves (McClelland, 1962, 1976). There may be other interactions with the motivation level of the employee. If they are given tasks which are challenging but are seen as achievable such that there is a perceived relationship between effort and outcome, performance will increase (LePine et al., 2005), but as the difficulty of the challenges themselves increase the outcomes may decrease (Ganster, 2005). Thus, there is an inverse-U shaped relationship between demands and performance (or as Ganster (2005) described, the

appearance of a inverse-U as performance increases due to activation, but decreases due to challenge difficulty).

Executive Job Demands

Executive job demands, as described by Hambrick et al., (2005a), can simply be looked at as "job demands at the executive level" (Hambrick et al., 2005a: 473), but more formally as "the degree to which a given executive experiences his or her job as difficult or challenging" (473). Drawing from the upper echelons perspective, the focus is put on the demands on executives because of the heightened effect their decisions have on the firm (Carpenter et al., 2004). Hambrick et al. (2005a) proposed that the demands felt by top managers could be traced to objective constraints the job (task challenges), demands for a given level of profitability (performance challenges) and the personal motivation of the manager (executive aspirations).

Task challenges acknowledge that the demands on a given manager are higher or lower given the environmental or organizational constraints with which that manager must deal (Hambrick et al., 2005a). It is possible that the structure of the industry, the degree of competition and the demands of buyers and suppliers may make the job of executives in one industry more demanding than in another (Porter, 1980). If a given industry is diverse in terms of suppliers, buyers, products, markets and technical intricacy; is unstable in changes to both its market and technology; and if competition for resources is strong; it adds to the uncertainty in the industry and increases the demands for information processing (Dess & Beard, 1984; Sharfman & Dean, 1991). The resources contained in a firm differ from organization to organization

(Barney, 1991), creating different levels of demands given the structure of said firm. A manager of a firm with greater levels of slack will have a less demanding time adapting to challenges than one with lower levels of slack (Bourgeois, 1981; Sharfman, Wolf, Chase & Tansik, 1988). The support of an effective management team may make decision making easier than a CEO working with less support from his or her TMT (Hambrick & Mason, 1984). A firm may overdiversify, making it more demanding to control all the disparate businesses within the corporation (Grant, Jammine & Thomas, 1988). The more challenging the external environment and the organizational structure, the more demanding the manager's job will be. Alternately, in the JD-R view, the more demands and fewer resources a job has, the more strain it will cause.

Performance challenges come out of the external demands from the owners of the firm for a given level of performance (Hambrick et al., 2005a). While demand for greater and greater returns is likely universal, the demands are seen as rising as a result of the voice that the owners have. Under strong agency conditions, especially strong control conditions (Fama & Jensen, 1983; Jensen & Meckling, 1976), the demands from owners will likely be very salient to managers. If the board of directors has many outsiders (Fama, 1980) who hold equity interests in the firm (Morck, Scleifer & Vishny, 1988) and are not under the influence of the CEO (Westphal & Zajac, 1994), the board is seen as putting more pressure from ownership on the managers to perform. Further, large blockholders, such as institutional owners, may be more likely to closely monitor managerial behavior and influence their direction (Useem, 1993). Greater ownership pressure to perform leads to greater demands on a top manager.

Executive aspirations refer to the motivations of the top manager to achieve a given level of performance (Hambrick et al. 2005a). This internal motivation might be based upon their need for achievement, their "degree of striving to meet standards of excellence, to accomplish different tasks and to achieve success" (McClelland, 1962, 1976; Miller & Droge, 1986: 541). Such achievers take responsibility for getting things done. Reward seeking behaviors may also affect the aspirations of an executive. With compensation closely tied to firm goals, the manager will strive to achieve those goals to obtain the reward (Fama & Jensen, 1983). Looking to the ERI model (Siegrist, 1996), a desire to achieve could lead an individual to overcommit and put too much of oneself into the task (Siegrist, 1999). Further, if managers are taking responsibility largely upon themselves for firm success and have the additional pressures to obtain their rewards, it is possible that in objectively demanding situations this added pressure from their need for achievement and reward would exacerbate the demands placed by environment, organizational structure and ownership.

Of primary interest to this study is the effect high job demands have on decision making. For effective decisions to be made, managers must engage in a sensemaking process (Weick, 1979). This process is made up of scanning (information gathering), interpretation and subsequent action based on the information and its interpretation (Daft & Weick, 1984; Thomas, Clark & Gioia, 1993). Scanning involves looking to both the external environment and the internal functions of the organization to identify important information that may affect the future functioning of the firm. Oftentimes, managers are inundated with more information than is useful (Mintzberg, 1973) and must find ways to filter such information (Hambrick & Mason, 1984; Hambrick &

Snow, 1977). These multiple fallible indicators of the business environment and the organization are viewed through the lens of the manager's cognitive bases and values to limit the information they attend to (Brunswik, 1956; Hammond, 2000). Interpretation allows comprehension of the information gathered during the scanning process (Thomas et al., 1993) and involves fitting the information into some structure for understanding and action. By gathering relevant information for a given course of action and relying upon analysis of said information, the decision made is seen to be procedurally rational (Dean & Sharfman, 1993)

Demands brought on by dynamic and complex systems may overwhelm executives (Munyon, Summers, Buckley, Ranft & Ferris, 2010) negatively affecting the sensemaking process. Important information may be passed over, and top managers may subsequently make decisions in a less procedurally rational way, which may lead said decisions to be less effective (Dean & Sharfman, 1996). Under conditions with high demands, managers may narrow the focus of their attention and become even more selective with regards to the information to which they pay attention (Broadbent, 1971; Hockey, 1979). In this way, demands may narrow the lens through which they scan the environment and the organization for information relevant to future action. They may ignore vital fallible indicators (Hammond, 1996), not gather all the relevant information (Dean & Sharfman, 1993) and make less effective decisions (Dean & Sharfman, 1996).

There is a competing consideration of the effects of executive job demands on decision processes. Ganster (2005) notes that while narrowing attention and information gathering does occur in situations of high job demands, such narrowing

does not necessarily affect decision quality. Rather, people may adaptively respond and make the decision process more efficient (Payne, Bettman & Johnson, 1988; Raby & Wickens, 1994), and may even eliminate negative biases (Svenson & Benson, 1993). While these arguments are compelling, this dissertation sides with the argument that even with strong adaptive capacity, individuals tend to perform better under less difficult circumstances (Hambrick, Finkelstein & Mooney, 2005b).While individuals can work around high demands, they still cannot completely compensate for their existence.

The overall model this dissertation examined is broken into two studies. Study 1 (shown in Figure 2) looks at the direct and mediated relationships between executive job demands and firm outcomes. Study 2 (shown in Figure 3) examines the potential for a moderating role for job demands between managerial cognitions and strategic outcomes. With the underlying executive job demands construct outlined, I will now propose several hypotheses to test this model. While I use the Hambrick and colleagues' nomenclature of executive job demands, these are assumed to be the demands on the CEO.

FIGURE 2
Study 1: Executive Job Demands' Effect on Firm Outcomes

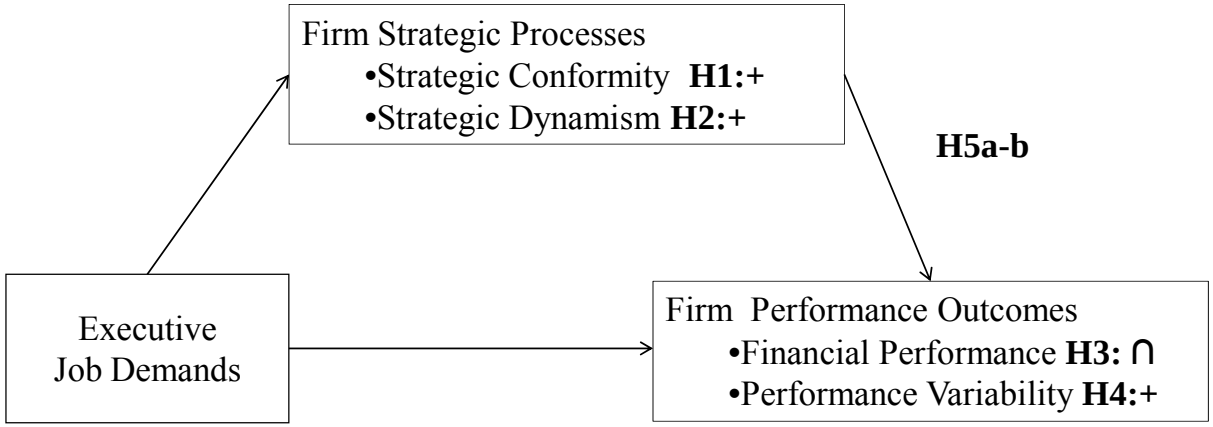
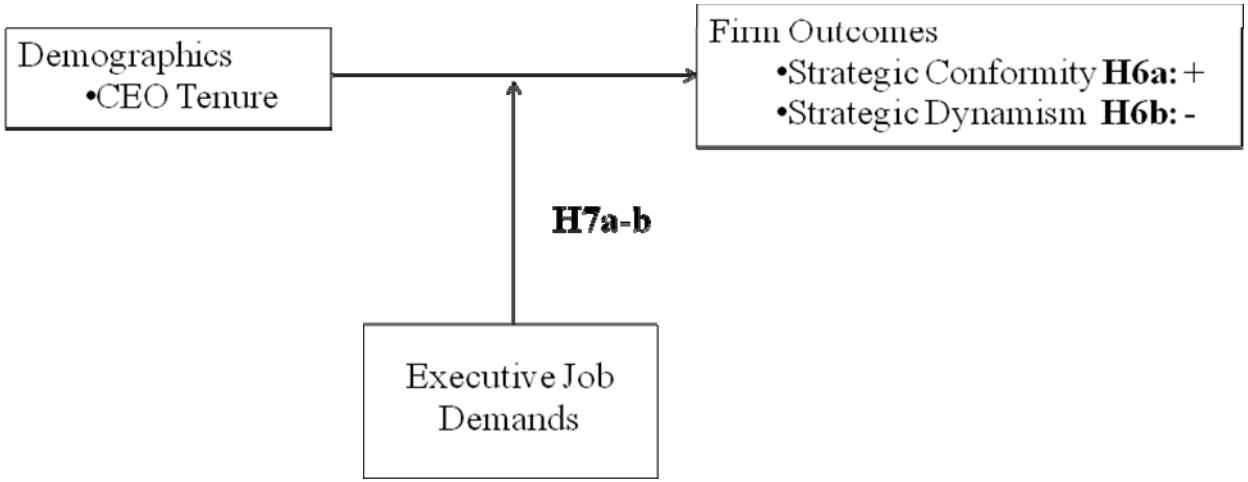


FIGURE 3
Study 2: Executive Job Demands' Moderating Role Between CEO Cognitions and Strategic Outcomes



Hypotheses

Heightened job demands may approximate the conditions of uncertainty (Hambrick et al., 2005a). Uncertainty can lead a manager narrow the lens through which they perceive the environment and focus on indicators of the behavior of other firms with the intent of mimicking their strategy (DiMaggio & Powell, 1983) rather than more objectively perceiving the indicators of the state of the environment and organization in order to find a strategy more customized to the focal firm. The decision of which firms to mimic may be driven by geographic closeness (Galaskiewicz & Wasserman, 1989), prestige or visibility (Haveman, 1993). However, these decisions may not be made with full consideration of the appropriateness of such behavior for the focal firm (Hambrick et al., 2005; Haveman, 1993), potentially creating a less effective outcome for the firm than if a fully rational decision had been reached.

Managers will take this route because of the easy defensibility of such actions. Lack of legitimacy can lead a firm to fail (Singh, Tucker & House, 1986). To achieve this legitimacy, firms tend to imitate the behavior of others. This imitation can be easily defended to stakeholders because the actions imitated have led to success elsewhere. A CEO focused on the ongoing survival of his or her firm and with a narrowed lens due to excessive job demands will be more likely to scan for information on the best practices of others and implement them because it requires less information, and is seen as successful. By performing such mimicry, the firm's strategy can be seen as conforming to that of the rest of the industry.

H1-Executive job demands are positively related to strategic conformity.

At the highest level of demands, narrowed scanning may transition to complete desperation (Hambrick et al., 2005a). In this case, the lens goes from being narrowed to being distorted. Managers, regardless of the actual threat being faced, may begin to perceive all the fallible indicators of the environment as a threat. Given this threat interpretation, Staw and colleagues' threat-rigidity response (1981) may lead the firm to behave rigidly and with a greater focus on its prior behavior. This response, as with many of the hypothesized responses, is a result of a narrowing of the information processing. However, lack of new initiatives and rigid adherence to repeating prior actions is not the only possible response when demands are so high that they resemble a threat. If managers perceive every indicator as a threat, they will begin framing every decision in terms of being a loss situation. Prospect theory would suggest that if every decision is seen as a potential loss, managers would be more likely to seek riskier alternatives in an attempt to avoid such losses (Khaneman & Tversky, 1979; Tversky & Khaneman, 1981). This outcome has somewhat been shown in the job demands literature, with the suggestion that under extreme demands that have fatigued the individual, they are more likely to make risky choices (Holding, 1983).

Research has suggested that both perspectives are right. Hambrick and D'Aveni (1988), in a study of firms as they went bankrupt, found that a certain number of firms ceased introducing new strategic initiatives, a problematic response given that oftentimes adaptation to a new threat is appropriate (Staw et al., 1981). Other firms engage in domain changing, highly risky initiatives. The full finding in Hambrick & D'Aveni is that firms under high pressure seem to vacillate between the two extremes, whereby one year they make extreme decisions engaging in many initiatives and the

next they make no changes (Hambrick & D'Aveni, 1988; Hambrick et. al., 2005a). Applying these findings to the current case, as the demands on managers increase, the managers will begin to assess all or most fallible indicators as representing threats. As a response to these demands, they will either make sweeping changes to strategy as a risk-taking behavior to avoid losses, or they will be overwhelmed and engage in no changes to strategy. From year to year, these managers under high demands will vacillate from one extreme to the other. Such extreme and vacillating behaviors might be conceptualized as higher degrees of strategic dynamism, or degree of change in strategy (Finkelstein & Hambrick, 1990).

H2-Executive job demands are positively related to the amount of change in a firm's strategy (strategic dynamism).

As suggested above, activation theory would suggest that if the activation level associated with a given task is below or above an individual's normal activation level, performance will go down (Gardner, 1986). Since job demands are expected to increase the activation level in an individual (Gardner & Cummings, 1988), job demands will increase the activation level and subsequent performance until they surpass the individual's normal activation level, at which point performance would decrease. It has also been argued that high achievers also tend to avoid high or low challenges, focusing instead on more moderate challenges (McClelland, 1962, 1976). This would suggest that achievement would be maximized at the moderate challenge or moderate demand level. Prior research has suggested that performance of a given task has been shown to have an inverted-U shaped relationship with job demands (Janssen, 2001).

While there are compelling arguments for a direct inverse-U shaped relationship between demands and performance, there is an opposing hypothesis provided by the stress literature. Provided that the stressors or demands are challenge based, seen as overcomable and such that extra effort will lead to superior performance, it might be argued that there would be a direct relationship with stressors and performance such that challenge stressors/demands would have a positive relationship with performance (LePine et al., 2005). However, there is the reality that tasks with a large number of stressors/demands are objectively more difficult. Objectively more difficult tasks tend to have less positive results (Ganster, 2005) and so even if the demands themselves have a positive outcome on the efforts of the top managers, the outcomes are likely to be less positive than those of easier tasks. The interaction of these two effects gives the impression of a inverse-U shaped relationship.

Given the impact top managers have on strategy and therefore subsequent firm performance, it may be that these demands-performance relationships will hold at the firm level because of the CEO's performance. Therefore, when demands are very low or very high financial performance is likely to be low, but performance is likely to grow. This growth will continue as demands increase up to some inflection point and then decrease as demands pass that inflection point.

H3-Executive job demands have an inverse-U shaped relationship with financial performance.

Given the time and information processing limitations on an individual under increasing demands, performance may not be stable, but rather will vary wildly from year to year. As previously argued, high demands may constrict the lens and cause

managers to ignore important fallible indicators (Hammond, 1996), leading them to gather information that omits relevant facts and make less procedurally rational (and therefore less effective) decisions (Dean & Sharfman, 1993, 1996).Incomplete information might lead to making a bad choice in one year, but in another year, the indicators attended to might lead to a high performing choice, even if only by luck (Hambrick et al, 2005a). In this situation, while performance might not be uniformly bad, it will be fairly unstable. Conversely, a manager that is able to make procedurally rational decisions based upon relevant information would tend to make more uniformly effective decisions.

Prior economics research on group decision making has considered how "diversification of opinions" tends to reduce variability of performance (Adams, Almeida & Ferreira, 2005; Cheng, 2008; Sah & Stiglitz, 1986, 1991). As more opinions are voiced, bad projects are more likely to be rejected as bad. However, good projects are also less likely to be accepted as good if there are conflicting opinions. Projects selected will tend to be more uniformly performing because there has been consensus about the rightness of the decision. This research has also shown that when managers make decisions on their own and do not seek consensus, the performance outcomes tend to vary more (Adams et al., 2005). A manager under high demands will likely not be able to spend as much time seeking consensus amongst constituents. Rather, they will have to minimize debate and will not be able to take advantage of the "diversification of opinions." Taken together, these arguments suggest that job demands will lead to more variable financial performance.

H4-Executive job demands are positively related to performance variability.

The complexity of real organizations may not be captured by the model thus far described. The previous research would seem to suggest a direct effect of job demands on performance (Janssen, 2001; Wright & Bonett, 1997; Wright & Cropanzano, 1998). However, performance is also the outcome of the strategic direction of the firm. To better examine how exactly executive job demands might affect firm performance, an alternate explanation, that of a mediated relationship, may better explain these relationships. It may be fruitful to conceptualize the effect of job demands on firm performance as mediated through the effects that job demands has on firm strategy (in this dissertation, dynamism and conformity). Firm performance outcomes are reflections of the strategic decisions made, thus it is possible that the executive's job demands will have an effect on performance due to their effect on strategic outcomes (dynamism and conformity). Therefore, how dynamic a firm's strategy and how similar the firm's strategy is to that of the rest of the industry mediate the relationship between executive job demands and financial performance.

H5a -The relationship between executive job demands and financial performance is mediated by strategic conformity.

H5b-The relationship between executive job demands and financial performance is mediated by strategic dynamism.

One of the primary arguments used thus far is that high job demands cause a narrowing the lens through which the top manager perceives the external environment. While this narrowing may lead a manger to rely more heavily on the best practices of others, it may also lead that manager to rely more heavily on his or her own past experiences (Hambrick et al. 2005a). The upper echelons perspective does suggest that

there is a relationship between prior experiences of managers (viewed through proxies such as functional background, international experience and less direct indicators such as age and tenure) and strategic outcomes (Carpenter et al., 2004; Hambrick & Mason, 1984). If job demands were to narrow the lens through which the top manager perceives the environment such that he or she focuses primarily upon fallible indicators that mirror previous situations, this relationship between that manager's past experience (measured by demographic proxies) and strategic outcomes may itself become strengthened.

To examine this potential moderating relationship, I will adapt a previous study into how top manager demographics (proxying for their prior experiences [Hambrick & Mason, 1984]) relate to the strategic outcomes (strategic dynamism and strategic conformity) of this dissertation. Prior research has suggested that top management teams (TMT) that have worked in an organization for a long time develop habits that lead to them being less willing to institute change (leading to less strategic dynamism) and more unlikely to adopt novel or unique strategies (leading strategy to mirror that of the rest of the industry, e.g. strategic conformity) (Finkelstein & Hambrick, 1990[3]). While no research has directly examined how only the CEO's tenure is related to strategic dynamism and strategic conformity, it seems likely that these relationships found for the group will hold for the individual. A CEO in an organization for a long time would develop strong habits that would lead to strategies that are less dynamic and more strategically in line with other firms in their industry (strategic conformity).

[3] Finkelstein and Hambrick (1990) tested how managerial discretion moderated the relationship between TMT tenure (proxying for managers' prior experiences) and the strategic/performance outcomes of strategic dynamism, strategic conformity and performance conformity. Using an adapted form of this test seems appropriate given that executive job demands have been postulated to be as important a modifier of demographics-to-firm-outcomes relationships as managerial discretion (Hambrick, 2007).

H6a-CEO tenure is positively related to strategic conformity.

H6b-CEO tenure is negatively related to strategic dynamism.

One of the outcomes of habitual behavior by executives is a restriction of information processing. By spending a long time in an organization, managers develop a set group of responses to a given stimulus, do not look beyond previous sources for information and therefore rely more on their past experiences. Given that this effect is, in part, driven by a restriction in the indictors they assess, a further restriction (driven by executive job demands) may intensify this relationship. Therefore, executive job demands are expected to moderate the proposed relationship between CEO tenure and the outcomes for strategic conformity. Conversely, if high demands are distorting the lens, encouraging managers to perceive the multiple fallible indicators as a threat and therefore triggering either the threat-rigidity response (Staw et al., 1981) or causing managers to engage in more risk seeking behavior (Khaneman & Tversky, 1979; Tversky & Khaneman, 1981) this may overcome their existing habitual preferences. While long tenured managers may prefer to continue their existing courses of action, reducing the dynamism of their strategy, the perception of threat created by increasing demands might weaken those preferences. The resulting outcome would be a lessening of the negative relationship between managerial tenure and the amount of change (dynamism) in their strategies.

H7a-Executive job demands moderate the relationship between CEO tenure and strategic conformity such that as job demands go up the relationship will be more strongly positive.

H7b-Executive job demands moderate the relationship between CEO tenure and strategic dynamism such that as job demands go up the relationship will be less strongly negative.

This chapter has used upper echelons thinking and job demands modeling to establish the construct of executive job demands, created through the task challenges, performance challenges and individual aspirations a manager faces. These demands are expected to potentially have direct, moderating and mediated effects on strategic processes, firm performance and the turnover of chief executives. With my hypotheses stated, I will now discuss how I plan to operationalize my constructs and test my hypotheses.

Chapter 3

Methods

In this chapter, I discuss the methods I used to test the hypotheses proposed for the effects executive job demands have with regards to strategic processes and firm performance. I describe the sample used. I then describe how I measure my constructs for the dependent, the independent and the control variables plus the sources of data for these measurements. Following the operationalization of my constructs, specific consideration of the steps used in the construction of my factors is discussed. Finally, I discuss the procedures which I used in testing my hypotheses.

Sampling Frame

This dissertation develops a means of estimating executive job demands using publically available data, meaning that one requirement for a data sample is that the firms within it must be publically traded. Further, in an attempt to avoid an effect of the economic downturn on the results, 2005 is the year from which the sample was drawn. Because some measures are being taken at t+1 and t+2, setting the year as 2005 should avoid most, if not all, of the effects of the recent economic downturn. Therefore, this dissertation drew a random sample of 200 firms from the S&P 500 with 2005 as the focal year. This was accomplished by using Excel's random number generator to give each company in the S&P 500 a unique number and then going sequentially from lowest number up until a sample of 200 companies was drawn. This sample includes 84 four-digit NAICS industries (16 two-digit NAICS industries) as listed in Table 1.

TABLE 1

Industries Contained in Sample

NAICS-4	Industry Name	# of Firms
2111	Oil and Gas Extraction	2
2121	Coal Mining	2
2122	Metal Ore Mining	1
2123	Nonmetallic Mineral Mining and Quarrying	1
2131	Support Activities for Mining	2
2211	Electric Power Generation, Transmission and Distribution	14
2212	Natural Gas Distribution	2
2361	Residential Building Construction	1
2371	Utility System Construction	1
2379	Other Heavy and Civil Engineering Construction	1
3112	Grain and Oilseed Milling	3
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	1
3115	Dairy Product Manufacturing	1
3116	Animal Slaughtering and Processing	1
3118	Bakeries and Tortilla Manufacturing	1
3119	Other Food Manufacturing	2
3121	Beverage Manufacturing	1
3122	Tobacco Manufacturing	2
3152	Cut and Sew Apparel Manufacturing	1
3211	Sawmills and Wood Preservation	1
3221	Pulp, Paper, and Paperboard Mills	4
3222	Converted Paper Product Manufacturing	2
3241	Petroleum and Coal Products Manufacturing	6
3251	Basic Chemical Manufacturing	3
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	1
3254	Pharmaceutical and Medicine Manufacturing	10
3255	Paint, Coating, and Adhesive Manufacturing	1
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	3
3259	Other Chemical Product and Preparation Manufacturing	2
3261	Plastics Product Manufacturing	1
3313	Alumina and Aluminum Production and Processing	1

TABLE 1 (cont.)
Industries Contained in Sample

NAICS-4	Industry Name	# of Firms
3324	Boiler, Tank, and Shipping Container Manufacturing	1
3329	Other Fabricated Metal Product Manufacturing	1
3331	Agriculture, Construction, and Mining Machinery Manufacturing	3
3332	Industrial Machinery Manufacturing	2
3333	Commercial and Service Industry Machinery Manufacturing	2
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	1
3339	Other General Purpose Machinery Manufacturing	1
3341	Computer and Peripheral Equipment Manufacturing	5
3342	Communications Equipment Manufacturing	3
3344	Semiconductor and Other Electronic Component Manufacturing	8
3345	Navigational, Measuring, Electro-medical, and Control Instruments Manufacturing	8
3353	Electrical Equipment Manufacturing	1
3361	Motor Vehicle Manufacturing	1
3363	Motor Vehicle Parts Manufacturing	1
3364	Aerospace Product and Parts Manufacturing	4
3379	Other Furniture Related Product Manufacturing	1
3391	Medical Equipment and Supplies Manufacturing	4
3399	Other Miscellaneous Manufacturing	1
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	1
4242	Drugs and Druggists Sundries Merchant Wholesalers	2
4413	Automotive Parts, Accessories, and Tire Stores	1
4431	Electronics and Appliance Stores	1
4441	Building Material and Supplies Dealers	1
4451	Grocery Stores	2
4461	Health and Personal Care Stores	2
4481	Clothing Stores	2
4529	Other General Merchandise Stores	3
4532	Office Supplies, Stationery, and Gift Stores	2

TABLE 1 (cont.)
Industries Contained in Sample

NAICS-4	Industry Name	# of Firms
4831	Deep Sea, Coastal, and Great Lakes Water Transportation	1
4862	Pipeline Transportation of Natural Gas	1
5111	Newspaper, Periodical, Book, and Directory Publishers	3
5112	Software Publishers	6
5152	Cable and Other Subscription Programming	1
5171	Wired Telecommunications Carriers	1
5172	Wireless Telecommunications Carriers (except Satellite)	1
5179	Other Telecommunications	1
5182	Data Processing, Hosting, and Related Services	1
5191	Other Information Services	3
5222	Nondepository Credit Intermediation	1
5231	Securities and Commodity Contracts Intermediation and Brokerage	2
5232	Securities and Commodity Exchanges	1
5239	Other Financial Investment Activities	2
5241	Insurance Carriers	18
5311	Lessors of Real Estate	3
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	1
5415	Computer Systems Design and Related Services	4
5418	Advertising, Public Relations, and Related Services	2
6214	Outpatient Care Centers	1
6215	Medical and Diagnostic Laboratories	1
6221	General Medical and Surgical Hospitals	1
7211	Traveler Accommodation	2
7221	Full-Service Restaurants	1
7222	Limited-Service Eating Places	1

Measures

Dependent Variables

Strategic Conformity. This measure examines how a firm's strategy with regards to a number of key indicators of resource allocation is similar to the rest of their

industry. These indicators include advertising intensity (advertising expense/sales); research and development intensity (R&D expense/sales); selling, general and administrative expenses/sales; inventory levels (inventories/sales); leverage (debt/equity); and equipment newness (net plant and equipment/gross plant and equipment)(cf. Finkelstein & Hambrick, 1990; Westphal, Seidel, & Stewart, 2001; Zhang & Rajagopalan, 2010). Each indicator is standardized by industry, and the absolute difference between a firm's score and the average industry score for each given indicator is calculated[4]. These absolute distances are multiplied by minus 1 to convert the meaning into "conformity" (or the "absence of differences from competitors" [Finkelstein & Hambrick, 1990: 492]). Finally, a strategic conformity score is created by summing the indicators. This data was gathered through Compustat.

There is considerable missing data for advertising expense and R&D expenses. In some of the industries in my sample no firms reported that data at all. This was also a problem for Finkelstein & Hambrick (1990). I applied their solution for the conformity and dynamism measures by creating a Strategic Conformity 1 measure which included advertising intensity and research and development intensity with selling, general and administrative expenses/sales, inventory levels, leverage and a Strategic Conformity 2 measure that excluded advertising and R&D intensity. Finkelstein and Hambrick did find similar results for the two measures. There were only 59 observations for Strategic Conformity 1, and the full 200 for Strategic Conformity 2.

Strategic Dynamism. Following prior research (Chatterjee & Hambrick, 2007), two measures will be used to assess the degree of change in a firm's strategy. The first

[4] This industry average was the average of all firms with data in the Compustat database for a given industry.

measure uses the same indicators of resource allocation used in strategic conformity (Finkelstein & Hambrick, 1990). Unlike strategic conformity, instead of comparing the firm's values against that of the industry, the absolute change of these indicators for the firm will be calculated between the focal year (*t*) and the prior year (*t*-1). These indicators will then be standardized (mean = 0; standard deviation = 1) and summed to create a composite measure of dynamism. This data was gathered from Compustat. As with strategic conformity, dynamism was gathered as a Dynamism 1 measure (including advertising intensity and R&D intensity) and a Dynamism 2 measure (which excluded advertising intensity and R&D intensity). There were 54 observations for Dynamism 1 and the full 200 for Dynamism 2.

The second indicator is focused on the number of businesses a firm added or dropped from one year to another. Thus the measure is the sum of all four digit NAICS industries added or dropped between the focal year (t) and the year before (t-1) (Chatterjee & Hambrick, 2007). Any change represented a score of one, such that a firm that exited one business and entered two others would represent a score of three. This data was gathered from Ward's Business Directory.

Financial Performance. Given the inherent weaknesses in any one given measure of performance (Venkatraman & Ramanujam, 1986), four measures were used: return on assets (net income/total assets), return on equity (net income/shareholders equity), return on sales (net income/total sales) and Tobin's *q*. Tobin's *q* is the sum of firm market value (share price multiplied by outstanding shares), the book value of long-term debt, the book value of preferred stock and the book value of net current liabilities divided by the total asset value (Chung & Pruitt, 1994). This data was

gathered at time *t*+2 since performance outcomes are expected to flow out of the strategic behavior. The data came from the Compustat database.

Performance Variability. As the measure of how much the firm's performance varies from year to year, prior literature (Adams et al., 2005; Cheng, 2008) suggests that variability in performance can be measured by taking the standard deviation of measures of firm performance over a sample period. I took measures of ROA, ROE ROS and Tobin's Q beginning at time *t* (2005) and through to *t*+3 (2008).This data was gathered from the Compustat database.

Independent Variables

Executive Job Demands. Conceptually, executive job demands were proposed to come out of the task challenges (elements of the external environment and the organization), performance challenges (pressures from owners to perform) and the aspirations of the individual executives (Hambrick et al., 2005a). To measure this construct, individual factors were created from observable indicators of those three elements. Greater discussion of the factor development process can be found below.

Task Challenges. Task challenges should begin with elements of the external environment. Hambrick et al., (2005a) suggested considering the effects of aspects of environmental complexity; which I conceptualized as those aspects mentioned by Sharfman and Dean (1991), Kotha and Orne (1989), and Dess and Beard (1984) (see Cannon and St. John, 2007 for a review). However, these measures are not appropriate given my sample. The reporting of information in the Economic Census for some industries differs from that of others. While this study benefits from the breadth of 2-digit and 4-digit NAICS industries considered due to their diversity and theoretical

greater generalizability, it is limited in data available from the economic census for certain industries. As a task challenge measure not completely contained within the organization itself, I consider the market share of the firm in its primary industry. If a firm has a large share of the market in its primary industry, it would be better able to exploit economies of scale and potentially better manage rivalry (Porter, 1980). To obtain this data, I began by gathering the total industry sales figures from the 2007 United States Economic Census at the NAICS 4-digit level. I then used the Compustat segments data for the firms in my sample to first establish which 4-digit industry the majority of their business was in and then to gather the firm's sales revenue figures for that industry. I then divided the firm's sales in that industry by the total industry sales for the market share measure.

Considering the elements of task challenges solely presented by internal aspects of the organization, the next measure is that of organizational slack. The availability of discretionary slack allows a manager to more easily respond to external or internal pressures for change, lessening the demands on a manager (Bourgeois, 1981; Sharfman et al., 1988). Slack was measured through two ratios: the quick ratio ((Current Assets – Inventories)/Current Liabilities) and the current ratio (Current Assets/Current Liabilities). Because greater slack would be seen as decreasing job demands, each ratio was inverted (1/ratio) to reverse code the measure. These data was gathered via Compustat.[5]

[5] A number of firms from the finance and insurance industry (NAICS 52) did not have data entered for current assets or current liabilities in Compustat. To gather this data by hand, I consulted with a certified public accountant on the SEC rules for balance sheets from financial institutions (FASB Reg SX- Rule 9-03) in order to properly identify the firms' current assets and liabilities.

The next organizational constraint considered that may increase job demands is that of diversification. Given that the requirements for control structure and information processing increase as a firm becomes more diversified (Hill & Hoskisson, 1987), it stands to reason that managing a more diversified firm would be a more demanding job. This dissertation used the entropy measure of diversification (Palepu, 1985). The measure is as follows:

$$DT = \sum_{i=1}^{N} P_i \ln(1/P_i)$$

$\boldsymbol{DT}$ = Total Diversification
$\boldsymbol{P_i}$ = Share of the ith segment in the total sales of the firm
N = Number of industry segements a firm operates in

This data was collected from Compustat's Segments database.

Productivity is the next organizational constraint of interest. If the firm is experiencing productivity issues, it may be a sign of managers dealing with a lethargic workforce (Mintzberg, 1979). When dealing with such a lethargic workforce, a manager must exert more effort to motivate them. Therefore, the job becomes more demanding. Productivity was measured by the ratio of firm income to number of employees. Since high productivity is thought to reduce demands, the measure was reverse coded by inverting the ratio (1/ratio)[6]. This data was gathered from Compustat.

The actual jobs performed by the CEO may affect the task challenges they face. Specifically, if a CEO is also the chairperson (CEO duality) and does not have a second in command responsible for internal operational activities (COO/President), the

[6] Seven of the firms in the sample posted a net loss in 2005.Inverting these negative productivity ratios gave some of the lowest scores (which would erroneously suggest low demands) for those firms. To avoid this issue, those seven firms were all given a score of 1.

demands on an individual may increase. Therefore CEO duality was measured as a dichotomous variable in the following way: 1=CEO is Chairperson; 0=CEO and Chairperson are separate. Presence of COO/President was coded in this way: 1=No other person with title of COO or President; 0=Person other than the CEO with title of COO or President. This data was gathered from the firm's proxy statements.

As the example of William Ford Jr. showed, the strength of a TMT can increase or decrease the demands on a CEO. Organizational outcomes are seen as being affected by not only a CEO, but the team around that CEO (Bantel & Jackson, 1989; Carpenter et al., 2004; Hambrick 2007). Therefore, as a final measure of the task challenges facing CEOs, I included measures of functional background heterogeneity, team tenure and firm tenure. When identifying members of the top management team, I looked to the firm's 10-K filing from fiscal year 2005 for their listed executive officers. In extreme cases where more than 20 individuals were listed, I focused only on those managers of SVP level or above (Carpenter et al., 2004). The TMTs in the sample had an average team size of 9.25 members. From there I focused on functional background heterogeneity. A manager's functional background, their experience in some primary part of the business, has been suggested to shape the way they perceive and react to an issue (Carpenter & Fredrickson, 2001; Hambrick, Cho & Chen,1996; Hambrick and Mason, 1984). If managers have similar backgrounds, they would bring the same frame of reference to a issue, whereas functional background heterogeneity can create more diversity of opinion in decision making, leading to more comprehensive and extensive decisions (Miller, Burke & Glick, 1998). In high demand situations, a team of managers with more diverse experiences can bring that diversity to assist in sensemaking to a

CEO whose lens has either been constricted or distorted due to other demands. To measure this I looked at the biographies of the firm's named executive officers in Capital IQ[7]. I then identified their earliest work experience. This experience was then put into one of nine categories suggested by the literature: marketing; distribution; sales; research and development; production; engineering; finance and accounting; law; or general[8] (Carpenter & Fredrickson, 2001; Wiersema & Bantel, 1992). With this categorization of functional backgrounds complete, I then created an index of heterogeneity using Blau's (1977) index, calculated as $1- \Sigma(P_i)^2$, where P_i is the percentage of individuals in the *i*th functional background category.

TMT tenure in firm and tenure on team captures two different knowledge bases. By measuring TMT tenure in the firm, I am establishing the extent to which managers have been able to establish relationships with the pertinent stakeholders as well as have greater understanding of the inner workings and transformation processes of the organization (Hambrick & Fukutomi, 1991). TMT tenure on the top management team expresses the ability to get along with, communicate with and trust fellow team members (Eisenhardt & Schoonhoven, 1990). The number of years each team member had spent in the firm and as a member of the TMT were both collected and the team average of each was used to measure firm and team tenure. It has been argued that long tenured teams become more set in their ways and will make decisions based upon that habitual behavior (Finkelstein & Hambrick, 1990). This measure is being used as a proxy for knowledge-base. While on its own it may have a certain effect, in this context

[7] This data was augmented with data from the 10-K and from Fortune Magazine biographies.
[8] There were a number of HR professionals considered, and they were always considered "General." When deciding how a given job title fit into this coding scheme, the focus was always on the idea of heterogeneity within the firm. Thus the most important part of categorizing these jobs was to put similar job titles together.

it is being seen as a resource (using the JD-R terminology) as a result, teams with high functional background heterogeneity, high firm tenure and high team tenure would be seen as reducing demands, and therefore the inverse (1/measure) of these measures is used.

Performance Challenges. Performance challenges are seen as the demands placed on managers by the owners for a given level of performance. As such, it is thought that with strong agency conditions (i.e. strong monitoring) there will be stronger performance challenges for the executives and therefore stronger job demands. These strong monitoring conditions will be operationalized by the following four indicators. First is the number of outside members[9] of the board divided by total board size (Morck et al., 1989). This is based on the assumption that outside members of the board are expected to challenge the CEOs decisions more than board members working within the company. Second is the number of outside directors appointed before the CEO takes his or her position divided by the total number of outside board members. There is a thought that even though those board members are not part of the management team, they may still feel a sense of indebtedness to the CEO for putting them on the board due to the CEO's influence over the nominating process (Wade, O'Reilly and Chandratat, 1990). Third is the ownership stake of the outside directors which is operationalized by the sum of the outside directors' equity holdings divided by the common shares outstanding. The data for the previous three measures were found in the Riskmetrics database. The common shares outstanding data was gathered through

[9] Riskmetics refers to some board members as "Linked." In these situations, I examined the proxy statements to assess if these board members satisfied the NYSE/AMEX/NASDAQ definitions of "Independent" and categorized them as such.

Compustat. When outside owners have a high equity stake, they become more focused on the interests of the owners, especially the interests of profit maximization (Bergh, 1995; Fama & Jensen, 1983; Johnson, Hoskisson & Hitt, 1993). The final measure is the percentage of institutional ownership data which was found on Capital IQ. Institutional investors tend to be closer monitors of the firm and compel tighter control from the board on the company (Davis & Thompson, 1994).

Executive Aspirations. Executive aspirations, as this dissertation has viewed them, represent internal motivation based upon the manager's need for achievement and their reward seeking behaviors. Therefore, this construct was measured with observable indicators of such cognitions. On the Manifest Need Questionnaire (Steers & Braunstein, 1976) scale for need for achievement, items include such things as "I take moderate risks and stick my neck out to get ahead at work" and the reverse coded "I try to avoid any added responsibilities on my job" (254). To capture the ideas of moderate risk, effort to get ahead and adding responsibilities, the following measures were used. First, as a measure of putting forth effort to get ahead, CEO educational level will be measured using a seven-point scale based on the highest degree earned (Datta & Rajagopalan, 1998): 1=high school; 2=some college; 3=undergraduate degree; 4=some graduate school, 5=masters degree; 6=attended doctoral program and 7=doctorate degree. This data was gathered from the Capital IQ biographies of the CEOs with occasional augmentation from Fortune Magazine's biographies. As a measure of adding responsibilities, the age the focal CEO took his or her first job as CEO was divided by the average age of accession to the CEO role in the industry as a means of measuring the striving the individual did to add the responsibilities. This item was then inverted

(1/x) since a smaller value (i.e. younger age of accession) indicates greater aspiration. For the industry comparison, data was gathered on CEOs at the 20 largest (by revenue) firms within their 2-digit NAICS industry. This data was also gathered through the Capital IQ CEO biographies. Finally, as measure of risk seeking behavior, prior involvement with a entrepreneurial start-up was gathered for each CEO: 1=prior involvement with an entrepreneurial start-up; 0=no involvement with an entrepreneurial start up. This data was gathered from Capital IQ's CEO biographies. Very few (13 out of the 200) CEOs had prior entrepreneurial experience. Of those 13, seven were the founders of those firms. At least within the S&P 500, a majority of CEOs appear to have been part of the firm they are leading for a considerable amount of time.

With regards to the reward seeking behavior of top executives, to the degree that the executive is motivated by money and the amount said executive's pay is tied to performance, the higher their aspirations to achieve firm goals (Eisenhardt, 1989; Fama & Jensen, 1983). This was operationalized by first gathering the percentage of incentive pay (yearly incentive bonus) a CEO received out of their target amount of incentive pay authorized[10]. This percentage was then divided by the industry average of the percentage of incentive pay achieved. For the industry comparison, data was gathered on CEOs at the 20 largest (by revenue) firms within their 2-digit NAICS industry. This data was gathered from the firm's proxy statements.

[10] Some firms did not explicitly state the amount of the CEO's bonus target. Those firms that did state a target generally had a target of between 1 and 2 times of base salary. For those firms that did not explicitly state the amount, the base salary of the CEO was entered as the target amount. Following data collection, I ran an ANOVA comparing the stated targets with the unstated targets and found there was a statistically significant difference between the two. Trying different multipliers of base salary used by other firms in the sample (1.1x, 1.25x and 1.5x base salary) I found no significant difference between the stated targets and 1.25 times the unstated targets' base salary.

CEO Tenure. CEO tenure was measured as the total number of years the CEO has spent in the organization. This data was gathered from the Capital IQ biographies of the CEOs.

Control Variables

Firm Size. Size of a firm has been shown to affect performance (Kimberly, 1976). Further, size has been shown to predict strategic activity, suggesting that they are more likely to behave mimetically (Deephouse, 1999; Fligstein, 1991; Westphal et al., 2001), and have difficulties effecting change (Aldrich, 1979; Finkelstein & Hambrick, 1990). While there are many possible measures of size, this dissertation measured size as the natural log of number of employees because more employees are seen as creating a large amount of bureaucratic momentum (Mintzberg, 1979). The natural log is used because the distribution is generally skewed. This data was collected through the Compustat database.

Firm Age. The age of a firm has been show to affect the amount of change that organization undergoes (Delacroix & Swaminathan, 1991; Haveman, 1993). It is possible that as a firm ages it develops greater bureaucracy making radical changes to strategy more difficult. Therefore, age of firm, as measured from date of incorporation, is included as a control in appropriate analyses. This data was collected through the Capital IQ database.

CEO Age. The age of a CEO can have an effect on their strategic behavior, leading to less dynamic strategies with a greater tendency towards conformity (Chatterjee & Hambrick, 2007; Finkelstein & Hambrick, 1990). Age was included in

the appropriate analyses as a control. Data for this variable was collected from the CEO's biography on Capital IQ.

Factor Creation

In creating the factors used in this study, I engaged in a five step process. First, I converted the variables into *z*-scores which standardizes the variables and allows better comparability between differing scales. Next, I performed an obliminal factor analysis. Oblique rotation (oblimin) is used so as to not force orthogonality and allow better understanding of the actual interrelationships between the factors. With this analysis performed I examined the factor structure to see if certain items were loading across multiple factors. If there are such cross loading items, they were removed. Finally, I performed an alpha analysis to insure the internal consistency of the factor.

Analysis Technique

OLS regression was used to test my hypotheses due to its robustness in showing both linear and non-linear relationships between multiple variables. These analyses were done hierarchically with stage 1 as control variables, stage 2 being task challenges, stage 3 being performance challenges and stage 4 being executive aspirations. To test my mediated model (hypotheses 5a-b), I used the Baron and Kenny (1986) three equation model to establish mediation. I did a further test of Hypotheses 1, 2, 3 and 5a-b using a maximum likelihood estimation SEM analysis. This analysis was performed by estimating the measurement model and structural model simultaneously to better capture the information about the paths in the model (Loehlin, 2004).

Chapter 4

Analysis and Results

With the data collected as described in the preceding chapter, I used factor analysis to create factors with which I tested my hypotheses. I additionally analyzed said data to insure that it meets the assumptions for OLS. Transformations for non-normal data were performed, leading to variables that fell within accepted parameters. I then used the previously described analysis techniques to test my hypotheses.

Factor Analysis

Before performing factor analysis, I examined the consistency of the scales being constructed. Table 2 contains the Cronbach's alpha statistics for the Task Challenges, Performance Challenges and Executive Aspirations scales. Both Task Challenges and Performance Challenges had an alpha of above 0.70, suggesting that the measures are internally consistent (Hair, Anderson, Tatham & Black, 1998). However, the variables in the Executive Aspirations are not only well below the 0.70 threshold, but are also negative, which may indicate that the items are reversed. Conceptually, these variables should move together (The better educated, the more entrepreneurial, the inverse of the age you are at accession and the more striving you have towards incentive pay, the greater your aspirations), but the alpha does not indicate such a relationship. Further analysis was performed without the entrepreneurship variable as a means of testing if the outcome was affected by the presence of a binary variable. However, the alpha remained negative. Therefore this scale seemed inappropriate for further analysis and was not computed. The independent items were included in my regression analyses in an attempt to see if there

were any relationships between the Executive Aspiration variables and my dependent variables.

TABLE 2
Reliability Statistics

Factor Name	Factor Components	Cronbach's alpha
Task Challenges	Market Share, Quick Ratio, Current Ratio, Diversification, Productivity, Presence of COO/President, CEO Duality, TMT Heterogenity, TMT Tenure in Firm, TMT Tenure on Team	0.72
Performance Challenges	Outside Directors, Outside Directors Appointed before CEO, Board Stock Ownership, Institutional Ownership	0.76
Executive Aspirations	CEO Education Level, CEO Entrepreneurship, Age Became CEO, CEO Incentive Pay Achieved	-0.11

Following these analyses, I performed a factor analysis on the Task Challenge variables. These variables had been converted to *z*-scores in order to standardize the variables so that the communalities between said variables could be better seen. Using the Kaiser Criterion (Kaiser, 1960), four factors had Eigenvalues above 1 and were therefore retained. These four factors also had a cumulative percentage of 62 percent of variance explained. The factor loadings found in table 3 were arrived at through a principal component analysis with oblimin rotation so that orthogonality would not be forced and that the interrelationships between the factors would be preserved. Using SPSS, variables for the four factors were computed using the regression method.

TABLE 3
Task Challenges Factor Loadings

	1	2	3	4
Market Share	-.458	.437	-.187	.219
Quick Ratio	.925	-.142	.153	-.287
Current Ratio	.918	-.086	.125	-.170
Diversification	.244	-.208	.648	-.039
Productivity	.318	-.009	.237	-.682
Presence of COO	.019	.193	.786	-.043
CEO Duality	.280	-.474	-.309	.104
TMT Heterogeneity	-.109	.062	.064	.821
TMT Firm Tenure	-.210	.804	-.155	-.127
TMT Team Tenure	.209	.653	.229	.236

Similar analyses were performed on the Performance Challenges variables (which had, like the Task Challenges variables, been converted to *z*-scores in order to make communalities between variables more apparent). With these variables, the Kaiser Criterion suggested a two factor solution which represented a cumulative percentage of 58 percent of variance explained. The factor loadings found in table 4 were once again created using a principal component analysis with oblimin rotation. The variables for the two factors were generated using regression techniques as was done for Task Challenges.

TABLE 4
Performance Challenges Factor Loadings

	1	2
Outside Directors	.699	.423
Outside Directors Appointed before CEO	.055	.814
Board Stock Ownership	.054	.514
Institutional Ownership	.847	-.133

Normality Analysis and Transformations

With my factor scores in place, I then examined descriptive statistics (see Table 5) and looked at the histograms (found in appendix 1) of my independent, dependent and control variables. In general, I was examining the histograms to get a feel for how normally distributed my variables were and examining the descriptive statistics for skewness and kurtosis.

TABLE 5
Descriptive Statistics for Pre-Transformed Variables

Variable	N	Mean	Standard Deviation	Skewness	Kurtosis
Conformity Measure 1	59	3.27	1.67	1.54	1.84
Conformity Measure 2	200	2.23	1.91	5.80	43.07
Dynamism Measure 1	54	-0.06	2.16	2.93	9.40
Dynamism Measure 2	200	0.00	2.04	5.01	28.99
2007 ROA	200	0.07	0.08	-1.47	11.41
2007 ROE	200	0.19	0.35	2.02	17.30
2007 ROS	200	0.08	0.15	-2.56	12.03
2007 Tobin's Q	200	1.91	1.25	2.53	9.07
ROA Variability	200	0.04	0.05	2.99	10.22
ROE Variability	200	0.26	1.38	12.96	176.35
ROS Variability	200	0.10	0.45	12.45	167.10
Tobin's Q Variability	200	0.41	0.48	3.23	14.12
Task Challenges 1	200	0.00	1.00	-0.85	1.10
Task Challenges 2	200	0.00	1.00	0.23	0.08
Task Challenges 3	200	0.00	1.00	0.10	-0.78
Task Challenges 4	200	0.00	1.00	1.63	6.70
Performance Challenges 1	200	0.00	1.00	-0.98	0.68
Performance Challenges 2	200	0.00	1.00	-0.50	1.38
CEO Education Level	200	4.80	1.47	0.10	-1.04
Entrepreneur CEO	200	0.07	0.25	3.56	10.75
Age Became CEO	200	0.96	0.13	-0.21	-0.11
CEO Incentive Pay	200	0.96	0.56	1.62	5.93
CEO Tenure	200	17.66	11.99	0.34	-1.00
Firm Age	200	68.93	44.39	0.59	-0.13
Firm Size	200	2.94	1.39	-0.03	-0.06
CEO Age	200	54.26	6.18	0.14	0.30

The traditional rule of thumb in evaluating normality is that skewness and kurtosis should both be in the -3 to 3 range. All of my dependent variables are highly leptokurtic with kurtosis scores into the hundreds. Hair and colleagues (1998) suggest a variety of fixes to data that is non-normal; primarily logarithmic, square root and inversion. I began by applying natural logarithm transformations to my variables.

TABLE 6
Descriptive Statistics for Transformed Variables

Variable	N	Mean	Standard Deviation	Skewness	Kurtosis
Conformity Measure 1 (Log)	59	0.47	0.19	0.67	-0.08
Conformity Measure 2 (Log)	200	0.28	0.22	1.09	3.62
Dynamism Measure 1 (Log)	54	0.12	0.37	0.14	0.85
Dynamism Measure 2 (Log)	200	0.21	0.23	1.61	4.08
2007 ROA (Log)	200	1.00	0.00	-1.60	12.20
2007 ROE (Log)	200	1.01	0.01	1.27	15.16
2007 ROS (Log)	200	1.00	0.01	-2.73	12.87
2007 Tobin's Q (Log)	200	0.21	0.24	0.30	0.70
ROA Variability (Log)	200	-1.70	0.48	0.11	-0.10
ROE Variability (Log)	200	-1.15	0.57	0.65	1.31
ROS Variability (Log)	200	-1.57	0.65	0.38	0.26
Tobin's Q Variability (Log)	200	-0.60	0.45	-0.31	0.33
Task Challenges 1	200	0.00	1.00	-0.85	1.10
Task Challenges 2	200	0.00	1.00	0.23	0.08
Task Challenges 3	200	0.00	1.00	0.10	-0.78
Task Challenges 4	200	0.69	0.08	0.40	6.70
Performance Challenges 1	200	0.00	1.00	-0.98	0.68
Performance Challenges 2	200	0.00	1.00	-0.50	1.38
CEO Education Level	200	4.80	1.47	0.10	-1.04
Entrepreneur CEO	200	0.07	0.25	3.56	10.75
Age Became CEO	200	0.96	0.13	-0.21	-0.11
CEO Incentive Pay (SQRT)	200	0.93	0.30	-0.38	2.29
CEO Tenure (SQRT)	200	3.89	1.59	-0.28	-0.83
Firm Age (SQRT)	200	7.82	2.80	-0.02	-0.89
Firm Size	200	2.94	1.39	-0.03	-0.06
CEO Age	200	54.26	6.18	0.14	0.30

Because a logarithm cannot be taken of a 0 or negative number, a constant of 10 was added to ROA, ROE and ROS. While these transformations improved my skewness numbers, kurtosis continued to be high. I then tried a square root transformation, and reflect natural log square root transformations (where I would take the natural log or square root of (1+Max Value of Variable)-Variable). While the square root transformation gave a more normal distribution for CEO incentive pay, CEO tenure and the firm age variables, in general the natural log transformation gave the most normalized results for the variables. No transformation was attempted for the CEO Entrepreneur variable because its high skewness and kurtosis scores are a result of it being a binary variable. The descriptive statistics for my transformed variables can be found in Table 6 and the histograms can be found in appendix 2.

Industry Controls

In addition to the control variables discussed in chapter 3, I additionally controlled for industry in my regressions. However, given that my sample includes 84 different four-digit NAICS industries (and 15 different two-digit NAICS industries), it would be impractical to include dummy variables for each industry (and would quickly erode my degrees of freedom). Therefore, taking from Sharfman & Fernando (2008), I analyzed my dependent variables with an ANOVA to see if there was a significant difference by industry. For the purposes of this analysis, I used a firm's two-digit NAICS industry as the independent variable in these ANOVAs because SPSS cannot run post-hoc analyses on ANOVAs with more than 50 groups. The results of these ANOVAs can be seen in Tables 7 through 18.

TABLE 7

ANOVA for Conformity 1 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.592	8	.074	2.439	.026
Within Groups	1.517	50	.030		
Total	2.109	58			

TABLE 8

ANOVA for Conformity 2 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.505	15	.100	2.380	.004
Within Groups	7.757	184	.042		
Total	9.262	199			

TABLE 9

ANOVA for Dynamism 1 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.377	8	.297	2.670	.017
Within Groups	5.009	45	.111		
Total	7.386	53			

TABLE 10

ANOVA for Dynamism 2 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.211	15	.081	1.530	.098
Within Groups	9.713	184	.053		
Total	10.924	199			

TABLE 11
ANOVA for ROA 2007 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.000	15	.000	.754	.727
Within Groups	.002	184	.000		
Total	.002	199			

TABLE 12
ANOVA for ROE 2007 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.004	15	.000	1.423	.140
Within Groups	.037	184	.000		
Total	.041	199			

TABLE 13
ANOVA for ROS 2007 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.000	15	.000	.603	.870
Within Groups	.008	184	.000		
Total	.009	199			

TABLE 14
ANOVA for Tobin's Q 2007 by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.670	15	.178	3.902	.000
Within Groups	8.392	184	.046		
Total	11.062	199			

TABLE 15
ANOVA for ROA Variability by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.656	15	.577	2.879	.000
Within Groups	36.879	184	.200		
Total	45.534	199			

TABLE 16
ANOVA for ROE Variability by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.372	15	.358	1.127	.334
Within Groups	58.447	184	.318		
Total	63.819	199			

TABLE 17
ANOVA for ROS Variability by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22.699	15	1.513	4.556	.000
Within Groups	61.113	184	.332		
Total	83.811	199			

TABLE 18
ANOVA for Tobin's Q Variability by Industry

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.692	15	1.046	7.906	.000
Within Groups	24.348	184	.132		
Total	40.040	199			

As seen in tables 7 through 18, the Conformity 1, Conformity 2, Dynamism 1, Tobin's Q 2007, ROA Variability, ROS Variability and Tobin's Q Variability had

significant differences by industry. Because significant differences exist, I performed Bonferroni post-hoc tests to see in what industries there were significant differences. In the case of the Conformity 1 measure, NAICS industry 32 (Manufacturing) was found to be different from the other industries. For Conformity 2, NAICS industry 48 (Transportation and Warehousing) and 52 (Finance and Insurance) were different. Dynamism 1 was found to have significant differences for NAICS industry 45 (Retail Trade). Tobin's Q 2007 and Tobin's Q Variability had differences in NAICS industries 22 (Utilities) and 52 (Finance and Insurance).For ROA Variability there was a significant difference in NAICS industry 22 (Utilities).Finally, there was a significant difference in ROS Variability in NAICS industries 42 (Wholesale Trade), 44 (Retail Trade) and 52 (Finance and Insurance). Dummy variables were created for each industry with 1 for the industries with a significant difference and 0 for the industries without.

Correlation Tables

As a final check before running my regressions, I looked at the correlation tables to insure that unrelated variables were not overly correlated. Variables that are overly correlated can lead to multicollinearity, which makes it difficult to add explanatory power due to greater shared variance and less unique variance amongst variables in my model (Hair et al., 1998). As seen in Table 19, most of the highly correlated variables will not appear together in the regressions. Of concern are some of the squared terms and their base variables (especially with the Executive Aspirations variables) as well as the moderation variables (Tenure x Demands) both within themselves and with Tenure.

Table 19

Correlation Matrix For Independent, Dependent and Control Variables

	Variable	1		2		3		4		5		6	
1	Conformity Measure 1												
2	Conformity Measure 2	**0.80**	***										
3	Dynamism Measure 1	0.27	*	0.23	+								
4	Dynamism Measure 2	0.15		0.33	***	0.87	***						
5	2007 ROA	-0.02		-0.12	+	-0.27	+	-0.19	**				
6	2007 ROE	0.03		-0.13	+	-0.10		-0.08		**0.57**	***		
7	2007 ROS	-0.06		-0.15	*	-0.17		-0.22	**	**0.76**	***	**0.52**	***
8	2007 Tobin's Q	-0.07		-0.21	**	-0.08		-0.14	*	**0.61**	***	**0.25**	***
9	ROA Variability	0.16		0.07		0.41	**	0.21	**	-0.10		-0.18	*
10	ROE Variability	0.19		0.19	**	**0.55**	***	0.32	***	-0.24	***	0.00	
11	ROS Variability	0.21		0.33	***	0.47	***	0.30	***	-0.32	***	-0.31	***
12	Tobin's Q Variability	-0.14		-0.18	*	0.00		-0.05		0.34	***	0.04	
13	Task Challenges 1	-0.19		-0.05		-0.23	+	0.01		-0.10		0.13	+
14	Task Challenges 1 Squared	0.27	*	0.10		0.01		-0.02		0.11		-0.12	+
15	Task Challenges 2	0.14		0.13	+	0.36	**	0.24	***	-0.22	**	-0.18	*
16	Task Challenges 2 Squared	-0.17		0.05		0.04		0.10		-0.19	**	-0.11	
17	Task Challenges 3	0.00		0.06		0.03		0.12	+	0.09		0.10	
18	Task Challenges 3 Squared	-0.24	+	0.15	*	-0.09		0.11		-0.04		-0.03	
19	Task Challenges 4	0.09		0.22	**	0.30	*	0.10		0.01		-0.14	*
20	Task Challenges 4 Squared	0.18		0.34	***	0.00		0.31	***	-0.08		-0.11	
21	Performance Challenges 1	0.02		0.14	*	0.16		0.14	+	-0.12	+	-0.06	
22	Performance Challenges 1 Squared	0.05		0.01		-0.26	+	-0.11		0.10		0.00	

Table 19 (cont.)
Correlation Matrix For Independent, Dependent and Control Variables

	Variable	1		2		3		4		5		6	
23	Performance Challenges 2	-0.04		0.01		0.03		0.07		0.12	+	0.05	
24	Performance Challenges 2 Squared	-0.20		-0.03		0.17		0.00		0.02		0.04	
25	CEO Education Level	0.19		0.02		0.21		0.04		-0.09		0.04	
26	CEO Education Level Squared	0.20		0.01		0.20		0.02		-0.09		0.04	
27	Entrepreneur CEO	0.27	*	0.01		0.03		-0.04		-0.07		0.06	
28	Age Became CEO	-0.25	+	-0.11		-0.13		-0.11		-0.01		-0.02	
29	Age Became CEO Squared	-0.23	+	-0.10		-0.12		-0.11		-0.03		-0.02	
30	CEO Incentive Pay	-0.16		-0.03		-0.23	+	-0.02		0.10		0.00	
31	CEO Incentive Pay Squared	-0.18		-0.02		-0.30	*	-0.05		0.13	+	-0.03	
32	CEO Tenure	-0.08		-0.05		-0.24	+	-0.12	+	0.07		0.09	
33	Tenure x Task Challenges 1	-0.22	+	-0.03		-0.27	*	-0.01		-0.10		0.08	
34	Tenure x Task Challenges 2	0.18		0.14	*	0.33	*	0.22	**	-0.18	*	-0.15	*
35	Tenure x Task Challenges 3	-0.01		0.06		0.05		0.10		0.09		0.09	
36	Tenure x Task Challenges 4	0.14		0.19	**	0.39	**	0.12	+	0.03		-0.10	
37	Tenure x Performance Challenges 1	0.06		0.15	*	0.18		0.16	*	-0.12	+	-0.05	
38	Tenure x Performance Challenges 2	0.00		0.03		0.12		0.06		0.09		0.02	
39	Tenure x CEO Education Level	0.12		0.00		-0.05		-0.07		0.02		0.10	
40	Tenure x Age Became CEO	-0.12		-0.07		-0.28	*	-0.15	*	0.06		0.07	
41	Tenure x CEO Incentive Pay	-0.16		-0.05		-0.34	*	-0.10		0.11		0.07	
42	Firm Age	-0.15		-0.08		-0.46	***	-0.15	*	0.06		0.15	*
43	Firm Size	-0.02		-0.01		-0.29	*	0.01		-0.02		0.06	
44	CEO Age	-0.19		-0.16	*	-0.13		-0.18	*	-0.02		0.01	

N=200 Except Conformity 1=59 and Dynamism 1=54

Table 19 (cont.)

Correlation Matrix For Independent, Dependent and Control Variables

	Variable	7		8		9		10		11		12	
7	2007 ROS												
8	2007 Tobin's Q	0.41	***										
9	ROA Variability	-0.16	*	0.16	*								
10	ROE Variability	-0.31	***	-0.09		**0.72**	***						
11	ROS Variability	-0.21	**	-0.23	**	**0.74**	***	**0.65**	***				
12	Tobin's Q Variability	0.13	+	**0.68**	***	0.42	***	0.07		0.03			
13	Task Challenges 1	-0.02		-0.25	***	-0.34	***	-0.13	+	-0.36	***	-0.34	***
14	Task Challenges 1 Squared	0.06		0.18	**	0.12	+	0.05		0.16	*	0.19	**
15	Task Challenges 2	-0.24	***	-0.12	+	0.20	**	0.19	**	0.35	***	-0.04	
16	Task Challenges 2 Squared	-0.28	***	-0.13	+	0.08		0.12	+	0.10		-0.11	
17	Task Challenges 3	0.02		-0.06		0.04		0.11		-0.04		-0.13	+
18	Task Challenges 3 Squared	0.07		-0.02		0.09		0.07		0.12	+	-0.04	
19	Task Challenges 4	0.03		-0.14	*	-0.04		0.06		0.25	***	-0.15	*
20	Task Challenges 4 Squared	-0.13	+	-0.17	*	0.02		0.14	*	0.20	**	-0.14	+
21	Performance Challenges 1	-0.14	*	-0.13	+	0.20	**	0.24	***	0.18	*	0.00	
22	Performance Challenges 1 Squared	0.07		0.13	+	-0.15	*	-0.22	**	-0.14	*	0.00	
23	Performance Challenges 2	0.10		0.10		0.01		-0.03		-0.04		0.03	
24	Performance Challenges 2 Squared	0.06		0.02		-0.08		-0.06		-0.04		-0.02	
25	CEO Education Level	-0.02		-0.19	**	-0.04		0.07		0.01		-0.13	+
26	CEO Education Level Squared	-0.02		-0.19	**	-0.04		0.07		0.02		-0.12	+
27	Entrepreneur CEO	-0.06		-0.03		0.01		0.00		0.01		0.04	
28	Age Became CEO	0.05		-0.09		-0.09		-0.08		-0.10		-0.16	*
29	Age Became CEO Squared	0.03		-0.09		-0.08		-0.08		-0.09		-0.15	*
30	CEO Incentive Pay	0.13	+	0.13	+	-0.12	+	-0.09		-0.14	+	0.12	+

Table 19 (cont.)

Correlation Matrix For Independent, Dependent and Control Variables

	Variable	7		8		9		10		11		12	
31	CEO Incentive Pay Squared	0.15	*	0.14	*	-0.13	+	-0.10		-0.15	*	0.12	+
32	CEO Tenure	0.08		-0.02		-0.23	**	-0.21	**	-0.28	***	-0.14	+
33	Tenure x Task Challenges 1	-0.09		-0.22	**	-0.34	***	-0.16	*	-0.35	***	-0.29	***
34	Tenure x Task Challenges 2	-0.14	*	-0.07		0.18	*	0.16	*	0.32	***	-0.03	
35	Tenure x Task Challenges 3	-0.01		-0.03		0.03		0.14	*	-0.03		-0.12	+
36	Tenure x Task Challenges 4	0.08		-0.09		-0.03		0.05		0.22	**	-0.14	+
37	Tenure x Performance Challenges 1	-0.14	*	-0.10		0.19	**	0.24	***	0.18	*	0.02	
38	Tenure x Performance Challenges 2	0.06		0.08		-0.01		-0.05		-0.04		0.02	
39	Tenure x CEO Education Level	0.08		-0.11		-0.19	**	-0.10		-0.21	**	-0.18	**
40	Tenure x Age Became CEO	0.08		-0.04		-0.24	***	-0.22	***	-0.29	***	-0.16	*
41	Tenure x CEO Incentive Pay	0.12	+	0.06		-0.26	***	-0.23	**	-0.30	***	-0.02	
42	Firm Age	-0.03		-0.01		-0.24	***	-0.15	*	-0.41	***	-0.14	*
43	Firm Size	0.00		-0.15	*	-0.30	***	-0.12	+	-0.29	***	-0.30	***
44	CEO Age	0.05		-0.07		-0.08		-0.10		-0.10		-0.06	

Table 19 (cont.)

Correlation Matrix For Independent, Dependent and Control Variables

	Variable	13		14		15		16		17		18
13	Task Challenges 1											
14	Task Challenges 1 Squared	-0.48	***									
15	Task Challenges 2	-0.18	*	0.06								
16	Task Challenges 2 Squared	0.03		-0.03		0.16	*					
17	Task Challenges 3	0.15	*	-0.19	**	0.07		0.09				
18	Task Challenges 3 Squared	0.04		0.06		-0.05		0.07		0.09		
19	Task Challenges 4	-0.14	+	0.16	*	0.04		0.00		-0.06		0.00
20	Task Challenges 4 Squared	0.02		0.08		0.11		0.00		0.04		-0.11
21	Performance Challenges 1	-0.01		-0.09		0.17	*	0.10		0.01		-0.01
22	Performance Challenges 1 Squared	-0.12	+	0.07		0.00		-0.05		0.03		-0.03
23	Performance Challenges 2	0.05		0.10		0.21	**	0.07		0.22	**	0.03
24	Performance Challenges 2 Squared	0.03		-0.08		0.05		-0.06		-0.02		-0.07
25	CEO Education Level	0.03		0.07		0.08		-0.02		-0.04		0.02
26	CEO Education Level Squared	0.02		0.07		0.08		-0.02		-0.07		0.01
27	Entrepreneur CEO	-0.11		0.24	***	0.04		-0.11		-0.20	**	-0.01
28	Age Became CEO	0.20	**	-0.07		-0.13	+	0.05		0.05		0.05
29	Age Became CEO Squared	0.19	**	-0.07		-0.13	+	0.05		0.03		0.05
30	CEO Incentive Pay	0.19	**	-0.07		-0.12	+	-0.06		0.01		0.05
31	CEO Incentive Pay Squared	0.15	*	-0.03		-0.11		-0.09		-0.01		0.02
32	CEO Tenure	0.18	*	-0.10		**-0.58**	***	-0.03		0.00		-0.02
33	Tenure x Task Challenges 1	**0.93**	***	-0.42	***	-0.20	**	0.08		0.11		0.01
34	Tenure x Task Challenges 2	-0.19	**	0.08		**0.93**	***	-0.12	+	0.03		-0.09
35	Tenure x Task Challenges 3	0.10		-0.17	*	0.03		0.07		**0.91**	***	0.05

Table 19 (cont.)
Correlation Matrix For Independent, Dependent and Control Variables

	Variable	13		14		15		16		17		18
36	Tenure x Task Challenges 4	-0.10		0.15	*	0.06		-0.04		-0.01		0.01
37	Tenure x Performance Challenges 1	-0.02		-0.09		0.17	*	0.05		0.06		0.00
38	Tenure x Performance Challenges 2	0.04		0.09		0.18	*	0.03		0.20	**	0.00
39	Tenure x CEO Education Level	0.14	*	-0.02		-0.43	***	-0.06		-0.03		0.00
40	Tenure x Age Became CEO	0.21	**	-0.10		-0.56	***	0.00		0.03		-0.01
41	Tenure x CEO Incentive Pay	0.24	***	-0.12	+	-0.49	***	-0.04		0.01		0.01
42	Firm Age	**0.58**	***	-0.32	***	-0.32	***	0.05		0.31	***	-0.02
43	Firm Size	0.41	***	-0.29	***	-0.29	***	0.08		0.25	***	0.00
44	CEO Age	0.07		-0.04		-0.34	***	0.04		-0.23	**	0.09

Table 19 (cont.)
Correlation Matrix For Independent, Dependent and Control Variables

	Variable	19		20		21		22		23		24
19	Task Challenges 4											
20	Task Challenges 4 Squared	**0.55**	***									
21	Performance Challenges 1	0.04		0.09								
22	Performance Challenges 1 Squared	-0.01		0.02		**-0.60**	***					
23	Performance Challenges 2	0.05		0.09		0.11		-0.10				
24	Performance Challenges 2 Squared	-0.08		-0.04		-0.33	***	0.33	***	-0.28	***	
25	CEO Education Level	0.18	*	0.06		0.09		-0.13	+	0.16	*	-0.11
26	CEO Education Level Squared	0.18	*	0.05		0.08		-0.11		0.13	+	-0.10
27	Entrepreneur CEO	-0.02		0.04		-0.02		-0.02		-0.18	**	0.00
28	Age Became CEO	0.13	+	0.04		0.02		-0.12		0.20	**	-0.09
29	Age Became CEO Squared	0.13	+	0.04		0.01		-0.11		0.20	**	-0.08

Table 19 (cont.)

Correlation Matrix For Independent, Dependent and Control Variables

	Variable	19		20		21		22		23		24	
30	CEO Incentive Pay	0.15	*	0.03		0.00		0.08		-0.03		0.06	
31	CEO Incentive Pay Squared	0.10		0.04		-0.03		0.10		-0.06		0.06	
32	CEO Tenure	0.03		-0.06		-0.19	**	0.01		-0.28	***	-0.01	
33	Tenure x Task Challenges 1	-0.10		0.03		-0.02		-0.11		0.04		0.02	
34	Tenure x Task Challenges 2	0.06		0.08		0.17	*	0.02		0.18	*	0.05	
35	Tenure x Task Challenges 3	-0.01		0.03		0.06		-0.01		0.20	**	-0.08	
36	Tenure x Task Challenges 4	**0.91**	***	0.44	***	0.00		-0.02		0.10		-0.05	
37	Tenure x Performance Challenges 1	0.00		0.04		**0.92**	***	**-0.58**	***	0.11		-0.27	***
38	Tenure x Performance Challenges 2	0.09		0.08		0.11		-0.16	*	**0.93**	***	-0.32	***
39	Tenure x CEO Education Level	0.16	*	0.00		-0.11		-0.07		-0.13	+	-0.08	
40	Tenure x Age Became CEO	0.07		-0.05		-0.17	*	-0.02		-0.16	*	-0.05	
41	Tenure x CEO Incentive Pay	0.09		-0.02		-0.17	*	0.08		-0.25	***	0.05	
42	Firm Age	-0.31	***	0.01		-0.10		0.03		0.01		-0.01	
43	Firm Size	0.12	+	0.13	+	-0.02		-0.04		0.10		-0.14	+
44	CEO Age	0.09		-0.02		0.03		-0.15	*	-0.16	*	-0.10	

Table 19 (cont.)

Correlation Matrix For Independent, Dependent and Control Variables

	Variable	25		26		27		28		29		30	
25	CEO Education Level												
26	CEO Education Level Squared	**0.99**	***										
27	Entrepreneur CEO	0.02		0.05									
28	Age Became CEO	0.08		0.06		-0.31	***						
29	Age Became CEO Squared	0.06		0.05		-0.29	***	**1.00**	***				
30	CEO Incentive Pay	-0.05		-0.04		-0.01		0.04		0.04			
31	CEO Incentive Pay Squared	-0.11		-0.09		0.04		-0.02		-0.02		**0.94**	***
32	CEO Tenure	-0.12	+	-0.12	+	0.02		0.12	+	0.13	+	0.04	
33	Tenure x Task Challenges 1	-0.01		-0.01		-0.13	+	0.17	*	0.17	*	0.19	**
34	Tenure x Task Challenges 2	0.07		0.07		0.06		-0.14	+	-0.14	*	-0.09	
35	Tenure x Task Challenges 3	-0.04		-0.07		-0.20	**	0.08		0.05		0.01	
36	Tenure x Task Challenges 4	0.21	**	0.20	**	-0.02		0.13	+	0.13	+	0.12	+
37	Tenure x Performance Challenges 1	0.07		0.06		0.01		0.00		-0.02		-0.05	
38	Tenure x Performance Challenges 2	0.16	*	0.13	+	-0.17	*	0.26	***	0.26	***	-0.06	
39	Tenure x CEO Education Level	**0.52**	***	**0.51**	***	0.05		0.17	*	0.17	*	-0.01	
40	Tenure x Age Became CEO	-0.07		-0.08		-0.08		0.42	***	0.43	***	0.03	
41	Tenure x CEO Incentive Pay	-0.13	+	-0.12	+	0.03		0.09		0.09		**0.61**	***
42	Firm Age	-0.13	+	-0.14	+	-0.13	+	0.19		0.17	*	0.23	***
43	Firm Size	0.05		0.02		-0.16	*	0.28	***	0.27	***	0.15	*
44	CEO Age	0.13	+	0.14	+	0.03		**0.57**	***	0.59	***	0.05	

Table 19 (cont.)
Correlation Matrix For Independent, Dependent and Control Variables

	Variable	31		32		33		34		35	
31	CEO Incentive Pay Squared										
32	CEO Tenure	0.03									
33	Tenure x Task Challenges 1	0.15	*	0.21	**						
34	Tenure x Task Challenges 2	-0.07		**-0.56**	***	-0.25	***				
35	Tenure x Task Challenges 3	-0.01		0.03		0.09		0.03			
36	Tenure x Task Challenges 4	0.07		0.02		-0.08		0.09		0.00	
37	Tenure x Performance Challenges 1	-0.08		-0.18	*	-0.02		0.20	**	0.11	
38	Tenure x Performance Challenges 2	-0.08		-0.20	**	0.05		0.16	*	0.23	***
39	Tenure x CEO Education Level	-0.06		**0.75**	***	0.14	+	-0.40	***	-0.01	
40	Tenure x Age Became CEO	0.01		**0.94**	***	0.24	***	**-0.56**	***	0.06	
41	Tenure x CEO Incentive Pay	**0.60**	***	**0.78**	***	0.28	***	-0.47	***	0.02	
42	Firm Age	0.23	***	0.24	***	**0.57**	***	-0.35	***	0.26	***
43	Firm Size	0.10		0.28	***	0.38	***	-0.30	***	0.22	**
44	CEO Age	0.04		0.36	***	0.05		-0.37	***	-0.24	***

Table 19 (cont.)
Correlation Matrix For Independent, Dependent and Control Variables

	Variable	36		37		38		39		40	
36	Tenure x Task Challenges 4										
37	Tenure x Performance Challenges 1	-0.03									
38	Tenure x Performance Challenges 2	0.14	*	0.12	+						
39	Tenure x CEO Education Level	0.19	**	-0.09		-0.05					
40	Tenure x Age Became CEO	0.07		-0.17	*	-0.07		**0.74**	***		
41	Tenure x CEO Incentive Pay	0.07		-0.18	*	-0.20	**	**0.55**	***	**0.72**	***
42	Firm Age	-0.26	***	-0.12	+	0.01		0.09		0.27	***
43	Firm Size	0.14	*	-0.01		0.12	+	0.26	***	0.34	***
44	CEO Age	0.05		-0.02		-0.15	*	0.38	***	0.48	***

Table 19 (cont.)
Correlation Matrix For Independent, Dependent and Control Variables

	Variable	41		42		43	
41	Tenure x CEO Incentive Pay						
42	Firm Age	0.35	***				
43	Firm Size	0.29	***	0.33	***		
44	CEO Age	0.29	***	0.05		0.22	**

As a further check against multicolinearity, I evaluated the variance inflation factors (VIF) and tolerances as I ran my regressions. All but a few of the VIFs were below the generally accepted value of 10 (tolerance 0.10) (Hair et al., 1998) and the majority of VIFs were at or below the more conservative value of 2 (tolerance 0.50) (Neter, Wasserman & Kutner, 1985). The variables with VIFs above 10 appeared in analysis of hypothesis 3 and hypotheses 6 & 7. I will discuss those variables below.

Hypothesis 1

In hypothesis 1, I suggested that job demands would be positively related with strategic conformity. This relationship was tested using both the Strategic Conformity 1 variable (advertising intensity, research and development intensity, selling, general and administrative expenses/sales, inventory levels, leverage and equipment newness; N=59) and Strategic Conformity 2 (selling, general and administrative expenses/sales, inventory levels, leverage and equipment newness; N=200). In testing the Conformity 1 variable, seen in Table 20, none of the changes in R^2 were significant and only the variable testing if the CEO had prior entrepreneurial experience had a statistically significant relationship with conformity. While these results would seem to disconfirm the hypothesis, the power of the tests is somewhat problematic. Using G*Power (Faul, Erdfelder, Buchner & Lang, 2009) to test, the smallest change in R^2 detectable is 0.18 for stage 2, 0.14 for stage 3 and 0.18 for stage 4 ($p<.05$; $1-\beta=.80$). While this does mean that while I have enough power to detect what Cohen (1988, 1992) labeled a large effect (change in R^2 of 0.2595 or greater), I do not have the power to detect a medium or lower effect (change in R^2 of 0.1304). These power concerns call the meaningfulness of the results into question.

Table 20

Hypothesis 1: Strategic Conformity Regression Results (Conformity 1 Measure)

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.083		0.191		0.222		0.268		4.273	0.234
Firm Age	-0.083		0.101		0.097		0.183		2.735	0.366
CEO Age	-0.250	*	-0.318	*	-0.330	*	-0.485	*	3.200	0.313
Industry	0.550	***	0.581	***	0.587	***	0.535	***	1.369	0.730
Task Challenges 1			-0.190		-0.208		-0.229		2.559	0.391
Task Challenges 2			0.189		0.178		0.169		1.650	0.606
Task Challenges 3			-0.242		-0.233		-0.249		2.100	0.476
Task Challenges 4			0.105		0.106		0.132		2.303	0.434
Performance Challenges 1					0.078		0.093		1.266	0.790
Performance Challenges 2					-0.012		0.040		1.537	0.651
CEO Education Level							0.185		1.361	0.735
Entrepreneur CEO							0.326	*	2.152	0.465
Age Became CEO							0.179		3.636	0.275
CEO Incentive Pay							-0.013		1.443	0.693
Change in R^2	0.334		0.054		0.005		0.077			
F value	6.78	***	1.11		0.19		1.61			
Total R^2	0.334		0.388		0.393		0.471			

N=59

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 21

Hypothesis 1: Strategic Conformity Regression Results (Conformity 2 Measure)

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.025		0.013		0.027		0.054		2.139	0.467
Firm Age	-0.005		-0.037		-0.040		-0.035		1.558	0.642
CEO Age	-0.109		-0.106		-0.120		-0.093		2.230	0.448
Industry	0.312	***	0.263	***	0.270	***	0.275	***	1.386	0.722
Task Challenges 1			0.008		0.000		0.009		1.720	0.581
Task Challenges 2			0.026		-0.002		-0.002		1.513	0.661
Task Challenges 3			0.040		0.034		0.038		1.357	0.737
Task Challenges 4			0.140	+	0.138	+	0.159	+	1.515	0.660
Performance Challenges 1					0.145	*	0.146	*	1.060	0.944
Performance Challenges 2					0.000		0.017		1.362	0.734
CEO Education Level							-0.003		1.126	0.888
Entrepreneur CEO							0.043		1.258	0.795
Age Became CEO							-0.043		2.176	0.460
CEO Incentive Pay							-0.067		1.145	0.873
Change in R^2	0.123		0.016		0.020		0.008			
F value	6.84	***	0.92		2.24	+	0.40			
Total R^2	0.123		0.139		0.159		0.167			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

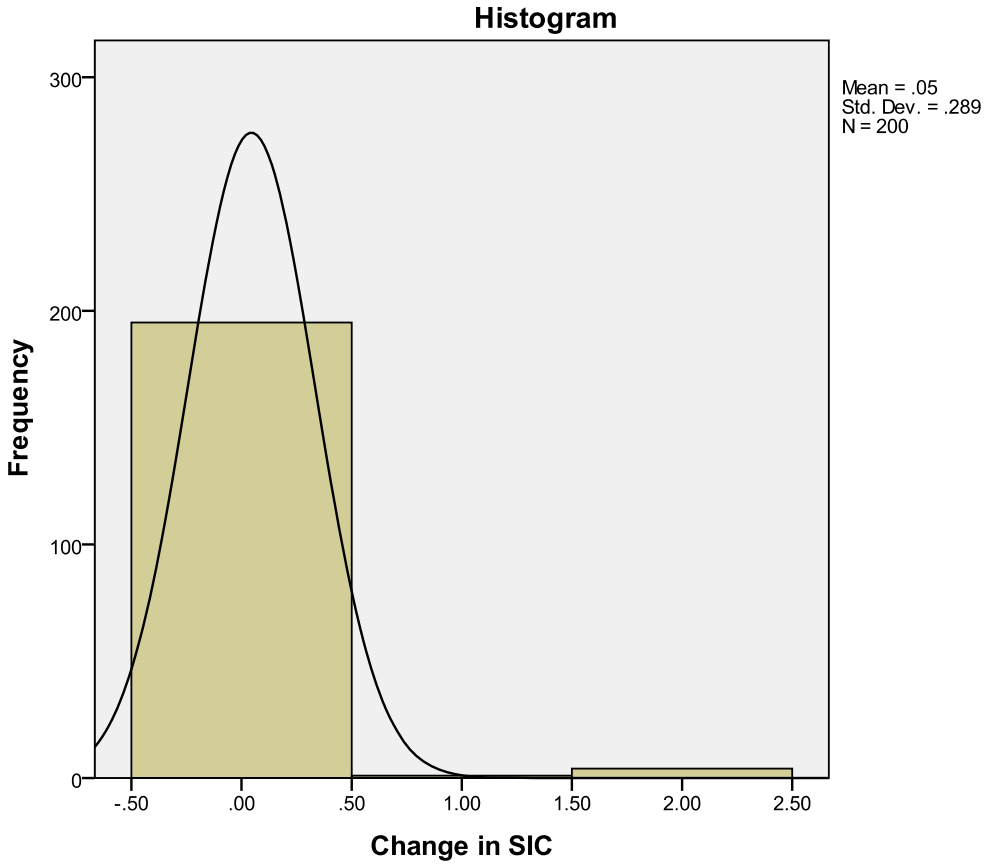
* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Testing hypothesis 1 using the Conformity 2 measure (results found in Table 21), only the change in R^2 for stage 3 was marginally supported. Further, a significant positive relationship between one of the task challenges factors ($p<.10$) and one of the performance challenges factors ($p<.05$) providing at least some support for hypotheses 1, suggesting that elements of the CEOs job/attributes of the organization and demands for performance from owners may increase the conformity of an organization's strategy.

Hypothesis 2

In hypothesis 2, I suggested that job demands would be positively related to strategic dynamism, or change in strategy. Much like strategic conformity, this relationship was tested using both the Strategic Dynamism 1 variable (advertising intensity, research and development intensity, selling, general and administrative expenses/sales, inventory levels, leverage and equipment newness; N=54) and Strategic Dynamism 2 (selling, general and administrative expenses/sales, inventory levels, leverage and equipment newness; N=200). I also planned to also test dynamism through number of SIC codes added and dropped by the firm between *t* and *t-1*.Data were gathered as described in chapter 3 for this third dynamism measure; however, only five companies in the sample had added or dropped an SIC code between 2004 and 2005 (as can be seen from the histogram below). The variable appeared to have insufficient variability and was therefore not tested.



For the Dynamism 1 measure (results found in Table 22), the change in R^2 was marginally significant in stage 2 and one of the task challenges factors is significantly positively related to strategic dynamism. Therefore there is at least some support for hypothesis 2, suggesting that aspects of the CEO's job increase the change in strategy. However, once again there are concerns with regards to the power of the analyses. With the sample size, the smallest change in R^2 detectable is 0.20 for stage 2, 0.16 for stage 3 and 0.20 for stage 4 ($p<.05$; $1-\beta=.80$). It is possible that with more statistical power, better inferences could be made with these results.

Table 22

Hypothesis 2: Strategic Dynamism Regression Results (Dynamism 1 Measure)

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.296	+	-0.463	*	-0.455	+	-0.535	*	4.554	0.220
Firm Age	-0.137		-0.248		-0.279		-0.272		2.561	0.390
CEO Age	-0.112		0.023		0.017		-0.022		3.595	0.278
Industry	-0.273	*	-0.255	*	-0.262	*	-0.289	*	1.339	0.747
Task Challenges 1			0.285		0.323	+	0.265		2.884	0.347
Task Challenges 2			0.171		0.186		0.170		1.869	0.535
Task Challenges 3			0.311	*	0.342	*	0.364	*	2.005	0.499
Task Challenges 4			0.090		0.090		-0.021		2.374	0.421
Performance Challenges 1					0.021		0.004		1.380	0.725
Performance Challenges 2					-0.099		-0.141		1.564	0.639
CEO Education Level							0.180		1.339	0.747
Entrepreneur CEO							-0.099		2.643	0.378
Age Became CEO							-0.006		3.891	0.257
CEO Incentive Pay							0.130		1.691	0.591
Change in R^2	0.297		0.118		0.007		0.028			
F value	5.18	***	2.26	+	0.25		0.49			
Total R^2	0.297		0.415		0.422		0.449			

N=54

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 23

Hypothesis 2: Strategic Dynamism Regression Results (Dynamism 2 Measure)

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.180	*	-0.207	*	-0.198	*	-0.187	+	2.136	0.468
Firm Age	0.113		0.066		0.068		0.067		1.514	0.660
CEO Age	-0.196	**	-0.115		-0.128	+	-0.069		2.208	0.453
Task Challenges 1			0.128		0.123		0.128		1.715	0.583
Task Challenges 2			0.170	*	0.158	*	0.169	*	1.431	0.699
Task Challenges 3			0.113		0.114		0.115		1.355	0.738
Task Challenges 4			0.055		0.056		0.065		1.310	0.763
Performance Challenges 1					0.098		0.095		1.059	0.945
Performance Challenges 2					-0.031		-0.015		1.290	0.775
CEO Education Level							0.002		1.126	0.888
Entrepreneur CEO							-0.047		1.228	0.814
Age Became CEO							-0.091		2.165	0.462
CEO Incentive Pay							0.001		1.145	0.873
Change in R^2	0.064		0.050		0.010		0.004			
F value	4.48	**	2.71	*	1.05		0.23			
Total R^2	0.064		0.114		0.124		0.128			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Testing hypothesis 2 with the Dynamism 2 measure (results found in Table 23) found similar results to Dynamism 1, that there is a significant change in stage 2 and that there is a significantly positive relationship between one of the task challenge factors and strategic dynamism. Therefore, there is some support for hypothesis 2, suggesting that some elements of the CEO's job will increase the amount of change in a firm's strategy.

Hypothesis 3

Hypothesis 3 suggested that there would be an inverse-U shaped relationship between executive job demands and firm financial performance. In order to test such a hypothesis, I included squared terms for all my independent variables in my analyses. These squared terms did create some issues with multicollinearity. As seen in Table 24, the VIFs for the CEO's education level, age the individual became CEO and the relative amount of incentive pay achieved and their respective squared terms are all very high which violates the regression assumption of variables not being perfectly collinear and can lead to instability in the regression. The regressions testing Hypothesis 3 were then rerun without the squared terms in the equation. Omitting these squared terms lead to VIFs within the acceptable range. Because these variables were not added until stage 4, in general, the results without the squared terms are the same as those regressions that included them. The major difference is that when omitting the squared term there is no relationship between the age the individual became CEO and financial performance but there is a significant relationship between the two variables when the squared term is included. Such a relationship was therefore likely created by the high multicollinarity.

TABLE 24
VIFs/Tolerances for Hypothesis 3 Regression

Variables	VIF	Tol
Firm Size	2.433	0.411
Firm Age	1.647	0.607
CEO Age	2.430	0.412
Task Challenges 1	2.114	0.473
Task Challenges 1 Squared	1.604	0.623
Task Challenges 2	1.599	0.625
Task Challenges 2 Squared	1.142	0.875
Task Challenges 3	1.452	0.689
Task Challenges 3 Squared	1.111	0.900
Task Challenges 4	2.112	0.474
Task Challenges 4 Squared	1.737	0.576
Performance Challenges 1	1.899	0.527
Performance Challenges 1 Squared	1.800	0.556
Performance Challenges 2	1.480	0.676
Performance Challenges 2 Squared	1.349	0.742
CEO Education Level	60.337	0.017
CEO Education Level Squared	58.933	0.017
Entrepreneur CEO	1.425	0.702
Age Became CEO	152.177	0.007
Age Became CEO Squared	151.803	0.007
CEO Incentive Pay	11.213	0.089
CEO Incentive Pay Squared	11.268	0.089

In examining Hypothesis 3 through ROA (Table 25), only in stage 2 (the addition of task challenges) is there a significant increase in R^2. Contrary to my hypothesis, only one quadratic term is significant and it is in the same direction as the unchanged variable. Therefore, with regards to ROA, there is no support for Hypothesis 3. Somewhat interestingly, there is a significantly negative relationship with regards to task challenges and ROA and a positive relationship with performance challenges and ROA. This relationship will be discussed in greater detail in Chapter 5.

Tests using ROE (Table 26) did not improve my results. In this analysis, no individual stage had a significant change in R^2. Further, only one of the task challenges

Table 25

Hypothesis 3: ROA Regression Results

Variables	Stage 1	Stage 2	Stage 3	Stage 4	VIF	Tol
Firm Size	0.075	0.119	0.115	0.093	2.371	0.422
Firm Age	-0.043	-0.051	-0.074	-0.074	1.595	0.627
CEO Age	-0.018	-0.049	-0.018	0.063	2.311	0.433
Task Challenges 1		-0.136	-0.150	-0.130	2.101	0.476
Task Challenges 1 Squared		0.096	0.059	0.084	1.560	0.641
Task Challenges 2		-0.222 **	-0.257 **	-0.231 **	1.582	0.632
Task Challenges 2 Squared		-0.157 *	-0.155 *	-0.164 *	1.108	0.902
Task Challenges 3		0.143 +	0.111	0.118	1.410	0.709
Task Challenges 3 Squared		-0.056	-0.057	-0.065	1.083	0.924
Task Challenges 4		0.118	0.118	0.114	2.087	0.479
Task Challenges 4 Squared		-0.131	-0.134	-0.128	1.716	0.583
Performance Challenges 1			-0.010	-0.026	1.808	0.553
Performance Challenges 1 Squared			0.060	0.038	1.772	0.564
Performance Challenges 2			0.193 **	0.215 **	1.449	0.690
Performance Challenges 2 Squared			0.049	0.042	1.346	0.743
CEO Education Level				-0.082	1.145	0.874
Entrepreneur CEO				-0.079	1.330	0.752
Age Became CEO				-0.103	2.230	0.448
CEO Incentive Pay				0.070	1.220	0.820
Change in R^2	0.006	0.134	0.033	0.017		
F value	0.39	3.65 ***	1.84	0.97		
Total R^2	0.006	0.140	0.173	0.190		

N=200

Table 26

Hypothesis 3: ROE Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	0.149	*	0.003		0.008		0.043		2.371	0.422
Firm Age	0.014		-0.030		-0.037		-0.031		1.595	0.627
CEO Age	-0.001		-0.008		0.004		0.023		2.311	0.433
Task Challenges 1			0.073		0.051		0.038		2.101	0.476
Task Challenges 1 Squared			-0.043		-0.064		-0.097		1.560	0.641
Task Challenges 2			-0.161	+	-0.177	*	-0.188	*	1.582	0.632
Task Challenges 2 Squared			-0.096		-0.094		-0.083		1.108	0.902
Task Challenges 3			0.109		0.092		0.104		1.410	0.709
Task Challenges 3 Squared			-0.043		-0.042		-0.041		1.083	0.924
Task Challenges 4			-0.076		-0.076		-0.052		2.087	0.479
Task Challenges 4 Squared			-0.050		-0.047		-0.067		1.716	0.583
Performance Challenges 1					-0.039		-0.030		1.808	0.553
Performance Challenges 1 Squared					-0.032		-0.018		1.772	0.564
Performance Challenges 2					0.107		0.137		1.449	0.690
Performance Challenges 2 Squared					0.049		0.064		1.346	0.743
CEO Education Level							0.071		1.145	0.874
Entrepreneur CEO							0.116		1.330	0.752
Age Became CEO							-0.050		2.230	0.448
CEO Incentive Pay							-0.034		1.220	0.820
Change in R^2	0.024		0.058		0.011		0.022			
F value	1.58		1.48		0.55		1.10			
Total R^2	0.024		0.081		0.092		0.114			

N=200

Table 27

Hypothesis 3: ROS Regression Results

Variables	Stage 1	Stage 2	Stage 3	Stage 4	VIF	Tol
Firm Size	-0.027	-0.066	-0.069	-0.106	2.371	0.422
Firm Age	-0.008	-0.044	-0.060	-0.065	1.595	0.627
CEO Age	0.058	0.011	0.045	0.083	2.311	0.433
Task Challenges 1		0.034	0.013	0.018	2.101	0.476
Task Challenges 1 Squared		0.060	0.023	0.040	1.560	0.641
Task Challenges 2		-0.218 **	-0.250 **	-0.237 **	1.582	0.632
Task Challenges 2 Squared		-0.248 ***	-0.243 ***	-0.244 ***	1.108	0.902
Task Challenges 3		0.109	0.078	0.085	1.410	0.709
Task Challenges 3 Squared		0.042	0.043	0.035	1.083	0.924
Task Challenges 4		0.116	0.116	0.084	2.087	0.479
Task Challenges 4 Squared		-0.169 *	-0.169 *	-0.150 +	1.716	0.583
Performance Challenges 1			-0.039	-0.060	1.808	0.553
Performance Challenges 1 Squared			0.038	0.015	1.772	0.564
Performance Challenges 2			0.198 **	0.201 *	1.449	0.690
Performance Challenges 2 Squared			0.089	0.077	1.346	0.743
CEO Education Level				-0.036	1.145	0.874
Entrepreneur CEO				-0.068	1.330	0.752
Age Became CEO				-0.047	2.230	0.448
CEO Incentive Pay				0.108	1.220	0.820
Change in R^2	0.004	0.152	0.038	0.015		
F value	0.25	4.25 ***	2.18 +	0.84		
Total R^2	0.004	0.156	0.195	0.209		

N=200

Table 28

Hypothesis 3: Tobin's Q Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.091		0.097		0.069		0.014		2.406	0.416
Firm Age	-0.071		0.005		-0.015		-0.023		1.604	0.623
CEO Age	-0.070		-0.116	+	-0.076		-0.034		2.333	0.429
Industry	-0.489	***	-0.462	***	-0.492	***	-0.470	***	1.435	0.697
Task Challenges 1			-0.264	**	-0.260	**	-0.248	**	2.114	0.473
Task Challenges 1 Squared			0.022		-0.025		0.007		1.597	0.626
Task Challenges 2			-0.054		-0.065		-0.048		1.629	0.614
Task Challenges 2 Squared			-0.109	+	-0.099		-0.104	+	1.108	0.902
Task Challenges 3			-0.076		-0.102		-0.094		1.423	0.703
Task Challenges 3 Squared			-0.010		-0.012		-0.022		1.083	0.924
Task Challenges 4			0.101		0.106		0.060		2.247	0.445
Task Challenges 4 Squared			-0.111		-0.104		-0.079		1.718	0.582
Performance Challenges 1					-0.090		-0.114		1.823	0.549
Performance Challenges 1 Squared					0.101		0.065		1.791	0.558
Performance Challenges 2					0.161	*	0.164	*	1.467	0.682
Performance Challenges 2 Squared					0.033		0.013		1.346	0.743
CEO Education Level							-0.101		1.162	0.861
Entrepreneur CEO							-0.098		1.333	0.750
Age Became CEO							-0.035		2.250	0.444
CEO Incentive Pay							0.137	*	1.228	0.814
Change in R^2	0.248		0.076		0.046		0.033			
F value	16.12	***	2.64	**	3.31	*	2.47	*		
Total R^2	0.248		0.325		0.370		0.403			

N=200

factors had any significant relationship with ROE. Again, there is no support for hypothesis 3.

Testing hypothesis 3 with ROS (Table 27) the results are very similar to that of ROA. Again, stage 2 had a significant increase in R^2, however, with ROS there is a marginally significant change in stage 3. There are also significant negative relationships for one of the task challenges factors and its squared term and a significant positive relationship with one of the performance challenges. An additional squared task challenges term is significantly negatively related to ROS, however, the unsquared term is not significant, again disconfirming hypothesis 3.

Testing hypothesis 3 with Tobin's Q (Table 28) has similar results to ROA. In this analysis, all four stages have a significant change in R^2. One of the performance challenge factors is significantly negatively related to performance, however, task challenges factor 1 is significant in Tobin's Q while factor 2 has been significant in the other performance analyses. Finally with Tobin's Q, there is a significant positive relationship between performance and the relative amount of incentive pay achieved, however given the importance of market return on Tobin's Q and a connection between the incentive pay a CEO receives and the firm's market performance, this relationship may be spurious.

Taken together, given that in the single situation where a variable and its squared term were significant they were both in the negative, hypothesis 3 is not confirmed through the tests of ROA, ROE, ROS and Tobin's Q. In doing power analysis, the smallest change in R^2 detectable is 0.07 for stage 2, 0.06 for stage 3 and 0.06 for stage 4 ($p<.05$; $1-\beta=.80$). While this is larger than the small effect (R^2 of 0.02

or less) suggested by Cohen (1988, 1992), it is still lower than his suggested medium effect (change in R^2 of 0.1304) the limit and therefore while more powerful inferences could be made, there is still reasonably high power and these nonsignificant findings may still suggest no relationship.

Hypothesis 4

Hypothesis 4 suggested that as demands increase the performance of the firm would behave more erratically and performance variability would increase. Again this was tested with four measures of performance, ROA, ROE, ROS and Tobin's Q. Testing this hypothesis with ROA (Table 29), only stage 2 had a significant increase in R^2. In this stage, only one of the task challenge factors was significantly positively related to variability in ROA. This relationship became only marginally significant as more predictors were added. A performance challenge factor was also marginally positively significant.

Testing through ROE (Table 30) gives very similar results in that the same task challenge and performance challenge factors with marginal significance in the ROA regressions both are positively significantly related to performance variability. In this analysis, both stage 2 and stage 3 have statistically significant increases in explanatory power for performance variability.

The results from ROS (Table 31) are somewhat different from the other analyses. Once again, stage 2 and 3 have a significant increase in R^2. The same performance challenge factor is significantly positively related to performance variability. However, the task challenge factor that had been previously significantly

Table 29

Hypothesis 4: Performance Variability (ROA) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.210	**	-0.185	*	-0.163	+	-0.166	+	2.277	0.439
Firm Age	-0.234	***	-0.210	**	-0.212	**	-0.214	**	2.212	0.452
CEO Age	0.018		0.090		0.076		0.055		1.524	0.656
Industry	-0.312	***	-0.282	***	-0.254	***	-0.257	***	1.277	0.783
Task Challenges 1			-0.113		-0.132		-0.131		1.908	0.524
Task Challenges 2			0.103		0.077		0.075		1.434	0.697
Task Challenges 3			0.145	*	0.138	+	0.129	+	1.356	0.737
Task Challenges 4			-0.067		-0.069		-0.067		1.310	0.763
Performance Challenges 1					0.118	+	0.119	+	1.128	0.886
Performance Challenges 2					0.017		0.004		1.294	0.773
CEO Education Level							-0.012		1.147	0.872
Entrepreneur CEO							-0.029		1.228	0.814
Age Became CEO							0.037		2.184	0.458
CEO Incentive Pay							-0.022		1.147	0.871
Change in R^2	0.206		0.040		0.013		0.003			
F value	12.68	***	2.53	*	1.67		0.17			
Total R^2	0.206		0.246		0.259		0.262			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 30

Hypothesis 4: Performance Variability (ROE) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.123	+	-0.106		-0.086		-0.066		2.136	0.468
Firm Age	-0.065		-0.091		-0.080		-0.081		1.514	0.660
CEO Age	-0.083		-0.002		-0.036		-0.050		2.208	0.453
Task Challenges 1			-0.029		-0.040		-0.045		1.715	0.583
Task Challenges 2			0.115		0.095		0.090		1.431	0.699
Task Challenges 3			0.170	*	0.178	*	0.173	*	1.355	0.738
Task Challenges 4			0.038		0.043		0.044		1.310	0.763
Performance Challenges 1					0.223	*	0.221	**	1.059	0.945
Performance Challenges 2					-0.111		-0.126		1.290	0.775
CEO Education Level							0.063		1.126	0.888
Entrepreneur CEO							-0.014		1.228	0.814
Age Became CEO							0.005		2.165	0.462
CEO Incentive Pay							-0.044		1.145	0.873
Change in R^2	0.035		0.040		0.055		0.006			
F value	2.37	+	2.07	*	6.00	**	0.31			
Total R^2	0.035		0.075		0.130		0.136			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 31

Hypothesis 4: Performance Variability (ROS) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.353	***	-0.155	+	-0.138		-0.125		2.226	0.449
Firm Age	-0.170	**	-0.159	*	-0.142	+	-0.143	+	1.547	0.647
CEO Age	-0.044		0.018		-0.012		-0.004		2.324	0.430
Industry	0.008		-0.073		-0.096		-0.102		1.223	0.818
Task Challenges 1			-0.153	+	-0.160	*	-0.152	+	1.745	0.573
Task Challenges 2			0.227	**	0.232	**	0.238	***	1.465	0.683
Task Challenges 3			0.079		0.090		0.076		1.369	0.730
Task Challenges 4			0.208	**	0.220	***	0.243	***	1.406	0.711
Performance Challenges 1					0.128	*	0.131	*	1.059	0.944
Performance Challenges 2					-0.123	+	-0.127	+	1.344	0.744
CEO Education Level							-0.047		1.126	0.888
Entrepreneur CEO							-0.061		1.228	0.814
Age Became CEO							-0.004		2.187	0.457
CEO Incentive Pay							-0.070		1.151	0.868
Change in R^2	0.199		0.094		0.027		0.099			
F value	12.14	***	6.32	***	3.70	*	0.65			
Total R^2	0.199		0.293		0.320		0.329			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 32

Hypothesis 4: Performance Variability (Tobin's Q) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.212	***	-0.056		-0.063		-0.117		2.163	0.462
Firm Age	-0.175	**	-0.112	+	-0.117	+	-0.128	*	1.530	0.654
CEO Age	-0.029		-0.072		-0.059		-0.023		2.228	0.449
Industry	-0.606	***	-0.599	***	-0.606	***	-0.593	***	1.383	0.723
Task Challenges 1			-0.233	***	-0.229	***	-0.239	***	1.743	0.574
Task Challenges 2			-0.032		-0.028		-0.017		1.491	0.670
Task Challenges 3			-0.101	+	-0.108	+	-0.102	+	1.364	0.733
Task Challenges 4			0.053		0.054		0.008		1.476	0.678
Performance Challenges 1					-0.074		-0.078		1.091	0.917
Performance Challenges 2					0.058		0.066		1.318	0.759
CEO Education Level							-0.022		1.138	0.879
Entrepreneur CEO							-0.091		1.237	0.808
Age Became CEO							-0.043		2.177	0.459
CEO Incentive Pay							0.189	***	1.152	0.868
Change in R^2	0.431		0.043		0.008		0.039			
F value	36.99	***	3.88	**	1.38		3.76	**		
Total R^2	0.431		0.474		0.482		0.521			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

positively related no longer has a significant relationship. Despite this change, two other of the task challenge factors are significantly positively related to performance variability. Surprisingly, the fourth task challenge factor and the other performance challenge factor are negatively related to variability, even if only marginally so. This somewhat surprising finding will be discussed in greater detail in Chapter 5. Finally, testing hypothesis 4 with Tobin's Q (Table 32) had equally surprising results. Stage 2 and 4 both had significant increases in R^2. However, while all of the previous analyses had shown a significant and positive relationship between task challenges and performance variability, this analysis shows a significant and negative relationship between one of the task challenge factors and variability (with an additional task challenge factor negatively marginally significant). This surprising relationship will also be discussed in Chapter 5. In addition to this finding, CEO incentive pay was significantly positively related to performance variability. While this does fit the hypothesis, the fact that it is the only executive aspiration factor in all four tests of performance variability to be significant may be again connected to a relationship between incentive pay and Tobin's Q outside of any relationship related to demands.

Hypothesis 5 a-b

Hypotheses 5a and b suggests that the relationship between demands and firm performance would be mediated through Strategic Conformity and Strategic Dynamism. To test this hypothesis, I first tested the relationship between my measures of demands and financial performance (stage 2). I then tested the relationships between conformity and performance as well as dynamism and performance (stage 3). Finally I tested the full model with demands and conformity/dynamism to examine if the relationships from

Table 33

Hypothesis 5a: ROA Mediated through Conformity (Conformity 1) Regression Results

Variables	Stage 1	Stage 2		Stage 3	Stage 4		VIF	Tol
Firm Size	-0.053	-0.015		-0.064	-0.022		4.194	0.238
Firm Age	-0.038	-0.224		-0.032	-0.249		2.719	0.368
CEO Age	-0.116	0.080		-0.127	0.101		3.253	0.307
Task Challenges 1		-0.262			-0.243		2.658	0.376
Task Challenges 2		-0.546	***		-0.558	***	1.697	0.589
Task Challenges 3		0.057			0.065		2.051	0.488
Task Challenges 4		0.034			0.031		2.277	0.439
Performance Challenges 1		-0.111			-0.114		1.260	0.793
Performance Challenges 2		0.276	+		0.273	+	1.540	0.649
CEO Education Level		-0.141			-0.158		1.424	0.702
Entrepreneur CEO		-0.243			-0.263		2.298	0.435
Age Became CEO		-0.241			-0.244		3.565	0.281
CEO Incentive Pay		-0.091			-0.087		1.437	0.696
Conformity				-0.053				
Conformity (Mediated)					0.062		1.354	0.739
Change in R^2	0.021	0.398		0.003	0.003			
F value	0.40	2.94	**	0.14	0.21			
Total R^2	0.021	0.408		0.024	0.411			

N=59

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 34

Hypothesis 5a: ROE Mediated through Conformity (Conformity 1) Regression Results

Variables	Stage 1	Stage 2		Stage 3	Stage 4		VIF	Tol
Firm Size	0.149	-0.068		0.154	-0.084		4.194	0.238
Firm Age	0.058	-0.204		0.055	-0.257		2.719	0.368
CEO Age	-0.165	0.222		-0.161	0.266		3.253	0.307
Task Challenges 1		0.219			0.259		2.658	0.376
Task Challenges 2		-0.392	*		-0.417	*	1.697	0.589
Task Challenges 3		0.152			0.169		2.051	0.488
Task Challenges 4		-0.075			-0.082		2.277	0.439
Performance Challenges 1		-0.138			-0.144		1.260	0.793
Performance Challenges 2		0.246			0.237		1.540	0.649
CEO Education Level		-0.067			-0.103		1.424	0.702
Entrepreneur CEO		-0.197			-0.240		2.298	0.435
Age Became CEO		-0.416	+		-0.423	+	3.565	0.281
CEO Incentive Pay		-0.220			-0.212		1.437	0.696
Conformity				0.021				
Conformity (Mediated)					0.131		1.354	0.739
Change in R^2	0.058	0.281		0.000	0.013			
F value	1.13	1.92	+	0.02	0.86			
Total R^2	0.058	0.339		0.058	0.352			

N=59

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 35

Hypothesis 5a: ROS Mediated through Conformity (Conformity 1) Regression Results

Variables	Stage 1	Stage 2		Stage 3	Stage 4		VIF	Tol
Firm Size	-0.019	-0.012		-0.035	-0.019		4.194	0.238
Firm Age	-0.089	-0.382	*	-0.080	-0.404	*	2.719	0.368
CEO Age	0.005	0.122		-0.010	0.141		3.253	0.307
Task Challenges 1		-0.119			-0.102		2.658	0.376
Task Challenges 2		-0.574	***		-0.584	***	1.697	0.589
Task Challenges 3		0.165			0.172		2.051	0.488
Task Challenges 4		0.149			0.146		2.277	0.439
Performance Challenges 1		-0.039			-0.042		1.260	0.793
Performance Challenges 2		0.208			0.204		1.540	0.649
CEO Education Level		-0.123			-0.139		1.424	0.702
Entrepreneur CEO		-0.185			-0.203		2.298	0.435
Age Became CEO		-0.121			-0.124		3.565	0.281
CEO Incentive Pay		-0.054			-0.051		1.437	0.696
Conformity				-0.069				
Conformity (Mediated)					0.056		1.354	0.739
Change in R^2	0.010	0.367		0.004	0.002			
F value	0.18	2.65	*	0.25	0.16			
Total R^2	0.010	0.377		0.014	0.379			

N=59

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 36

Hypothesis 5a: Tobin's Q Mediated through Conformity (Conformity 1) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.160		0.265		-0.190		0.272		4.194	0.238
Firm Age	-0.157		-0.081		-0.139		-0.061		2.719	0.368
CEO Age	-0.166		-0.061		-0.196		-0.078		3.253	0.307
Task Challenges 1			-0.494	**			-0.510	**	2.658	0.376
Task Challenges 2			-0.196				-0.186		1.697	0.589
Task Challenges 3			-0.345	*			-0.352	*	2.051	0.488
Task Challenges 4			0.258	+			0.261	+	2.277	0.439
Performance Challenges 1			-0.211	+			-0.208	+	1.260	0.793
Performance Challenges 2			0.173				0.176		1.540	0.649
CEO Education Level			-0.241	*			-0.227	+	1.424	0.702
Entrepreneur CEO			-0.385	*			-0.368	*	2.298	0.435
Age Became CEO			-0.236				-0.234		3.565	0.281
CEO Incentive Pay			-0.057				-0.060		1.437	0.696
Conformity					-0.137					
Conformity (Mediated)							-0.051		1.354	0.739
Change in R^2	0.112		0.428		0.017		0.002			
F value	2.31	+	4.19	***	1.08		0.18			
Total R^2	0.112		0.540		0.129		0.542			

N=59

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 37

Hypothesis 5a: ROA Mediated through Conformity (Conformity 2) Regression Results

Variables	Stage 1	Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	0.075	0.040		0.065		0.047		2.141	0.467
Firm Age	-0.043	-0.105		-0.036		-0.104		1.514	0.660
CEO Age	-0.018	0.006		-0.039		-0.007		2.226	0.449
Task Challenges 1		-0.167	+			-0.168	+	1.715	0.583
Task Challenges 2		-0.287	***			-0.280	***	1.436	0.696
Task Challenges 3		0.100				0.103		1.356	0.737
Task Challenges 4		0.030				0.058		1.389	0.720
Performance Challenges 1		-0.088				-0.073		1.080	0.926
Performance Challenges 2		0.199	**			0.195	*	1.293	0.774
CEO Education Level		-0.062				-0.063		1.126	0.888
Entrepreneur CEO		-0.053				-0.053		1.228	0.814
Age Became CEO		-0.060				-0.067		2.170	0.461
CEO Incentive Pay		0.103				0.096		1.151	0.869
Conformity				-0.125	+				
Conformity (Mediated)						-0.107		1.126	0.888
Change in R^2	0.006	0.144		0.015		0.010			
F value	0.39	3.15	***	3.01	+	2.23			
Total R^2	0.006	0.150		0.021		0.160			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 38

Hypothesis 5a: ROE Mediated through Conformity (Conformity 2) Regression Results

Variables	Stage 1	Stage 2	Stage 3	Stage 4	VIF	Tol
Firm Size	0.149	0.008	0.138	0.014	2.141	0.467
Firm Age	0.014	-0.035	0.021	-0.033	1.514	0.660
CEO Age	-0.001	0.003	-0.021	-0.009	2.226	0.449
Task Challenges 1		0.089		0.089	1.715	0.583
Task Challenges 2		-0.203 *		-0.197 *	1.436	0.696
Task Challenges 3		0.108		0.111	1.356	0.737
Task Challenges 4		-0.112		-0.088	1.389	0.720
Performance Challenges 1		-0.040		-0.027	1.080	0.926
Performance Challenges 2		0.093		0.089	1.293	0.774
CEO Education Level		0.074		0.073	1.126	0.888
Entrepreneur CEO		0.098		0.099	1.228	0.814
Age Became CEO		-0.038		-0.044	2.170	0.461
CEO Incentive Pay		-0.019		-0.025	1.151	0.869
Conformity			-0.120 +			
Conformity (Mediated)				-0.091	1.126	0.888
Change in R^2	0.024	0.068	0.014	0.007		
F value	1.58	1.40	2.82 +	1.50		
Total R^2	0.024	0.092	0.038	0.099		

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 39

Hypothesis 5a: ROS Mediated through Conformity (Conformity 2) Regression Results

Variables	Stage 1	Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.027	-0.198	*	-0.040		-0.191	+	2.141	0.467
Firm Age	-0.008	-0.114		0.000		-0.113		1.514	0.660
CEO Age	0.058	0.028		0.033		0.014		2.226	0.449
Task Challenges 1		0.022				0.021		1.715	0.583
Task Challenges 2		-0.317	***			-0.309	***	1.436	0.696
Task Challenges 3		0.087				0.091		1.356	0.737
Task Challenges 4		-0.028				0.002		1.389	0.720
Performance Challenges 1		-0.125	+			-0.110		1.080	0.926
Performance Challenges 2		0.170	*			0.165	*	1.293	0.774
CEO Education Level		-0.012				-0.013		1.126	0.888
Entrepreneur CEO		-0.044				-0.044		1.228	0.814
Age Became CEO		0.003				-0.005		2.170	0.461
CEO Incentive Pay		0.158	*			0.150	*	1.151	0.869
Conformity				-0.150	*				
Conformity (Mediated)						-0.112		1.126	0.888
Change in R^2	0.004	0.137		0.022		0.011			
F value	0.25	2.96	**	4.34	*	2.42			
Total R^2	0.004	0.141		0.026		0.152			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 40

Hypothesis 5a: Tobin's Q Mediated through Conformity (Conformity 2) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.091		-0.018		-0.098		-0.007		2.171	0.461
Firm Age	-0.071		-0.037		-0.067		-0.036		1.530	0.654
CEO Age	-0.070		-0.065		-0.094		-0.079		2.243	0.446
Industry	-0.489	***	-0.463	***	-0.466	***	-0.449	***	1.397	0.716
Task Challenges 1			-0.260	***			-0.263	***	1.744	0.573
Task Challenges 2			-0.079				-0.074		1.493	0.670
Task Challenges 3			-0.098				-0.093		1.366	0.732
Task Challenges 4			0.002				0.031		1.534	0.652
Performance Challenges 1			-0.169	**			-0.149	*	1.119	0.894
Performance Challenges 2			0.149	*			0.146	*	1.319	0.758
CEO Education Level			-0.093				-0.096		1.138	0.879
Entrepreneur CEO			-0.093				-0.092		1.237	0.808
Age Became CEO			-0.016				-0.026		2.184	0.458
CEO Incentive Pay			0.162	**			0.154	*	1.156	0.865
Conformity					-0.155	*				
Conformity (Mediated)							-0.128	*	1.137	0.879
Change in R^2	0.25		0.14		0.02		0.02			
F value	16.118	***	4.209	***	6.076	*	4.466	*		
Total R^2	0.248		0.388		0.271		0.402			

N=200

stage 2 were reduced (partially mediated) or eliminated (fully mediated) with the inclusion of conformity/dynamism (Baron & Kenny, 1986).

Using the Conformity 1 measure (Tables 33-36), I found no support for hypothesis 5a. There was no significant relationship found between conformity and any of the measures of performance (ROA, ROE, ROS and Tobin's Q). Again, there are power concerns as to the veracity of this non-relationship. The smallest changes in R^2 detectable are 0.12 in stages 3 and 4. While this is smaller than a medium effect (0.1304), it isn't by much. While no relationship is detected, it may still possible that such a relationship exists.

To further test such I relationship, I next looked at the Conformity 2 measure. The results in these analyses (Tables 37-40), also do not provide much support for the hypothesis. Evaluating Hypothesis 5a with ROA and ROE (Tables 37 and 38), conformity only marginally significantly affects performance by itself. This marginal relationship is not present in the full model in stage 4 and the standardized betas and significance of the demands variables are not affected by much if at all. ROS (Table 39) still does not show much support. Conformity, by itself, is significant at the $p < 0.05$ level, but again this relationship is not present in the full model and again there is no real affect on standardized betas or significance for the demands variables. Tobin's Q (Table 40) does provide some possibility for support. Conformity does remain significant in the full model, however, there is not a particularly large change (if any change exists) in standardized betas or significance of the demands variables. The power observed is fairly reasonable in that smallest changes in R^2 detectable are 0.04 in stages 3 and 4. Hypothesis 5a is disconfirmed.

Table 41

Hypothesis 5b: ROA Mediated through Dynamism (Dynamism 1) Regression Results

Variables	Stage 1	Stage 2	Stage 3	Stage 4	VIF	Tol
Firm Size	0.035	0.270	-0.107	0.071	5.019	0.199
Firm Age	0.060	-0.032	0.035	-0.099	2.597	0.385
CEO Age	-0.146	0.142	-0.192	0.121	3.568	0.280
Task Challenges 1		-0.375 +		-0.288	3.011	0.332
Task Challenges 2		-0.346 +		-0.298 +	1.906	0.525
Task Challenges 3		0.058		0.167	2.217	0.451
Task Challenges 4		0.214		0.219	2.354	0.425
Performance Challenges 1		-0.004		-0.008	1.374	0.728
Performance Challenges 2		0.233		0.198	1.576	0.635
CEO Education Level		-0.227		-0.180	1.369	0.730
Entrepreneur CEO		-0.339		-0.354 +	2.609	0.383
Age Became CEO		-0.315		-0.301	3.849	0.260
CEO Incentive Pay		-0.144		-0.127	1.610	0.621
Dynamism			-0.330 *			
Dynamism (Mediated)				-0.302 +	1.632	0.613
Change in R^2	0.025	0.313	0.083	0.056		
F value	0.43	1.89 +	4.57 *	3.60 +		
Total R^2	0.025	0.338	0.108	0.394		

N=54

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 42

Hypothesis 5b: ROE Mediated through Dynamism (Dynamism 1) Regression Results

Variables	Stage 1		Stage 2	Stage 3		Stage 4	VIF	Tol
Firm Size	0.170		0.118	0.162		0.117	5.019	0.199
Firm Age	0.144		0.002	0.143		0.001	2.597	0.385
CEO Age	-0.242	+	0.054	-0.244	+	0.053	3.568	0.280
Task Challenges 1			0.056			0.057	3.011	0.332
Task Challenges 2			-0.204			-0.204	1.906	0.525
Task Challenges 3			0.094			0.095	2.217	0.451
Task Challenges 4			0.054			0.054	2.354	0.425
Performance Challenges 1			-0.059			-0.059	1.374	0.728
Performance Challenges 2			0.232			0.232	1.576	0.635
CEO Education Level			-0.159			-0.159	1.369	0.730
Entrepreneur CEO			-0.146			-0.146	2.609	0.383
Age Became CEO			-0.265			-0.265	3.849	0.260
CEO Incentive Pay			-0.153			-0.153	1.610	0.621
Dynamism				-0.018				
Dynamism (Mediated)						-0.002	1.632	0.613
Change in R^2	0.121		0.114	0.000		0.000		
F value	2.29	+	0.59	0.01		0.00		
Total R^2	0.121		0.235	0.121		0.235		

N=54

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 43

Hypothesis 5b: ROS Mediated through Dynamism (Dynamism 1) Regression Results

Variables	Stage 1	Stage 2	Stage 3	Stage 4	VIF	Tol
Firm Size	0.066	0.204	-0.017	0.057	5.019	0.199
Firm Age	-0.023	-0.234	-0.038	-0.283	2.597	0.385
CEO Age	0.021	0.182	-0.006	0.167	3.568	0.280
Task Challenges 1		-0.201		-0.137	3.011	0.332
Task Challenges 2		-0.360 +		-0.326 +	1.906	0.525
Task Challenges 3		0.184		0.265	2.217	0.451
Task Challenges 4		0.303		0.306	2.354	0.425
Performance Challenges 1		0.054		0.050	1.374	0.728
Performance Challenges 2		0.133		0.107	1.576	0.635
CEO Education Level		-0.166		-0.132	1.369	0.730
Entrepreneur CEO		-0.296		-0.307	2.609	0.383
Age Became CEO		-0.141		-0.130	3.849	0.260
CEO Incentive Pay		-0.047		-0.034	1.610	0.621
Dynamism			-0.192			
Dynamism (Mediated)				-0.223	1.632	0.613
Change in R^2	0.004	0.296	0.028	0.030		
F value	0.06	1.69	1.42	1.77		
Total R^2	0.004	0.300	0.032	0.330		

N=54

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 44

Hypothesis 5b: Tobin's Q Mediated through Dynamism (Dynamism 1) Regression Results

Variables	Stage 1	Stage 2		Stage 3	Stage 4		VIF	Tol
Firm Size	-0.107	0.190		-0.212	0.137		5.019	0.199
Firm Age	-0.136	-0.045		-0.154	-0.063		2.597	0.385
CEO Age	-0.157	0.118		-0.191	0.112		3.568	0.280
Task Challenges 1		-0.593	**		-0.569	**	3.011	0.332
Task Challenges 2		-0.202			-0.189		1.906	0.525
Task Challenges 3		-0.309	*		-0.280	+	2.217	0.451
Task Challenges 4		0.180			0.181		2.354	0.425
Performance Challenges 1		-0.264	*		-0.265	*	1.374	0.728
Performance Challenges 2		0.188			0.178		1.576	0.635
CEO Education Level		-0.157			-0.144		1.369	0.730
Entrepreneur CEO		-0.655	***		-0.659	***	2.609	0.383
Age Became CEO		-0.447	*		-0.443	*	3.849	0.260
CEO Incentive Pay		0.082			0.086		1.610	0.621
Dynamism				-0.245				
Dynamism (Mediated)					-0.081		1.632	0.613
Change in R^2	0.074	0.490		0.046	0.004			
F value	1.33	4.49	***	2.56	0.36			
Total R^2	0.074	0.563		0.120	0.567			

N=54

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 45

Hypothesis 5b: ROA Mediated through Dynamism (Dynamism 2) Regression Results

Variables	Stage 1	Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	0.075	0.040		0.040		0.012		2.176	0.460
Firm Age	-0.043	-0.105		-0.021		-0.095		1.519	0.658
CEO Age	-0.018	0.006		-0.056		-0.004		2.213	0.452
Task Challenges 1		-0.167	+			-0.148	+	1.734	0.577
Task Challenges 2		-0.287	***			-0.262	***	1.464	0.683
Task Challenges 3		0.100				0.117		1.370	0.730
Task Challenges 4		0.030				0.039		1.315	0.761
Performance Challenges 1		-0.088				-0.074		1.069	0.935
Performance Challenges 2		0.199	**			0.197	*	1.290	0.775
CEO Education Level		-0.062				-0.062		1.126	0.888
Entrepreneur CEO		-0.053				-0.060		1.230	0.813
Age Became CEO		-0.060				-0.073		2.174	0.460
CEO Incentive Pay		0.103				0.103		1.145	0.873
Dynamism				-0.192	**				
Dynamism (Mediated)						-0.149	*	1.147	0.872
Change in R^2	0.006	0.144		0.035		0.019			
F value	0.39	3.15	***	7.04	**	4.30	*		
Total R^2	0.006	0.150		0.041		0.169			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 46

Hypothesis 5b: ROE Mediated through Dynamism (Dynamism 2) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	0.149	*	0.008		0.137	+	0.000		2.176	0.460
Firm Age	0.014		-0.035		0.022		-0.031		1.519	0.658
CEO Age	-0.001		0.003		-0.015		-0.001		2.213	0.452
Task Challenges 1			0.089				0.095		1.734	0.577
Task Challenges 2			-0.203	*			-0.195	*	1.464	0.683
Task Challenges 3			0.108				0.114		1.370	0.730
Task Challenges 4			-0.112				-0.109		1.315	0.761
Performance Challenges 1			-0.040				-0.035		1.069	0.935
Performance Challenges 2			0.093				0.093		1.290	0.775
CEO Education Level			0.074				0.074		1.126	0.888
Entrepreneur CEO			0.098				0.096		1.230	0.813
Age Became CEO			-0.038				-0.042		2.174	0.460
CEO Incentive Pay			-0.019				-0.019		1.145	0.873
Dynamism					-0.066					
Dynamism (Mediated)							-0.047		1.147	0.872
Change in R^2	0.024		0.068		0.004		0.002			
F value	1.58		1.40		0.83		0.39			
Total R^2	0.024		0.092		0.028		0.094			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 47

Hypothesis 5b: ROS Mediated through Dynamism (Dynamism 2) Regression Results

Variables	Stage 1	Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.027	-0.198	*	-0.067		-0.233	*	2.176	0.460
Firm Age	-0.008	-0.114		0.017		-0.102		1.519	0.658
CEO Age	0.058	0.028		0.014		0.015		2.213	0.452
Task Challenges 1		0.022				0.046		1.734	0.577
Task Challenges 2		-0.317	***			-0.285	***	1.464	0.683
Task Challenges 3		0.087				0.109		1.370	0.730
Task Challenges 4		-0.028				-0.016		1.315	0.761
Performance Challenges 1		-0.125	+			-0.108		1.069	0.935
Performance Challenges 2		0.170	*			0.167	*	1.290	0.775
CEO Education Level		-0.012				-0.012		1.126	0.888
Entrepreneur CEO		-0.044				-0.053		1.230	0.813
Age Became CEO		0.003				-0.014		2.174	0.460
CEO Incentive Pay		0.158	*			0.158	*	1.145	0.873
Dynamism				-0.224	**				
Dynamism (Mediated)						-0.186	**	1.147	0.872
Change in R^2	0.004	0.137		0.047		0.030			
F value	0.25	2.96	**	9.63	**	6.73	**		
Total R^2	0.004	0.141		0.051		0.171			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 48

Hypothesis 5b: Tobin's Q Mediated through Dynamism (Dynamism 2) Regression Results

Variables	Stage 1		Stage 2		Stage 3		Stage 4		VIF	Tol
Firm Size	-0.091		-0.018		-0.119		-0.037		2.207	0.453
Firm Age	-0.071		-0.037		-0.053		-0.029		1.536	0.651
CEO Age	-0.070		-0.065		-0.100		-0.072		2.235	0.447
Industry	-0.489	***	-0.463	***	-0.492	***	-0.470	***	1.388	0.720
Task Challenges 1			-0.260	***			-0.246	***	1.765	0.567
Task Challenges 2			-0.079				-0.061		1.530	0.654
Task Challenges 3			-0.098				-0.087		1.378	0.726
Task Challenges 4			0.002				0.010		1.485	0.674
Performance Challenges 1			-0.169	**			-0.161	**	1.099	0.910
Performance Challenges 2			0.149	*			0.147	*	1.319	0.758
CEO Education Level			-0.093				-0.093		1.138	0.879
Entrepreneur CEO			-0.093				-0.099		1.240	0.806
Age Became CEO			-0.016				-0.025		2.185	0.458
CEO Incentive Pay			0.162	**			0.162	**	1.152	0.868
Dynamism					-0.155	*				
Dynamism (Mediated)							-0.100		1.151	0.869
Change in R^2	0.248		0.139		0.022		0.009			
F value	16.12	***	4.21	***	5.98	*	2.62			
Total R^2	0.248		0.388		0.271		0.396			

N=200

Hypothesis 5b looks at whether the relationship between job demands and performance is mediated through strategic dynamism. The strategic dynamism 1 measure, like the strategic conformity 1 measure, does not provide much support for the hypothesis. There is no significance for the dynamism measure on ROE, ROS or Tobin's Q (Tables 42-44). ROA (Table 41) provides some evidence, but still not significant findings. Dynamism does significantly impact ROA by itself; however, that significance drops to $p<0.10$ level in the complete model. Further, there are no significant relationships (at the $p<0.05$ level) between demands and ROA to mediate. However, it may be illustrative to look at the marginally significant results. Two of the task challenges factors were marginally significant (at the $p<0.10$) level in stage 2, but when dynamism was included, one lost even that marginal significance and the other's standardized beta was reduced. While this does not provide supportable results, it does give some indication that a relationship may exist, especially given the power considerations (the smallest change in R^2 detectable is again 0.12 in stages 3 and 4).

Testing using the dynamism 2 measure does seem to provide more support. ROE and Tobin's Q (Tables 46 and 48, respectively) did not give any support for this hypothesis. Dynamism was not significantly related to ROE in either stage. There was a significant relationship with Tobin's Q alone, but that relationship was reduced to nonsignificance in the full model and the standardized betas were not affected. ROA (Table 45) does seem to provide at least some support for the hypothesis. Dynamism significantly affects ROA in both stage 3 and 4, and the standardized betas for two task challenge factors (the same two in the dynamism 1 regression) did go down. ROS provides additional support. Dynamism is significantly related to ROS both alone and in

the full model. Further, the standardized beta for the significant task challenge factor does go down (there is a significant performance challenge factor, but its standardized beta is not particularly affected by dynamism). While the hypothesis is not supported in that there is not full mediation, there is some support for dynamism partially mediating the relationship between demands and performance.

Hypothesis 6 a-b and 7 a-b

Hypotheses 6 a-b suggested that CEO Tenure would have a relationship with strategic conformity and strategic dynamism. This relationship was further expected to be stronger as job demands increase (proposed as Hypotheses 7 a-b). Before testing these hypothesis, I must first address an issue with multicollinearity. In initial regressions for these hypotheses, the VIF/Tolerances were well beyond the 10/0.1 threshold that even liberal rules of thumb find acceptable for the CEO Tenure and the interaction effect between CEO Tenure and the age the individual became a CEO variables (seen in Table 49). CEO tenure is vital to the analysis, so that variable cannot be dropped. Therefore, the tests were run omitting the interaction variable of CEO Tenure and the age the individual became a CEO. While the VIF/Tolerances were still above the conservative threshold of 2 (and slightly above the more liberal threshold of 10 in one case) in the full models, the key test really exists in the stage 2 regressions where all VIF/Tolerences are within thresholds. However, in none of the regressions (Tables 50-53) is CEO tenure significantly related to strategic conformity or strategic dynamism. Because there is no significant relationship between those variables, there is no relationship to moderate, so both Hypothesis 6 a-b and Hypothesis 7 a-b are disconfirmed.

TABLE 49

VIFs/Tolerances for Hypothesis 6 a-b & 7 a-b Regression

	Conformity 1		Conformity 2		Dynamism 1		Dynamism 2	
Variables	VIF	Tol	VIF	Tol	VIF	Tol	VIF	Tol
Firm Size	4.502	0.222	2.067	0.484	4.718	0.212	2.065	0.484
Firm Age	2.723	0.367	1.496	0.668	2.520	0.397	1.452	0.689
CEO Age	2.638	0.379	2.007	0.498	2.772	0.361	1.974	0.507
Industry	1.416	0.706	1.297	0.771	1.527	0.655		
CEO Tenure	**33.779**	**0.030**	**18.538**	**0.054**	**41.460**	**0.024**	**18.490**	**0.054**
Tenure x Task Challenges 1	2.839	0.352	1.661	0.602	2.970	0.337	1.658	0.603
Tenure x Task Challenges 2	1.882	0.531	1.805	0.554	2.510	0.398	1.748	0.572
Tenure x Task Challenges 3	3.158	0.317	1.357	0.737	3.135	0.319	1.357	0.737
Tenure x Task Challenges 4	2.194	0.456	1.431	0.699	2.197	0.455	1.305	0.766
Tenure x Performance Challenges 1	1.467	0.682	1.125	0.889	1.483	0.674	1.119	0.894
Tenure x Performance Challenges 2	1.847	0.541	1.504	0.665	2.152	0.465	1.435	0.697
Tenure x CEO Education Level	4.435	0.225	2.643	0.378	4.208	0.238	2.635	0.380
Tenure x Age Became CEO	**24.131**	**0.041**	**15.669**	**0.064**	**27.692**	**0.036**	**15.658**	**0.064**
Tenure x CEO Incentive Pay	4.564	0.219	2.937	0.341	5.629	0.178	2.936	0.341

Table 50

Hypothesis 6a & 7a: CEO Tenure and Strategic Conformity
Moderation Regression Results (Conformity 1 Measure)

	Stage 1		Stage 2		Stage 3		VIF	Tol
Firm Size	-0.083		-0.077		0.370		4.453	0.225
Firm Age	-0.083		-0.054		0.272		2.704	0.370
CEO Age	-0.250	*	-0.229	+	-0.412	**	1.537	0.650
Industry	0.550	**	0.560	***	0.521	***	1.404	0.712
CEO Tenure			-0.094		-0.206		8.796	0.114
Tenure x Task Challenges 1					-0.388	*	2.781	0.360
Tenure x Task Challenges 2					0.263	+	1.870	0.535
Tenure x Task Challenges 3					-0.434	*	3.145	0.318
Tenure x Task Challenges 4					0.186		2.194	0.456
Tenure x Performance Challenges 1					-0.050		1.457	0.686
Tenure x Performance Challenges 2					0.025		1.569	0.637
Tenure x CEO Education Level					0.317		4.301	0.232
Tenure x CEO Incentive Pay					-0.008		4.411	0.227
Change in R^2	0.334		0.007		0.146			
F value	6.78	***	0.54		1.61			
Total R^2	0.334		0.341		0.487			

N=54

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 51

Hypothesis 6a & 7a: CEO Tenure and Strategic Conformity
Moderation Regression Results (Conformity 2 Measure)

Variables	Stage 1		Stage 2		Stage 3		VIF	Tol
Firm Size	-0.025		-0.027		0.048		2.053	0.487
Firm Age	-0.005		-0.006		-0.050		1.494	0.670
CEO Age	-0.109		-0.111		-0.120		1.451	0.689
Industry	0.312	***	0.312	***	0.302	***	1.296	0.772
CEO Tenure			0.007		0.047		4.817	0.208
Tenure x Task Challenges 1					0.008		1.649	0.606
Tenure x Task Challenges 2					0.026		1.801	0.555
Tenure x Task Challenges 3					-0.004		1.329	0.752
Tenure x Task Challenges 4					0.118		1.406	0.711
Tenure x Performance Challenges 1					0.173	*	1.114	0.897
Tenure x Performance Challenges 2					0.018		1.279	0.782
Tenure x CEO Education Level					0.063		2.641	0.379
Tenure x CEO Incentive Pay					-0.055		2.887	0.346
Change in R^2	0.123		0.000		0.046			
F value	6.84	***	0.01		1.29			
Total R^2	0.123		0.123		0.169			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 52

Hypothesis 6b & 7b: CEO Tenure and Strategic Dynamism
Moderation Regression Results (Dynamism 1 Measure)

Variables	Stage 1		Stage 2		Stage 3		VIF	Tol
Firm Size	-0.296	+	-0.290	+	-0.467	+	4.717	0.212
Firm Age	-0.137		-0.094		-0.232		2.520	0.397
CEO Age	-0.112		-0.083		-0.025		1.518	0.659
Industry	-0.273	*	-0.276	*	-0.265		1.394	0.717
CEO Tenure			-0.124		-0.550	+	10.108	0.099
Tenure x Task Challenges 1					0.279		2.879	0.347
Tenure x Task Challenges 2					0.090		2.496	0.401
Tenure x Task Challenges 3					0.352		3.097	0.323
Tenure x Task Challenges 4					0.017		2.197	0.455
Tenure x Performance Challenges 1					0.079		1.472	0.680
Tenure x Performance Challenges 2					-0.117		1.727	0.579
Tenure x CEO Education Level					0.311		3.978	0.251
Tenure x CEO Incentive Pay					0.235		5.215	0.192
Change in R^2	0.297		0.012		0.094			
F value	5.18	***	0.84		0.79			
Total R^2	0.297		0.309		0.403			

N=54

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Table 53

Hypothesis 6b & 7b: CEO Tenure and Strategic Dynamism
Moderation Regression Results (Dynamism 2 Measure)

Variables	Stage 1		Stage 2		Stage 3		VIF	Tol
Firm Size	-0.180	*	-0.172	*	-0.173	+	2.050	0.488
Firm Age	0.113		0.121		0.069		1.450	0.690
CEO Age	-0.196	**	-0.181	*	-0.138	+	1.410	0.709
CEO Tenure			-0.048		-0.018		4.803	0.208
Tenure x Task Challenges 1					0.102		1.645	0.608
Tenure x Task Challenges 2					0.130		1.745	0.573
Tenure x Task Challenges 3					0.075		1.329	0.753
Tenure x Task Challenges 4					0.073		1.283	0.779
Tenure x Performance Challenges 1					0.112		1.108	0.902
Tenure x Performance Challenges 2					-0.030		1.204	0.831
Tenure x CEO Education Level					0.021		2.633	0.380
Tenure x CEO Incentive Pay					0.021		2.887	0.346
Change in R^2	0.064		0.002		0.044			
F value	4.48	**	0.39		1.16			
Total R^2	0.064		0.066		0.110			

N=200

*** Correlation is significant at the 0.001 level (two-tailed).

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

+ Correlation is significant at the 0.10 level (two-tailed).

Because of the weaknesses in my results, I decided to perform a further test of hypotheses 1, 2, 3 and 5a-b in an SEM model using SAS 9.2. This analysis used the Proc Calis command specifying a maximum likelihood estimation. Due to issues with negative eigenvalues, this analysis used the ridge option in Proc Calis to ridge the diagonal of the covariance matrix in order to obtain a matrix that was positive definite and therefore capable of testing. However, this technique prevents interpretability of standardized results and therefore unstandardized estimates are reported in my results. I analyzed both measurement and structural model simultaneously based upon Loehlin's (2004) observation that such approach is the typical process because " in so doing, one brings to bear all information available about each path" (89). I initially ran the model with: task challenges being measured by the quick ratio, current ratio, diversification, productivity, presence of COO/President, CEO duality, TMT heterogeneity, TMT firm tenure, and TMT team tenure; performance challenges measured by outside directors, outside directors appointed before the CEO, board stock ownership and institutional ownership; executive aspirations measured by CEO education level, age of CEO when they became CEO, CEO entrepreneurial activity and CEO bonus achievement; and financial performance being measured by ROA, ROE, ROS and Tobin's Q. In this initial analysis, no fit statistic suggested a good fitting model. In an attempt to improve fit, I first removed the latent variable executive aspirations and its associated manifest indicators from the model because my original factor analysis had suggested that those variables did not sufficiently factor together. I had included it in this analysis to see if the more sophisticated technique of SEM might find some relationship that my previous analyses did not, but executive aspirations removal did provide a better fitting model,

confirming that my measures of executive aspirations did not effectively measure the construct. While this model was a better fitting one, the fit statistics still did not indicate a good fitting model.

I continued respecifying the model in the hopes of finding a better fitting model. This respecification was undertaken with Anderson and Gerbing's (1988) advice that respecification must be driven by theory or content of the variable in mind. Theoretically, I reconsidered the appropriateness of the CEO duality measure. I conceptualized this measure as increasing demands because it added to the overall tasks that the CEO was responsible for performing. However, being chairperson of the board would also tend to increase the influence of the CEO over the board, increasing the latitude of action of the CEO and decreasing the demands placed on the CEO by the board (Hambrick & Finkelstein, 1987). Removing the CEO duality measure did improve the fit of the model.

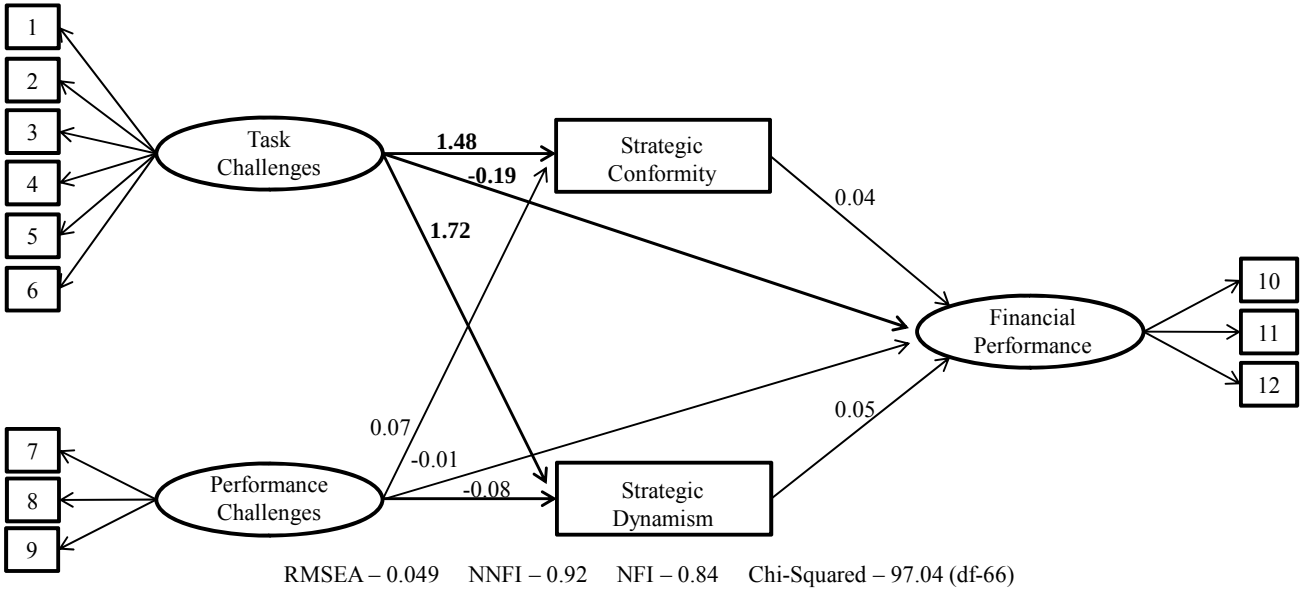
From a content perspective, I focused on the measures of slack, TMT team and firm tenure, outside directors and outside directors appointed after the CEO took his or her job and Tobin's Q. Compared to the other measures of financial performance, Tobin's Q focuses much more on the market performance of the firm and is remarkably different from the accounting based measures of ROA, ROE and ROS. Therefore I removed Tobin's Q from the model. Examining the pairs of variables, (current and quick ratio; TMT team and firm tenure; outside directors and outside directors appointed after the CEO took his or her job), each pair is conceptually and methodologly similar. The quick ratio is the current ratio with a correction for inventory. TMT tenure on the team and tenure in the firm are closely related in that a

TMT member who has been in the firm for a long time is likely also a long tenured member of the TMT. Conversely, many of the TMT members with a short tenure joined the firm as a member of the TMT, thus their team and firm tenure are the exact same. The measure of outside directors appointed after the CEO took his or her job and the outside directors measure are, like the slack measures, the same base measure with one being modified. I included all of these measures in an attempt to thoroughly measure the constructs. However, given the poor fit of my model, it seemed likely that their similarity was negatively affecting my results. I evaluated the competing models by including one variable of the pairs and evaluating the standard fit statistics of RMSEA, NNFI, NFI and Chi-Squared. Through this evaluation, the inclusion of the quick ratio, TMT team tenure and outside directors led to the best fitting model, and therefore only those variables were retained for the analysis.

The results of my analysis can be seen in figure 4. As can be seen, there is some support for hypotheses 1 and 2. There is also support for a modified hypothesis 3[11], such that demands would be seen to decrease financial performance. The fit statistics do, in general, suggest a well fitting model. The RMSEA statistic is less than 0.05, the prescribed value for a good fitting model. Further, the NNFI is above the suggested value of 0.90, also suggesting a good fitting model. The NFI statistic is below the

[11] While there were compelling arguments for a direct inverse-U shaped relationship between demands and performance, the stress literature might make an opposing hypothesis. There is the reality that tasks with a large number of stressors/demands are objectively more difficult. Objectively more difficult tasks do tend to have less positive results (Ganster, 2005) and so even if the demands themselves have a positive outcome on the efforts of the top managers, the outcomes are likely to be less positive than those of easier tasks. Given the impact top managers have on strategy and therefore subsequent firm performance, it may be that these demands-performance relationships will hold at the firm level because of the CEO's performance. Therefore, when demands are very high, financial performance is likely to be low.

FIGURE 4
Results of Structural Equations Modeling Analysis



RMSEA – 0.049 NNFI – 0.92 NFI – 0.84 Chi-Squared – 97.04 (df-66)

Significant paths in bold

Manifest Variables and Factor Loadings

1 Quick Ratio	0.034	7 Outside Directors	**0.029**
2 Diversification	0.012	8 Board Ownership	**-0.011**
3 Productivity	**0.042**	9 Institutional Inv.	**0.101**
4 COO/President	-0.004	10 ROA 2007	1
5 TMT Heterogeneity	**0.145**	11 ROE 2007	**2.808**
6 TMT Team Tenure	**0.055**	12 ROS 2007	**1.698**

Effect Decomposition for Performance and Sobel Tests

	Direct Effect	Indirect Effect	Total Effect	Sobel Test (Conformity)	Sobel Test (Dynamism)
Task Challenges	-0.1874	0.1403	-0.0471	1.9233	1.5527
Financial Challenges	-0.0104	-0.0231	-0.0335	0.4651	-0.2444

suggested value of 0.90, however, at 0.84, it is relatively close and with the other measures of fit indicating a good fitting model, this does not completely discount the likelihood of fit. However, the Chi-squared statistic suggests a very poor fitting model given that it is strongly significant ($p < 0.01$). While that statistic is concerning from the standpoint of good fit, it may be as much a function of sample size as an indicator of poor fit. The Chi-squared statistic is very susceptible to being influenced by a large sample size (such that this study's sample of 200 would dramatically increase the probability of finding significance). The RMSEA, a measure not dependent on sample size, suggesting good fit, provides confidence that this model is a good fitting one despite the Chi-squared results.

The paths from task challenges did show a significant positive relationship with strategic conformity and strategic dynamism, providing support for hypotheses 1 and 2. Performance challenges did not have a significant relationship to strategic conformity or strategic dynamism, weakening support for hypotheses 1 and 2. Hypothesis 3 has similar support, in that the path from task challenges to financial performance is significant and negative. However, performance challenges did not significantly impact financial performance, again weakening support for the hypothesis that job demands affect financial performance.

To test hypothesis 4, the mediation hypothesis, I took MacKinnon, Lockwood, Hoffman, West and Sheets (2002) suggestion to test the mediated paths simultaneously and use a Sobel test (1982) to evaluate if there is a mediated relationship.

The test is as follows:

$$ab/\ Sqrt\ (b^2s_a^{\ 2} + a^2s_b^{\ 2} + s_a^{\ 2}s_b^{\ 2}\ )$$

where:

a=Path from mediated variable to mediator
s_a =Standard error of path a
b= Path from mediator variable to dependent variable
s_b=Standard error of path

The results of this test are found in figure 4. As none of the tests were above ±1.96, there is no support for a mediated relationship and therefore hypotheses 5a and 5b are disconfirmed.

The results reported in this chapter found some support for hypotheses 1, 2 and 4. Hypothesis 5a and b were disconfirmed, however, there is some support for dynamism having a partial mediation relationship between demands and performance. 5. Hypotheses 3, 6 and 7 were disconfirmed. My follow-up SEM analysis increased my confidence in the relationships of hypotheses 1 and 2, found support for a modified hypothesis 3, but still found no support for hypotheses 5a and 5b. In Chapter 5, I will discuss what this might mean from a broader theoretical perspective and discuss future directions.

Chapter 5

Discussion

This dissertation has examined empirically executive job demands and their impact on decision processes and firm performance. Previous research on job demands and stressors was primarily concerned with the lower levels of the organization. While these studies gave particular insight into the functioning of the organization and the people that worked within it, moving the focus of attention onto top level executives seems an important and interesting area of research because of the impact on firm level outcomes from the decisions and behaviors of top executives (Carpenter et al., 2004). Hambrick et al., (2005a) set out an, until now, untested theoretical argument as to how job demands would affect strategic decisions and performance outcomes. This dissertation has tested those arguments as well as arguing that demands can affect performance variability. I have begun the work of operationalizing a meaningfully testable measure of the demands placed on a top executive. Further, I have shown appreciation for the assumed but rarely tested notion that the antecedents of decision making have an effect on performance mediated by the decisions made.

My results suggest that job demands have at least some effect on the conformity and dynamism of a firm's strategy as well as on the variability of their performance. While the evidence is not overwhelming, given that a minority of task or performance challenge factors were significant in each regression analysis and the latent variable performance was not significant in the SEM analysis, there is at least some indication that demands encourage managers to behave mimetically, lead to changes in strategy, and destabilize the financial performance in the firm. This provides at least some

support for the notion that demands constricts the lens through which managers perceive information. In a situation where a manager must reduce the number of multiple fallible indicators perceived and processed, they may be more likely to fall back on the best practices of the industry rather than doing a fuller search of possible alternatives and selecting the best one. Further, managers under stress may not be able to search for a number of possible alternatives or discussing those alternatives with others. By failing to obtain a "diversification of opinion" their alternatives will be more prone to the possibility of error, leading to more varying performance (Sah & Stiglitz, 1986, 1991). This also provides support for the idea that high demands distort the lens through which fallible indicators are perceived, leading to indicators being seen as a threat. This perspective would then lead to either the threat rigidity response or more risk seeking behavior and a vacillation between the two (Hambrick & D'Aveni, 1988) leading to increased dynamism in strategy.

The lack of findings for my moderation hypotheses (H6a-b & H7a-b) affect the argument that demands affect the lens. If demands are responsible for constricting the lens, then higher job demands should increase the degree to which prior experience encourages a manager to reduce their search and fall back on their habitual behavior. If demands are responsible for distorting the lens, then high job demands should reduce the managerial preferences of a long tenured manager to stay the course and not engage in domain changing, dynamic strategies. However, why these hypotheses were rejected may suggest some explanation other than that demands do not affect the lens. Some of the interaction effects between my measures of job demands and tenure are still significant. However, the hypotheses were disconfirmed because of the lack of

relationship between tenure and conformity or dynamism. Given previous research suggesting a relationship between TMT tenure and conformity or dynamism (Finkelstein and Hambrick, 1990), this result is fairly surprising. It is possible that given increasing uncertainty and speed of business change, highly tenured managers no longer have the luxury of avoiding dynamic strategies and instead focusing on their prior, industry standard, strategies. However, this may also be related to the data itself. As discussed, the data collected severely limited my ability to test the full conformity and dynamism measures (Conformity 1 and Dynamism 1) due to missing data. This led to low power tests of the full measures as well as an incomplete test of the overall construct in the Conformity and Dynamism 2 measures. Finkelstein and Hambrick (1990) had similar data limitations and also tested these measures separately. Their results were similar for both measurements, but the differences I found in my own results suggest that is not the case in my study. It is possible that with a more complete test of the full measures, the hypotheses will come out significant, offering confirmation of theory. Further discussion of this limitation is below.

The lack of confirmation of there being an inverse-U shaped relationship between demands and performance also merits discussion. There is something of a debate as to the legitimacy of the inverse-U shaped relationship (Ganster, 2005; Hambrick et al., 2005b). Ganster (2005) challenged that "research has not so far convincingly shown that there is a downturn in the monotonic positive relationship between arousal and performance" (497) and cited a review of the literature as support (Ganster & Schaubroeck, 1991). While Hambrick et al., (2005a) consider this idea to be somewhat supported (e.g. Jannsen, 2001), they concede that more research can be done

in attempts to find support for this relationship (Hambrick et al., 2005b). It appears as though this study supports Ganster's argument. It may also be that the relationship is obscured by the contrasting effects of stressors/activation and task difficulty. Challenge stressors/demands (LePine et al., 2005) and increased activation brought on by demands (Gardner, 1986; Gardner & Cummings, 1988) were suggested to increase performance. However, tasks that are more demanding and have larger numbers of stressors are more difficult and difficult tasks have less positive results (Ganster, 2005). This effect was likely seen in my SEM analysis, which did find a negative relationship between task challenges and financial performance.

The regression results may suggest a multidimensional approach to demands. This dissertation treated all aspects of demands as having similar effects on the dependent variables. When evaluating Hypothesis 3, while a number of task challenges were found to impact performance negatively (as would be expected without an activation theory effect), performance challenges were seen to positively impact performance. Evaluating this difference requires consideration of the differences in task and performance challenges. Task challenges are constraints placed on the top manager based upon characteristics of the organization and external environment. If the manager is heavily constrained, it would stand to reason that performance would be likely to diminish. However, performance challenges are conceptually a demand for a set level of performance from the owners. It equally stands to reason that if performance demands are high, managers will be striving more to increase performance, thus the positive relationship. This explanation may also be applicable to the negative results of performance challenges on variability. Such multidimensionality might also explain the

differing relationships with conformity and dynamism. There are relationships suggesting that task challenges and performance challenges increase conformity while only task challenges increase dynamism. Given that one of the attractive reasons to behave mimetically is because of the strategy's easy defensibility to shareholders, CEOs under high performance challenges may feel the need to defend their strategic choices all the more acutely. Conversely performance challenges might discourage dynamic behavior. Managers would take safer and less erratic strategic paths if high demands for performance are included. While the SEM analysis did not directly show differences in effects of task challenges and performance challenges, performance challenges did not have a significant effect on dynamism, conformity or financial performance. This may, in and of itself, be an indicator of multidimensionality. Further, while the path from performance challenges to dynamism was not significant, it was in a different direction from those of task challenges. It is possible that in further research a multidimensional effect on strategic processes and firm performance will be found.

Based upon my SEM analysis, there does not appear to be any mediating relationship of conformity or dynamism between the relationship of demands and performance. However, this may not be surprising. The organization that originates a given strategic act does so in an attempt to improve their performance. As more firms adopt that behavior, the performance improvement diminishes and following that behavior is used to show the firm as legitimate rather than to increase the financial performance of the firm (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Because firms engaging a conformity strategy are gaining legitimacy rather than increasing performance, the performance of these firms would be expected to conform to the

average returns for the industry. Therefore, as demands increase and managers look more towards copying the strategic behavior of exemplar firms than performing adequate scanning and interpretation to develop their own strategic direction, a firm with a CEO under high job demands might be expected to perform at a level near the average of the industry. Therefore, no real increase in performance would be recognized. With regards to dynamism, if demands are causing fallible indicators to be seen as threats and those threats are leading managers to engage in risk seeking behaviors it may be that the threatening indicators are actually indicative of an objectively harder task. Such a task, as suggested above, tends to have less positive results. If that is the case, the effect of the difficult task is overwhelming any impact of dramatically changing strategy. However, as I have already suggested, these results may be an artifact of data constraints rather than an actual picture of reality.

This dissertation has also provided a first step in recontextualizing upper echelons theorizing. Prior research has looked primarily at upper echelons as more of a process model: information comes in, is filtered by cognitive bases and values and lead to a firm's strategic outcome. The theoretical base of the lens model offers a step forward in explaining the effects of those bases and values on the decision maker. It interjects a "why" (Bacharach, 1989) into the discussion of upper echelons behavior. By looking at this idea through a demands perspective, I have had a focus on the tightening and distorting of a managers perceptual lens. However, upper echelons research has studied elements like international experience (Carpenter & Fredrickson, 2001; Carpenter, Sanders & Gregersen, 2001), extra-industry ties (Geletkanycz & Hambrick, 1997) or prior jobs outside the firm (Eisenhardt & Schoonhoven, 1996) that may just as

easily broaden the lens, allowing more fallible indicators to be perceived and processed. The lens model theoretical perspective should be more broadly applied to upper echelons research and should be used to further explicate the decision making processes underlying the cognitive bases and values and the subsequent outcomes.

Limitations and Directions for Future Research

Methodologically, there are four changes to be made in future studies. First, this study attempted to examine demands' effect on an executive: how did conditions in 2005 affect the strategic and performance outcomes of the firm? While there was some support found in this study, expanding the sample to a longitudinal study should provide added explanatory power to my hypothetical arguments. Providing evidence of an effect stable over time provides added generalizability and better evidence of an effect (or lack of one thereof). By examining over a longer period of time, some interesting other questions might be considered. First, if a longitudinal sample covered multiple CEOs from the same firm with relatively stable demands, I may find support towards considering the person vs. situation approach to demands. Further, it may consider differences in demands themselves, namely, are demands higher overall now than they were in prior years? Does a demanding job in one year become less demanding in future years, and, if so, does an executive's response change?

Second, while my sample was selected expecting to show the effects of job demands on some of the largest firms in the country across many industries, there were data limitations created by this sample that limited my ability to test theory. The data limitations of certain industries (lack of reporting advertising and R&D expenses; insufficient reporting in the economic census) hurt my analysis. By focusing on a

sample of fewer 2-digit NAICS industries, I will be able to gather uniform data from the Economic Census on elements of environmental complexity that, while untested here, are very likely contributors to the demands placed on managers (Hambrick et al., 2005a). I will also be able to focus in on industry with normative pressures on reporting of advertising and R&D as opposed to having data from industries with normative pressures against. This change will likely strengthen and improve my analysis of conformity and dynamism since the full measure suffered from severe power issues and the incomplete measure, while having prior use in the literature (Finkelstein & Hambrick, 1990), lacks the richness of the full measure. Further, by focusing on one or a few specific 2-digit NAICS industries, I may introduce more variation into my variables. By putting a focus on the S&P 500, I selected from some of the largest (and relatively stable) firms in the country. Perhaps by moving beyond these firms, I will see firms under much stronger demands and find more compelling results.

The failure of the executive aspirations variables to either factor together or to meaningfully predict the firm outcomes provides another strong limitation. Moving forward, different operationalizations must be used in order to capture this concept. My attempt to find reasonable proxies to map onto the Manifest Need Questionnaire's achievement scale did not work, however, the issues with obtaining sufficient survey data from CEOs is still problematic. The next step should be attempting to use content analysis of CEO interviews or shareholder letters as a means of capturing this data. Content analysis has been successfully used to identify managerial cognitions and is, in general seen as useful for identifying the perceptions and beliefs of managers (e.g. Abrahamson & Hambrick, 1997; D'Aveni & MacMillan, 1990; Levy, 2005; Short &

Palmer, 2003). Again, it will make sense to begin with the validated scales of achievement and using the concepts tested and gathered in those scales to develop word lists or other rubrics by which to analyze CEO communication with the outside community. Future focused communications may also be of interest, since a greater focus on the status quo in communications with the investor and stakeholder community may signal lower ambitions and aspirations, while a more dynamic and revolutionary future focus may convey a greater striving on the part of the top executive.

Finally, while the performance challenges measures seemed to provide some insight into the effects of demands, there may be ways of increasing that insight. The current measures focus on monitoring. While strong monitoring would tend to express high demands for a set level of performance and would encourage managers to achieve such levels of performance, this measure is missing operationalization of that actual level of performance demanded. It may be fruitful to include a measure of what level of performance owners are demanding. A modest increase year over year would certainly be less demanding than a large one. Perhaps inclusion of items such as earnings guidance releases from the firm or analyst reports on the firm's earnings may enrich this measure.

Outside of the methodological limitations that should be corrected moving forward, this construct may have a number of possible firm and individual outcomes that can be considered. Perhaps one of the more interesting is that of executive turnover, an increasing effect of the job becoming more difficult (Hsu, 2009; Kaplan & Minton, 2006). A highly demanding job can create emotional exhaustion and subsequent burnout (Demerouti et al., 2001). If an employee becomes burnt out, they begin

thinking more of leaving the organization (and ultimately doing so) (Drake & Yadama, 1996; Geurts et. al, 1998; Koeske & Koeske, 1993). It is expected that the same outcomes for burnout at lower levels of the organization would hold for the CEO. The costs of turnover (recruiting and screening, training and disruption to existing customer relationships) can be significant at any level (Cascio, 1991; Davis, Schoorman, Mayer & Tan, 2000). However, at the level of the top executive, in addition to these costs, there is also the disruption to strategy (Wiersema, 1992), a break in organizational momentum (Miller, 1993) and disruption of stakeholder relationships (Kenser & Sebora, 1994). The challenge with this work would be establishing when a CEO leaves his or her job due to burnout as opposed to being dismissed. Oftentimes CEOs will "resign" regardless of what the true dynamics may be and the actual reasons for dismissal are not fully disclosed (Denis & Denis, 1995; Fredrickson, Hambrick, & Baumrin, 1988; Shen & Cannella, 2002; Weisbach, 1988). This confound could be exacerbated in a situation of high job demands. Because mangers facing high demands may be facing increased pressure from owners for a given level of performance, failure to meet that level of performance may increase the likelihood of dismissal.

Implications for Managers

From a managerial standpoint, this may well provide evidence that suboptimal outcomes are a consequence of dealing with high demands. There is at least some support to suggest that when demands are high, top managers take information processing short-cuts that may or may not be appropriate given the business circumstances. There is also some evidence suggesting that dynamic strategies increase under heightened demands and that those dynamic strategies may negatively affect

overall performance. This supports years of previous research suggesting that there is too much information to be processed for a perfectly rational decision, and thus managers satisfice in their decisions (Cyert & March, 1963; March & Simon, 1958; Simon, 1947). William Ford Jr.'s solution may be the most appropriate: reducing the duties on any given individual. Within this study a majority of managers did not have a named COO or President (115) nor was there a separate chairperson (136). While the value of investing the responsibilities of the office of the president into three different individuals is up for debate (Finkelstein & D'Aveni, 1994; Hambrick & Cannella, 2004), it makes some intuitive sense that division of labor would reduce the overall demands on any one individual. Any reduction in demands on one individual would hopefully expand the lens of the overall office of the president and allow more optimal decisions to be made on the part of the CEO and his or her management team.

Conclusion

While this dissertation does not strongly support the argument that a CEO's job is too difficult leading to negative outcomes for strategic and financial performance outcomes, it is a first step in empirically studying this question. Methodological refinements may well provide a stronger story in favor of the theory. However, there is at least some indication that changes to strategic and performance outcomes can be caused by increased job demands.

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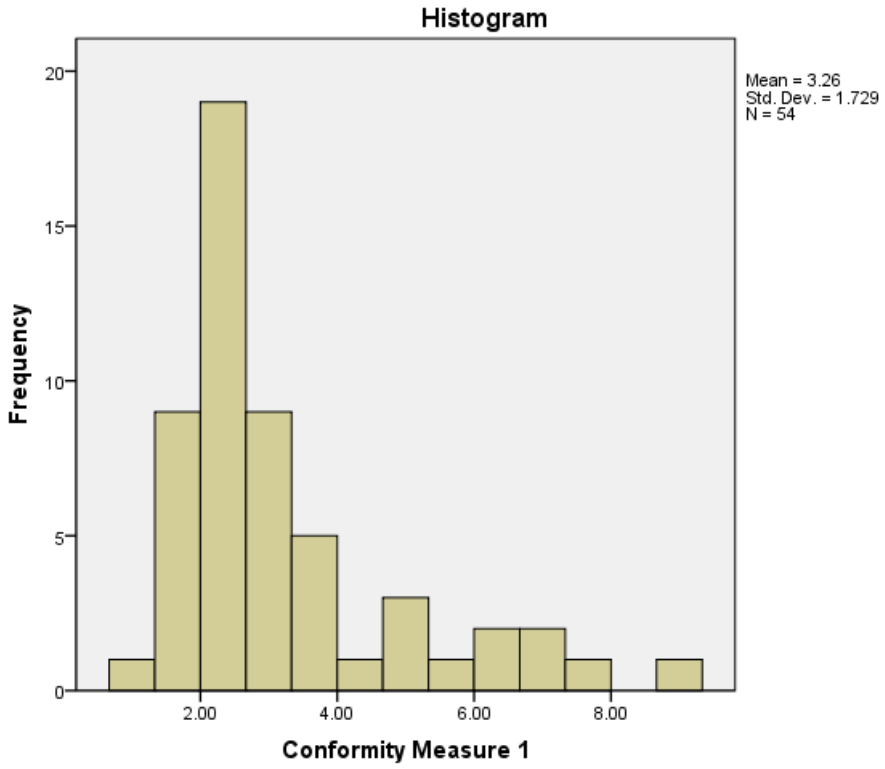
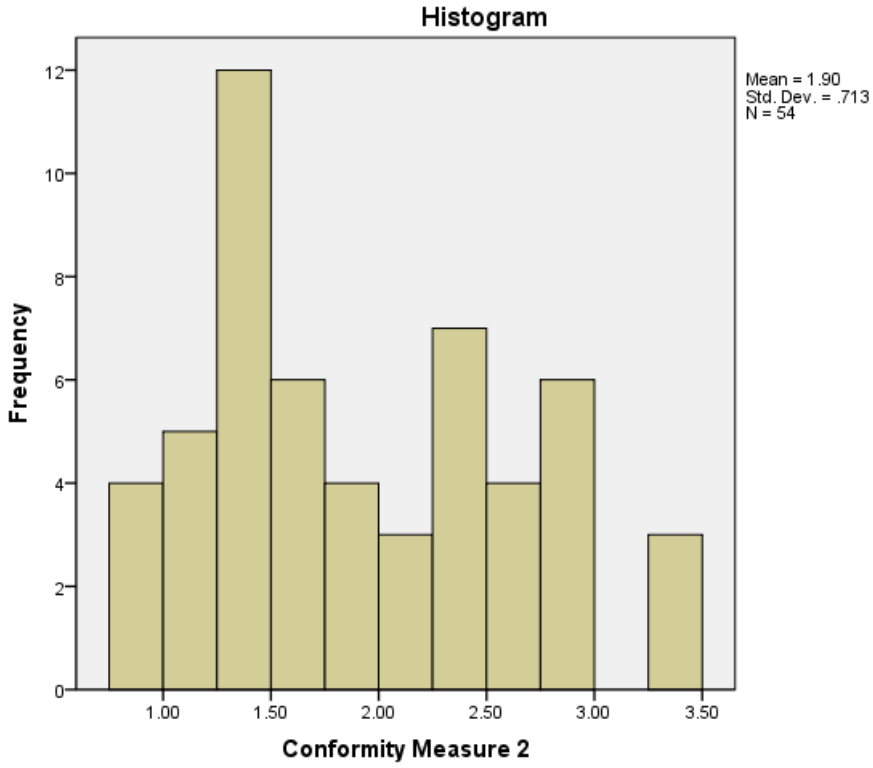
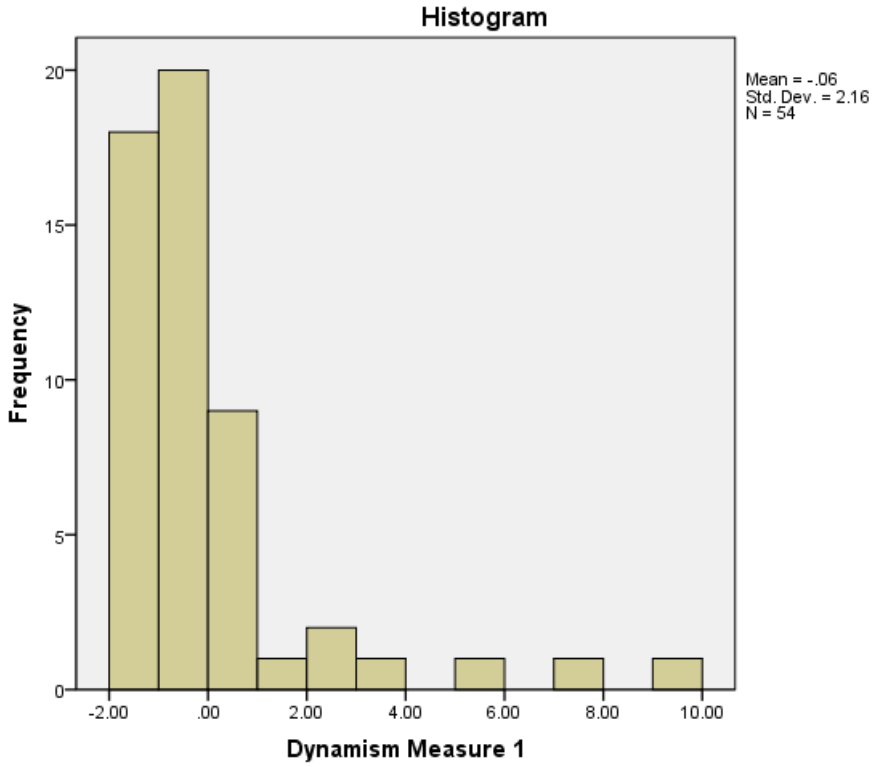
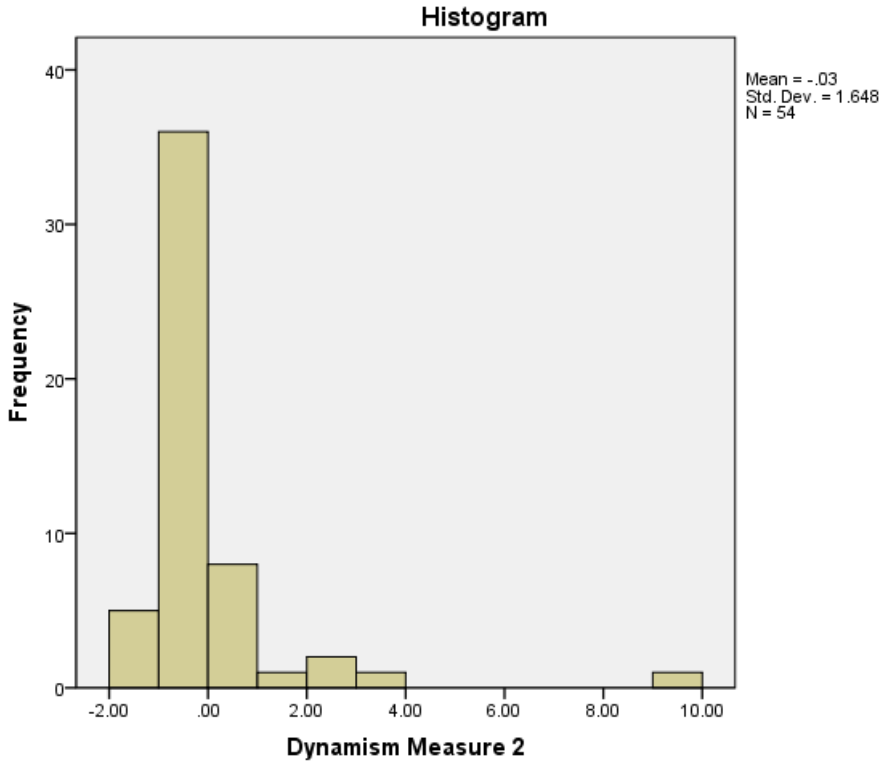
APPENDIX 1

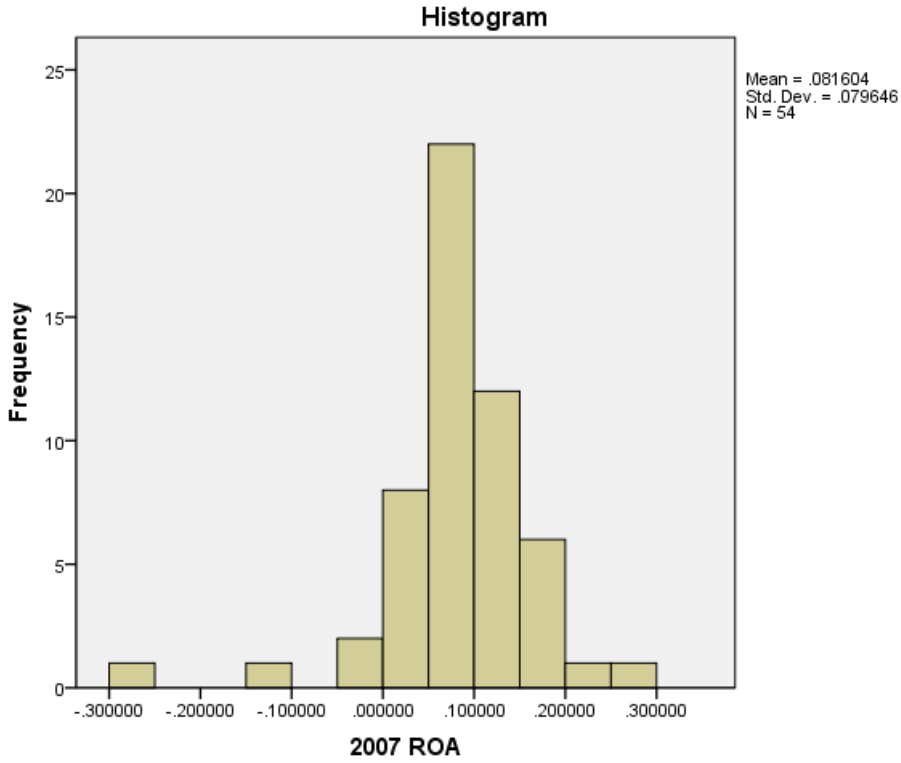
Histograms for Untransformed Variables

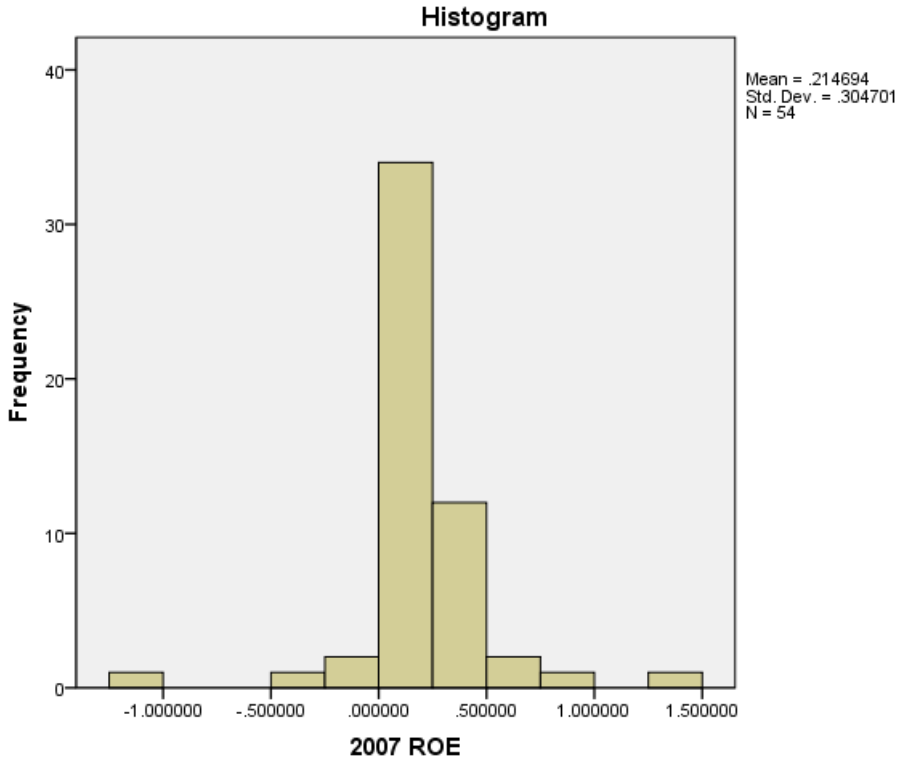


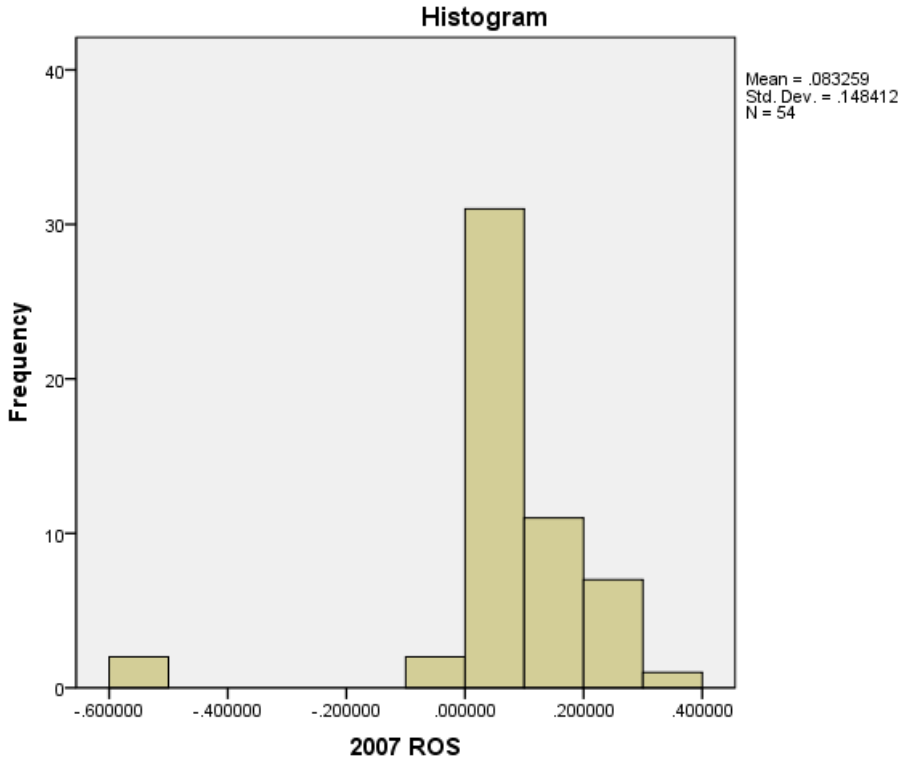

Histogram
Mean = 1.90
Std. Dev. = .713
N = 54
Frequency
0
2
4
6
8
10
12
1.00
1.50
2.00
2.50
3.00
3.50
Conformity Measure 2

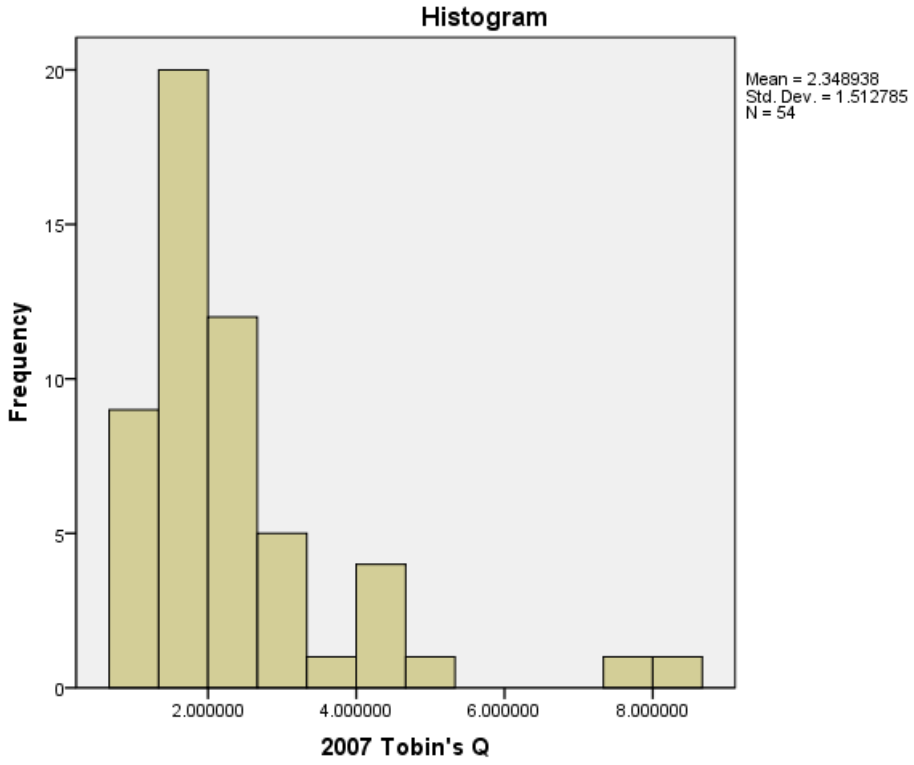

Histogram
Mean = -.06
Std. Dev. = 2.16
N = 54
Frequency
0
5
10
15
20
-2.00
.00
2.00
4.00
6.00
8.00
10.00
Dynamism Measure 1

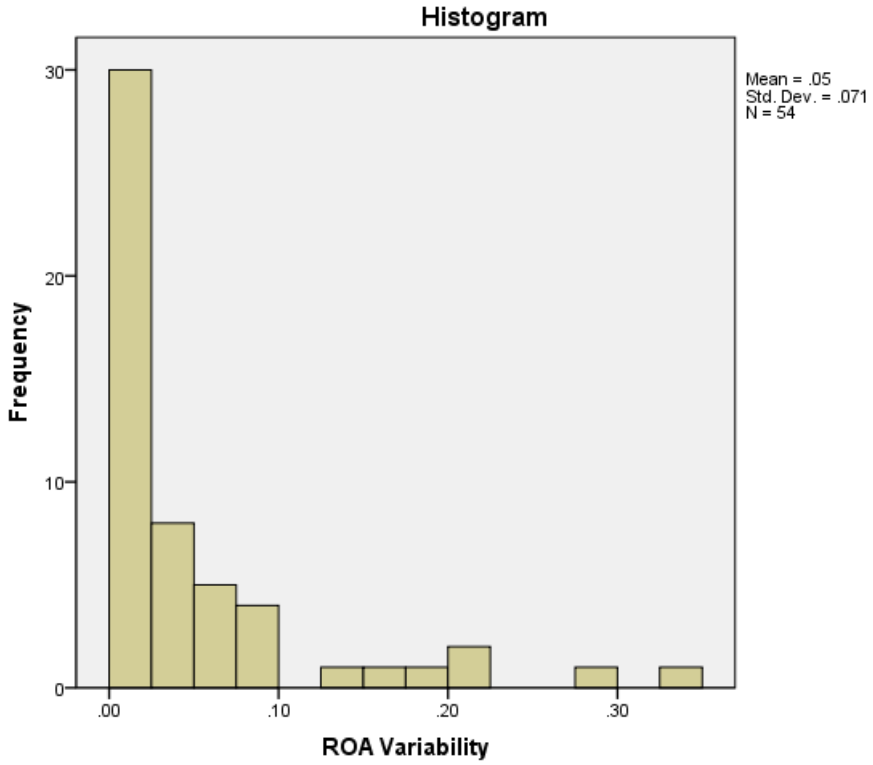

Histogram
Mean = -.03
Std. Dev. = 1.648
N = 54
Frequency
40
30
20
10
0
-2.00
.00
2.00
4.00
6.00
8.00
10.00
Dynamism Measure 2

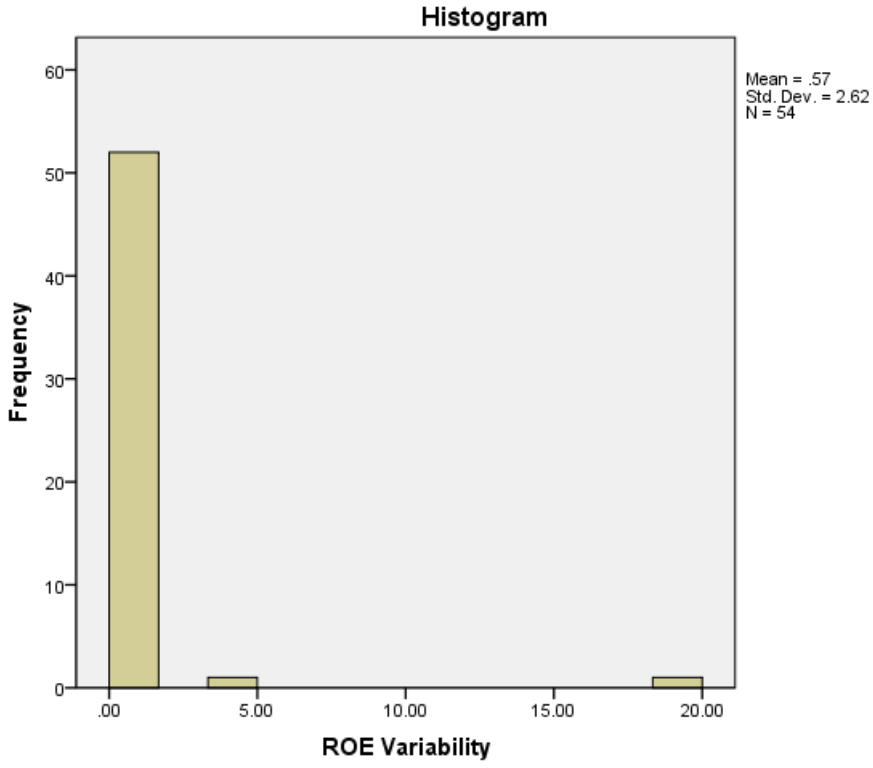

Histogram
Mean = .081604
Std. Dev. = .079646
N = 54
Frequency
25
20
15
10
5
0
-.300000
-.200000
-.100000
.000000
.100000
.200000
.300000
2007 ROA

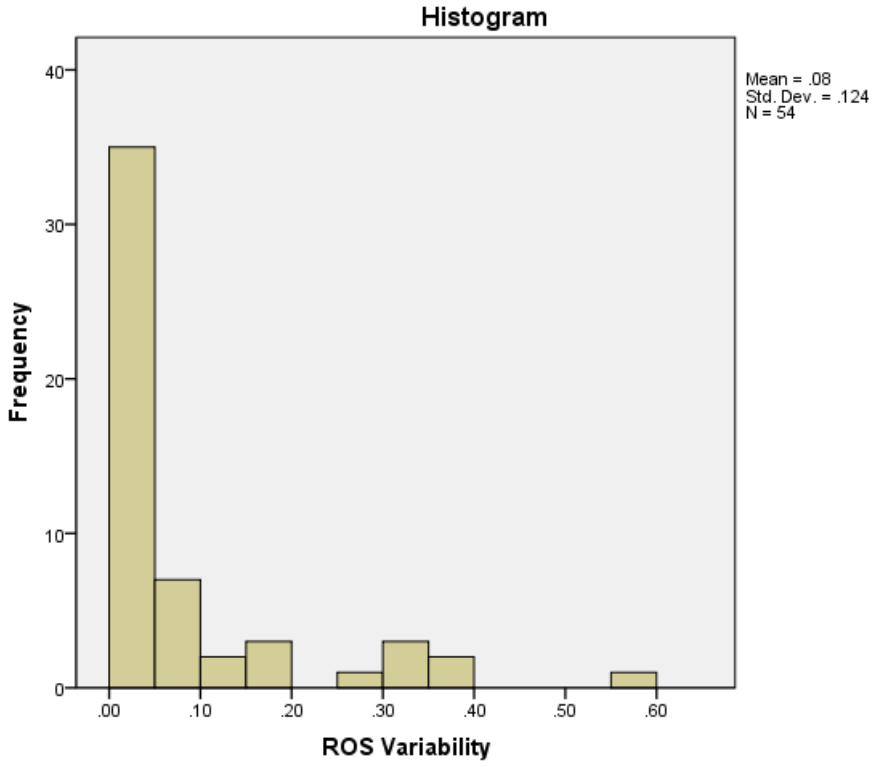

Histogram
Mean = .214694
Std. Dev. = .304701
N = 54
Frequency
40
30
20
10
0
-1.000000
-.500000
.000000
.500000
1.000000
1.500000
2007 ROE

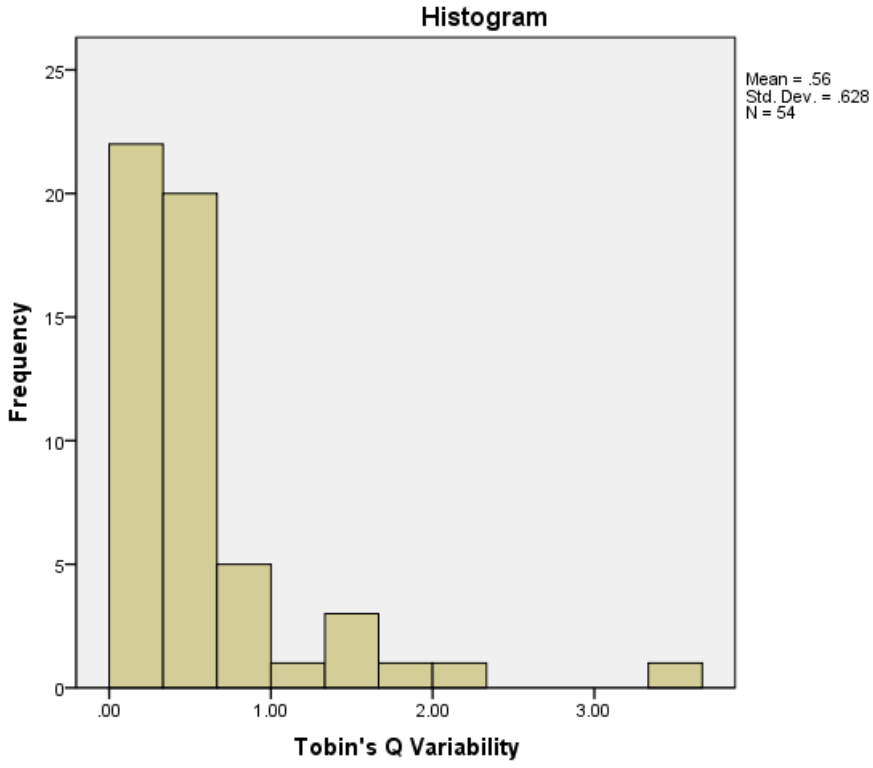

Histogram
Mean = .083259
Std. Dev. = .148412
N = 54
Frequency
40
30
20
10
0
-.600000
-.400000
-.200000
.000000
.200000
.400000
2007 ROS

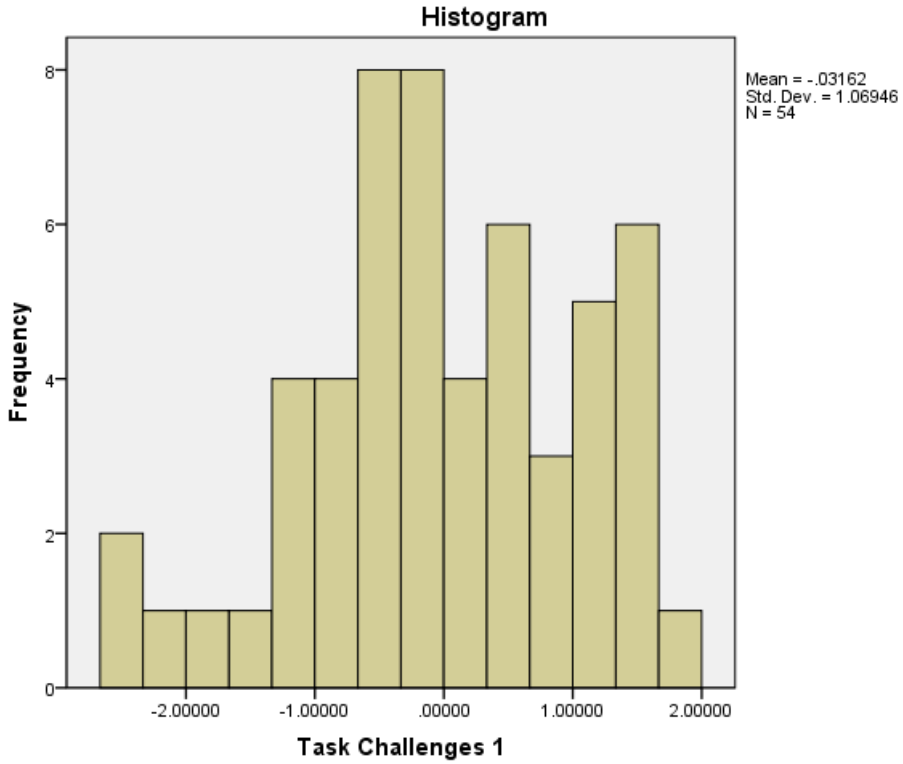

Histogram
Mean = 2.348938
Std. Dev. = 1.512785
N = 54
Frequency
20
15
10
5
0
2.000000
4.000000
6.000000
8.000000
2007 Tobin's Q

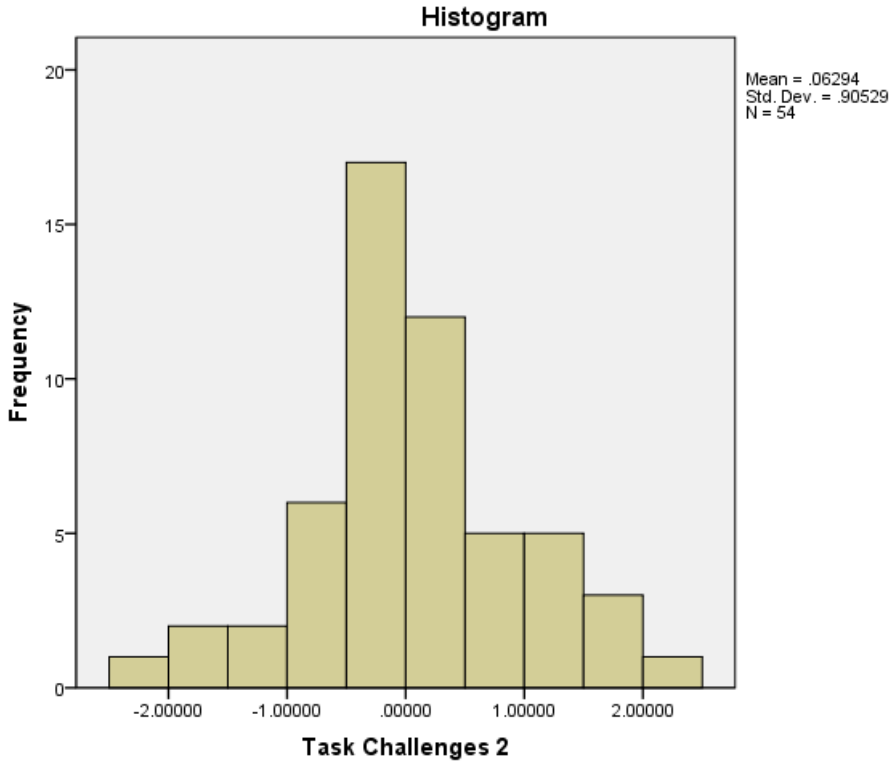

Histogram
Mean = .05
Std. Dev. = .071
N = 54
Frequency
30
20
10
0
.00
.10
.20
.30
ROA Variability

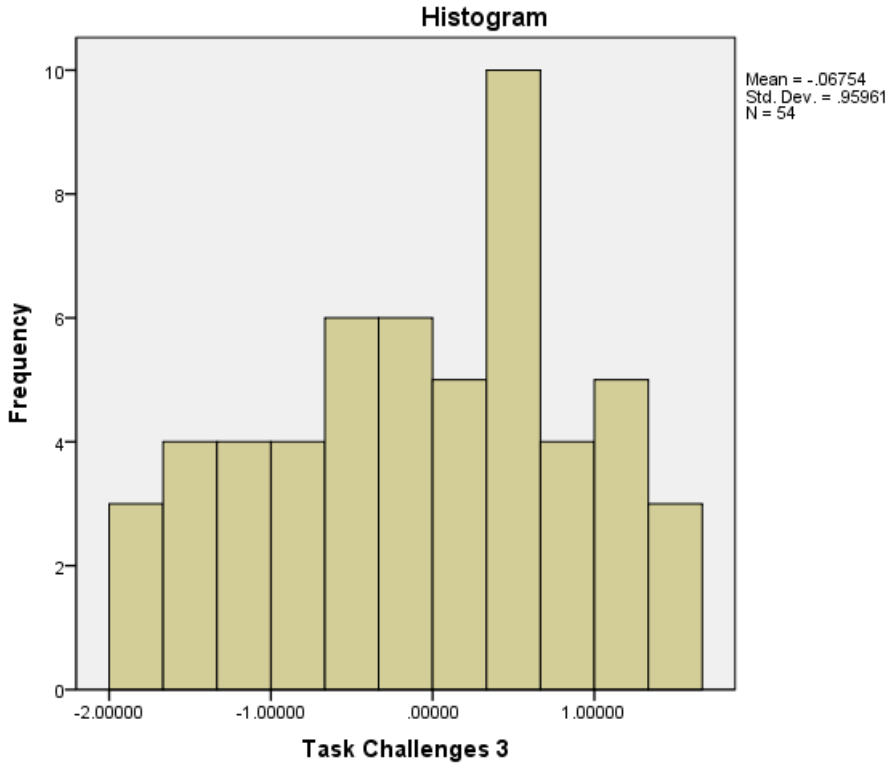

Histogram
Mean = .57
Std. Dev. = 2.62
N = 54
Frequency
ROE Variability
0
10
20
30
40
50
60
.00
5.00
10.00
15.00
20.00

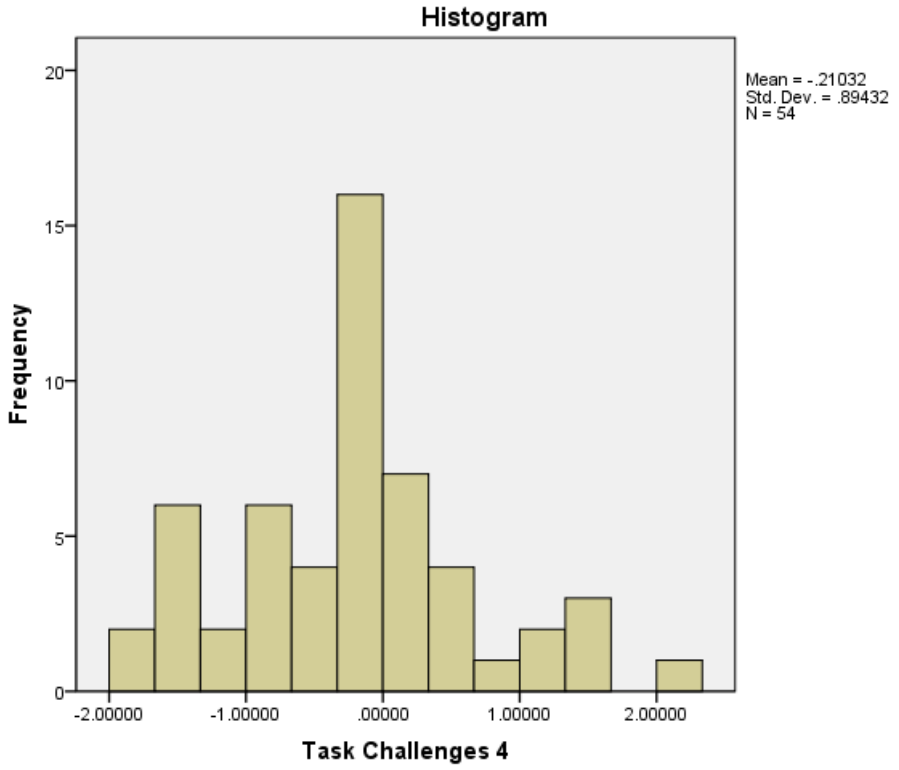

Histogram
Mean = .08
Std. Dev. = .124
N = 54
Frequency
ROS Variability
0
10
20
30
40
.00
.10
.20
.30
.40
.50
.60

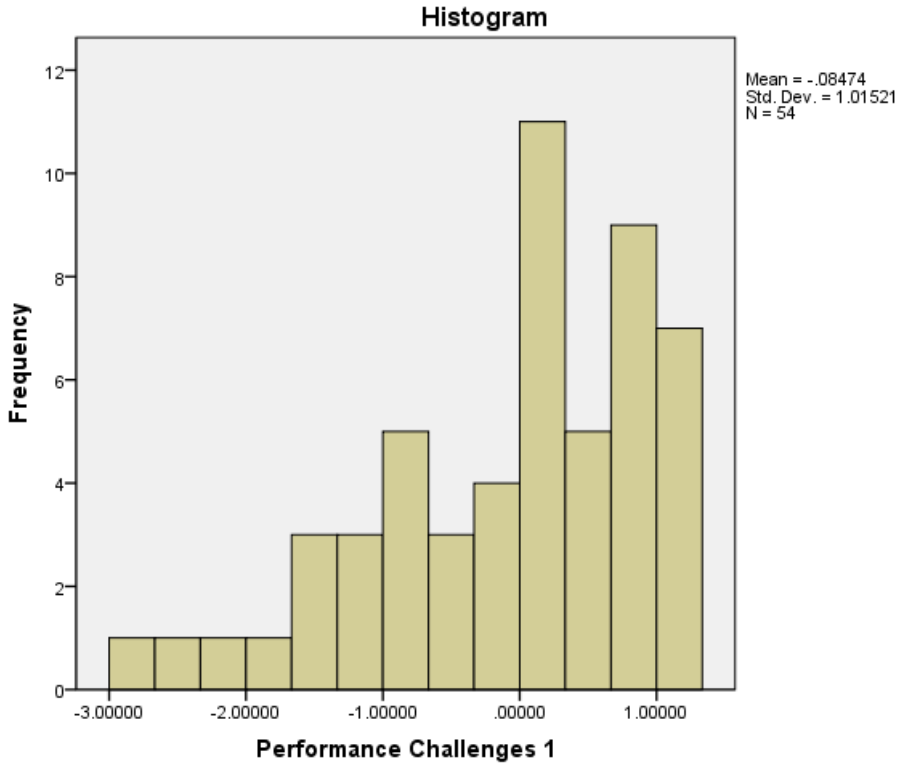

Histogram
Mean = .56
Std. Dev. = .628
N = 54
Frequency
25
20
15
10
5
0
.00
1.00
2.00
3.00
Tobin's Q Variability

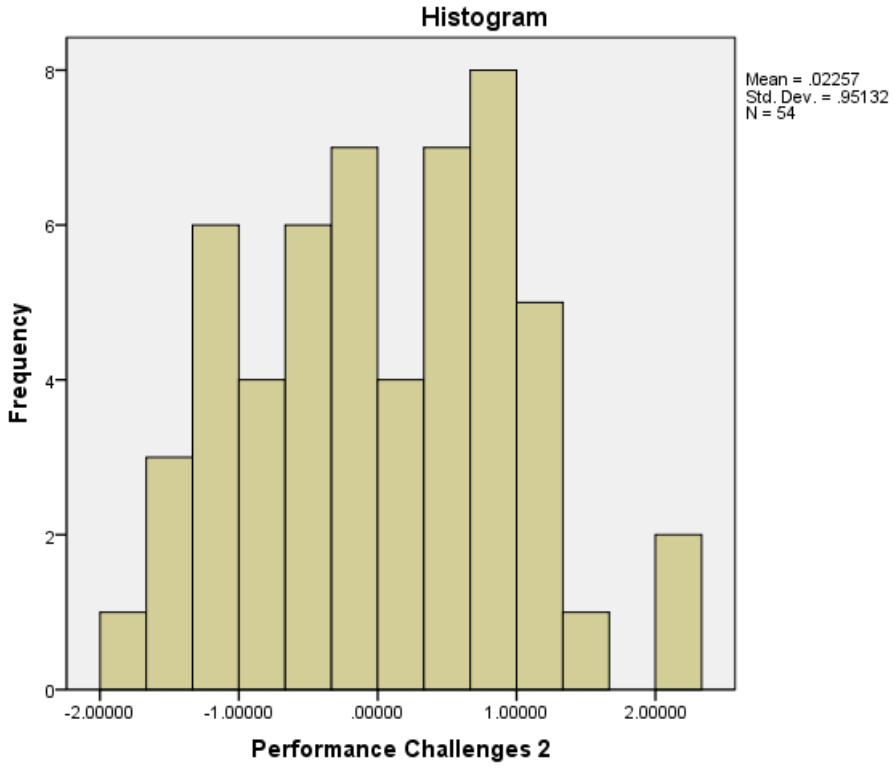

Histogram
Mean = -.03162
Std. Dev. = 1.06946
N = 54
Frequency
8
6
4
2
0
-2.00000
-1.00000
.00000
1.00000
2.00000
Task Challenges 1

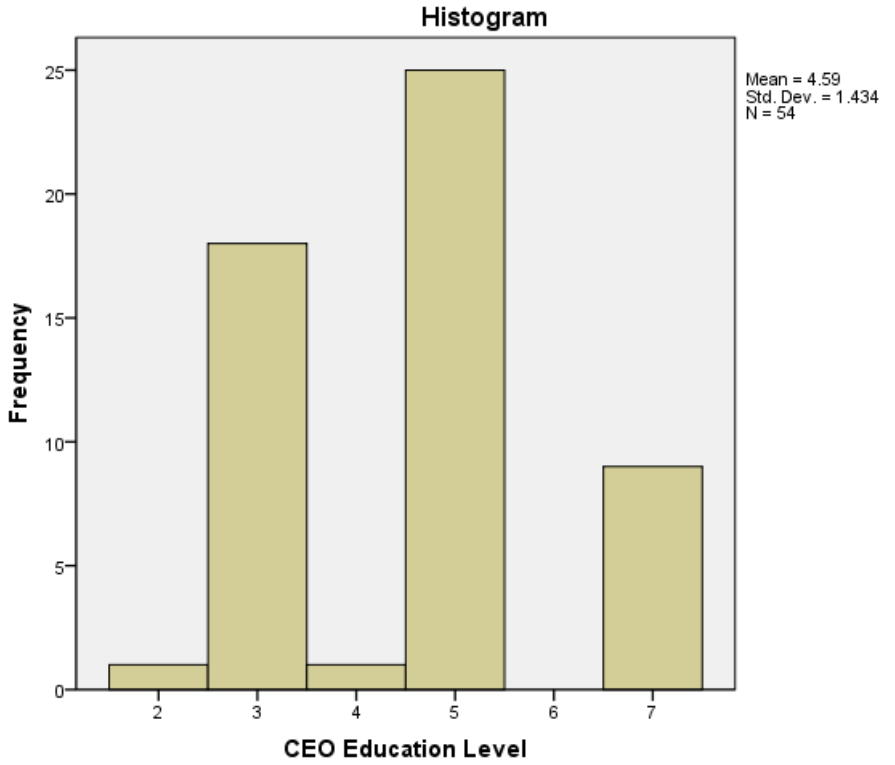

Histogram
Mean = .06294
Std. Dev. = .90529
N = 54
Frequency
Task Challenges 2
0
5
10
15
20
-2.00000
-1.00000
.00000
1.00000
2.00000

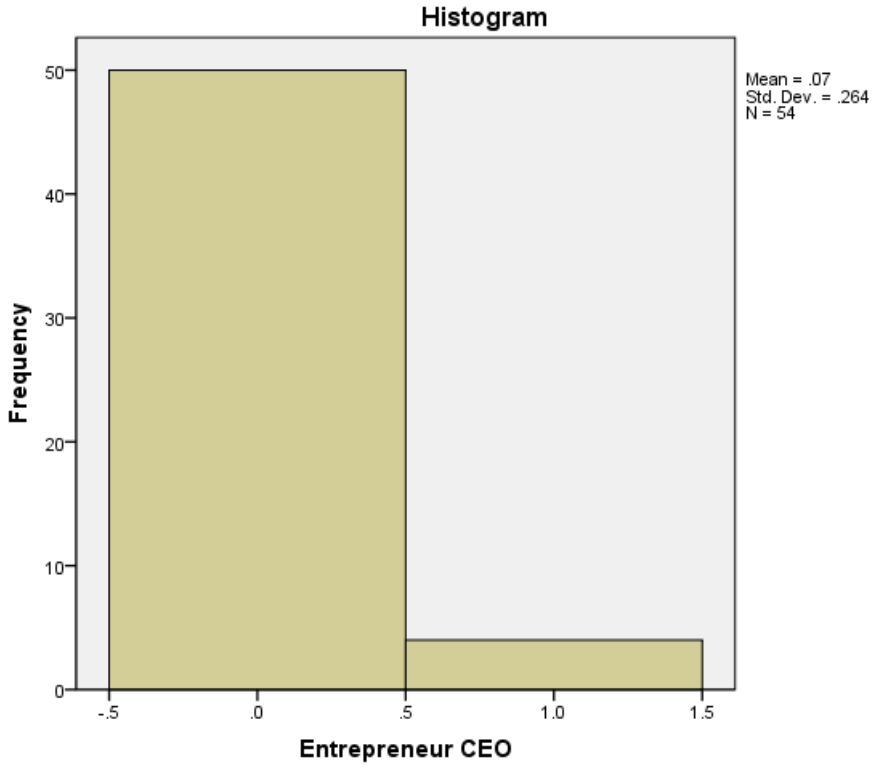

Histogram
Mean = -.06754
Std. Dev. = .95961
N = 54
Frequency
Task Challenges 3
0
2
4
6
8
10
-2.00000
-1.00000
.00000
1.00000

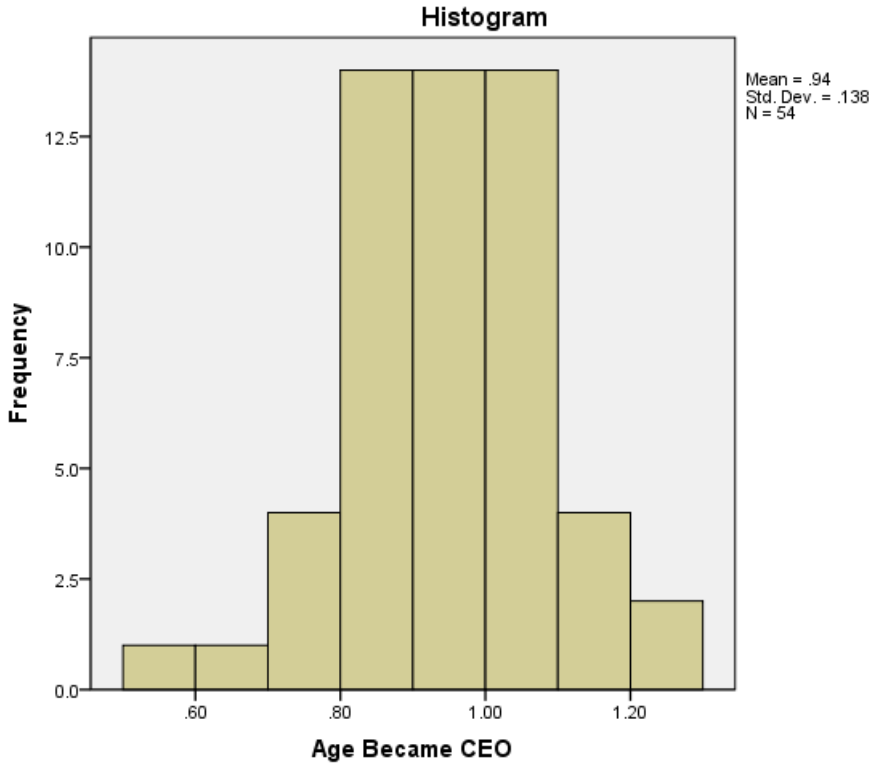

Histogram
Mean = -.21032
Std. Dev. = .89432
N = 54
Frequency
20
15
10
5
0
-2.00000
-1.00000
.00000
1.00000
2.00000
Task Challenges 4

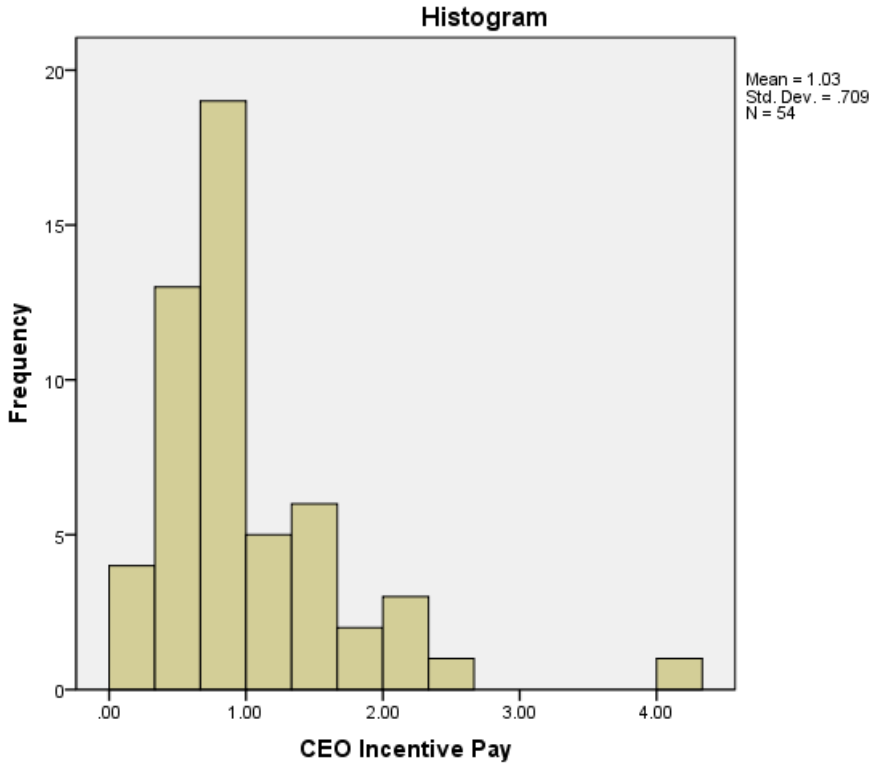

Histogram
Mean = -.08474
Std. Dev. = 1.01521
N = 54
Frequency
12
10
8
6
4
2
0
-3.00000
-2.00000
-1.00000
.00000
1.00000
Performance Challenges 1

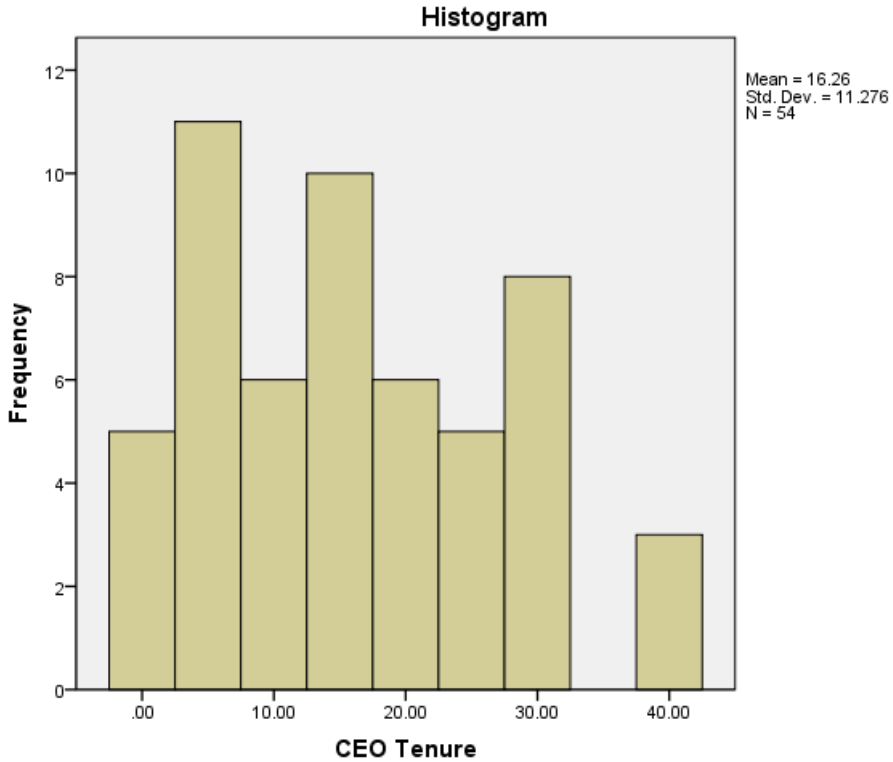

Histogram
Mean = .02257
Std. Dev. = .95132
N = 54
Frequency
0
2
4
6
8
-2.00000
-1.00000
.00000
1.00000
2.00000
Performance Challenges 2

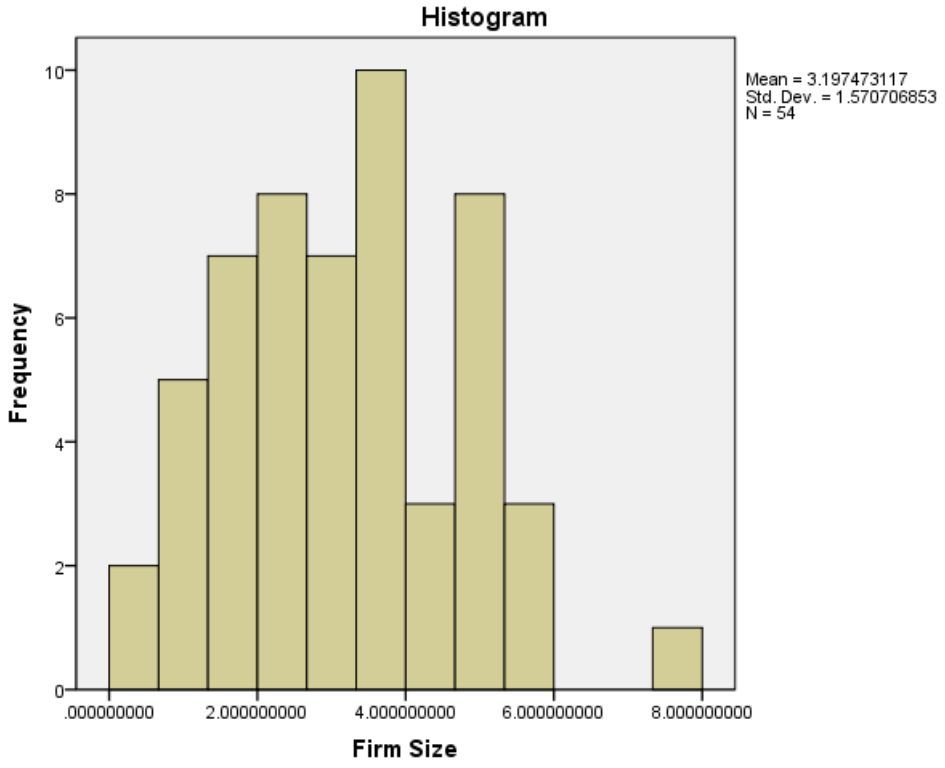

Histogram
Mean = 4.59
Std. Dev. = 1.434
N = 54
Frequency
0
5
10
15
20
25
2
3
4
5
6
7
CEO Education Level

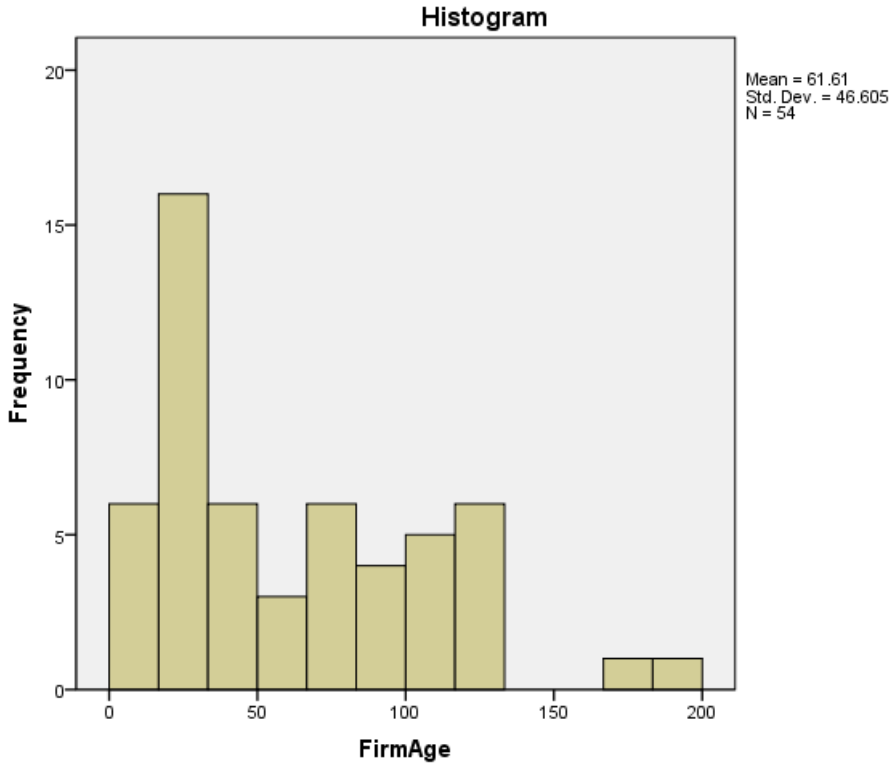

Histogram
Mean = .07
Std. Dev. = .264
N = 54
Frequency
50
40
30
20
10
0
-.5
.0
.5
1.0
1.5
Entrepreneur CEO

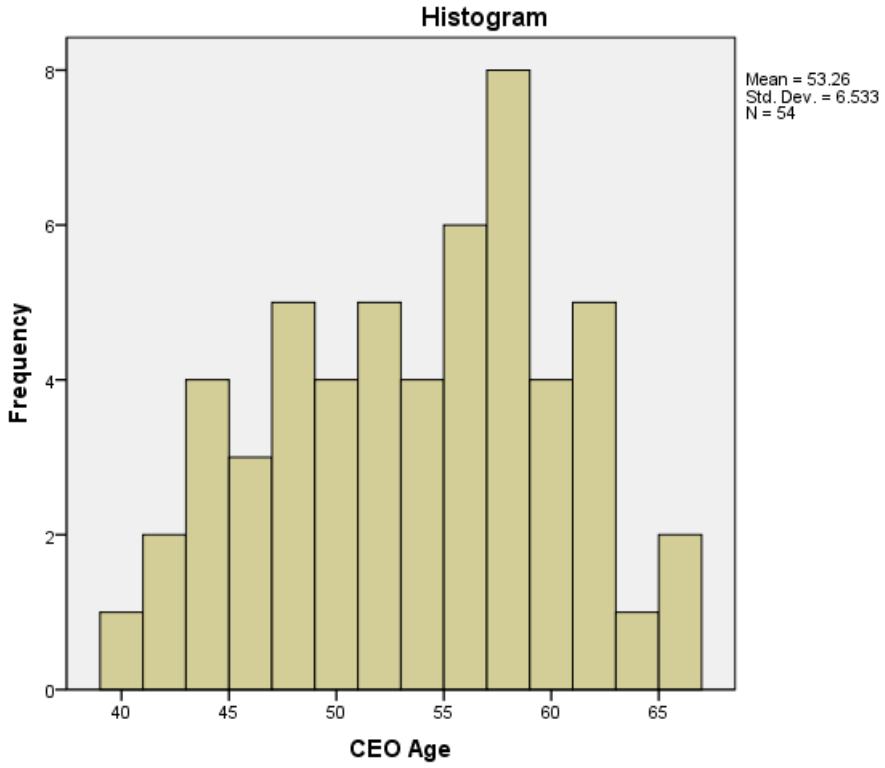

Histogram
Mean = .94
Std. Dev. = .138
N = 54
Frequency
12.5
10.0
7.5
5.0
2.5
0.0
.60
.80
1.00
1.20
Age Became CEO


Histogram
Mean = 1.03
Std. Dev. = .709
N = 54
Frequency
CEO Incentive Pay
0
5
10
15
20
.00
1.00
2.00
3.00
4.00


Histogram
Mean = 16.26
Std. Dev. = 11.276
N = 54
Frequency
CEO Tenure
0
2
4
6
8
10
12
.00
10.00
20.00
30.00
40.00

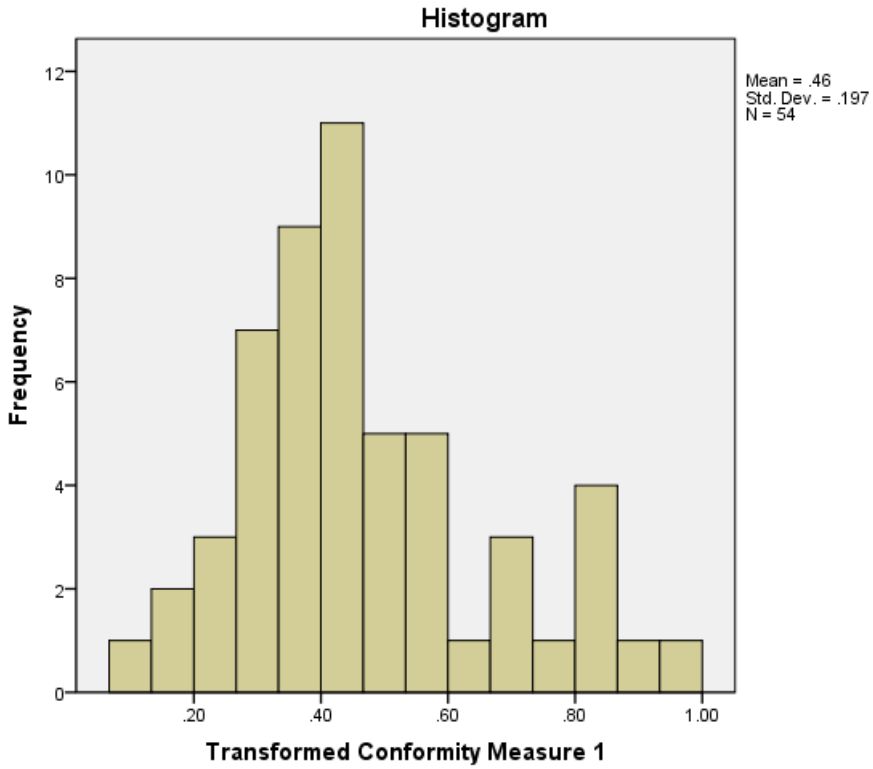

Histogram
Mean = 3.197473117
Std. Dev. = 1.570706853
N = 54
Frequency
Firm Size
.000000000
2.000000000
4.000000000
6.000000000
8.000000000
0
2
4
6
8
10

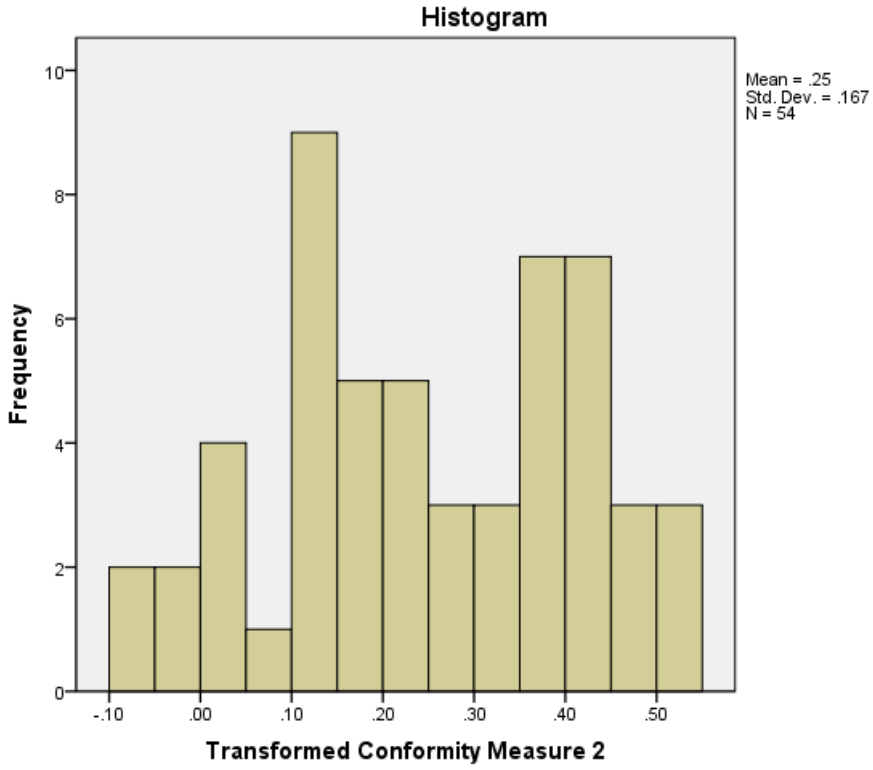

Histogram
Mean = 61.61
Std. Dev. = 46.605
N = 54
Frequency
FirmAge
0
50
100
150
200
0
5
10
15
20

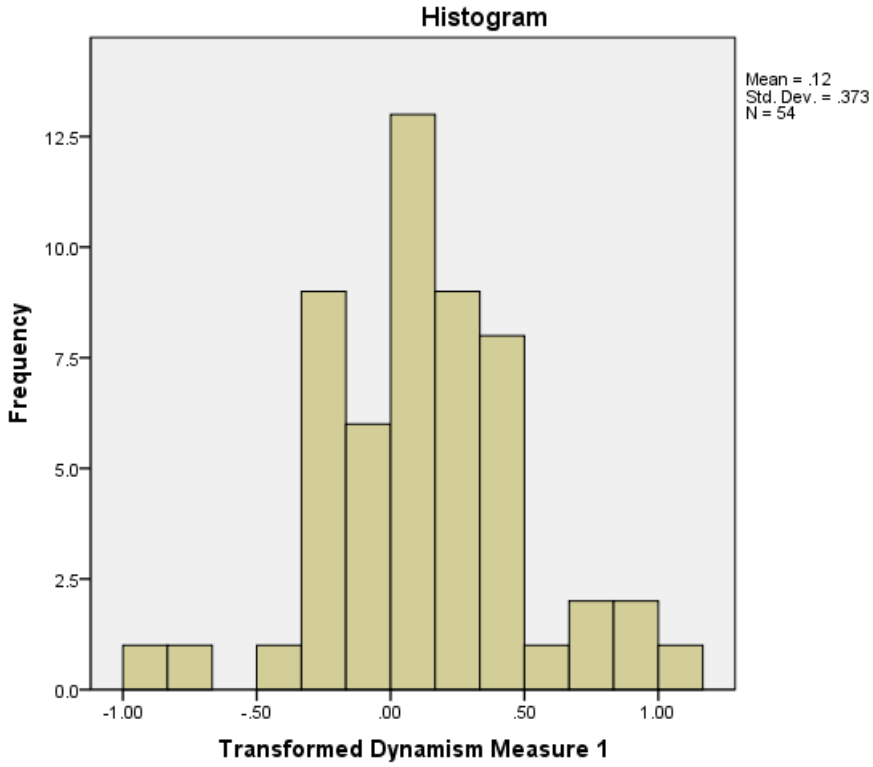

Histogram
Mean = 53.26
Std. Dev. = 6.533
N = 54
Frequency
0
2
4
6
8
40
45
50
55
60
65
CEO Age

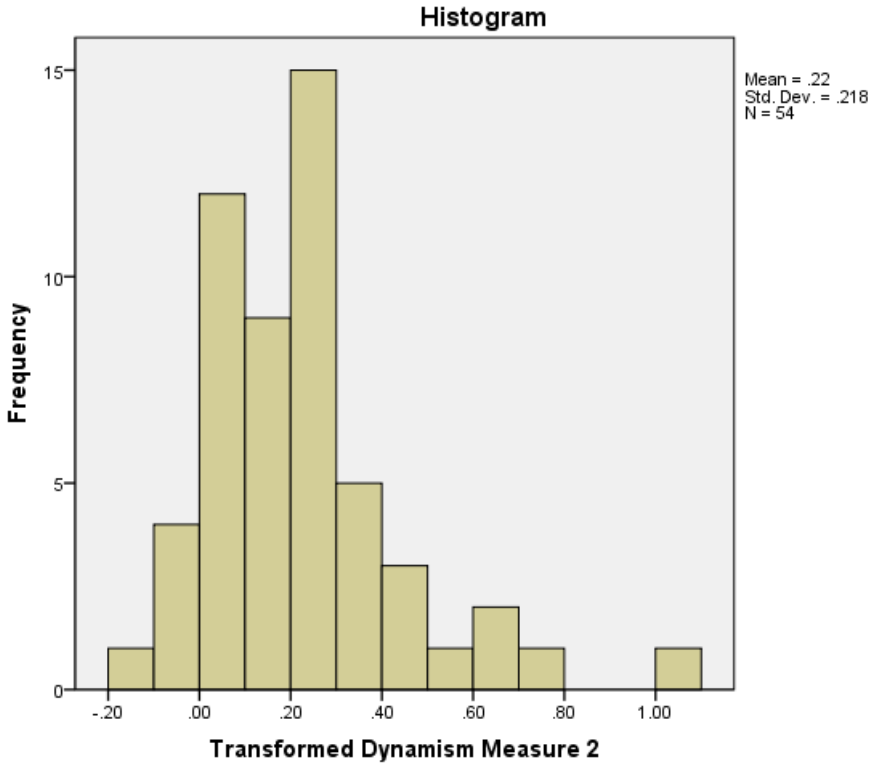
APPENDIX 2

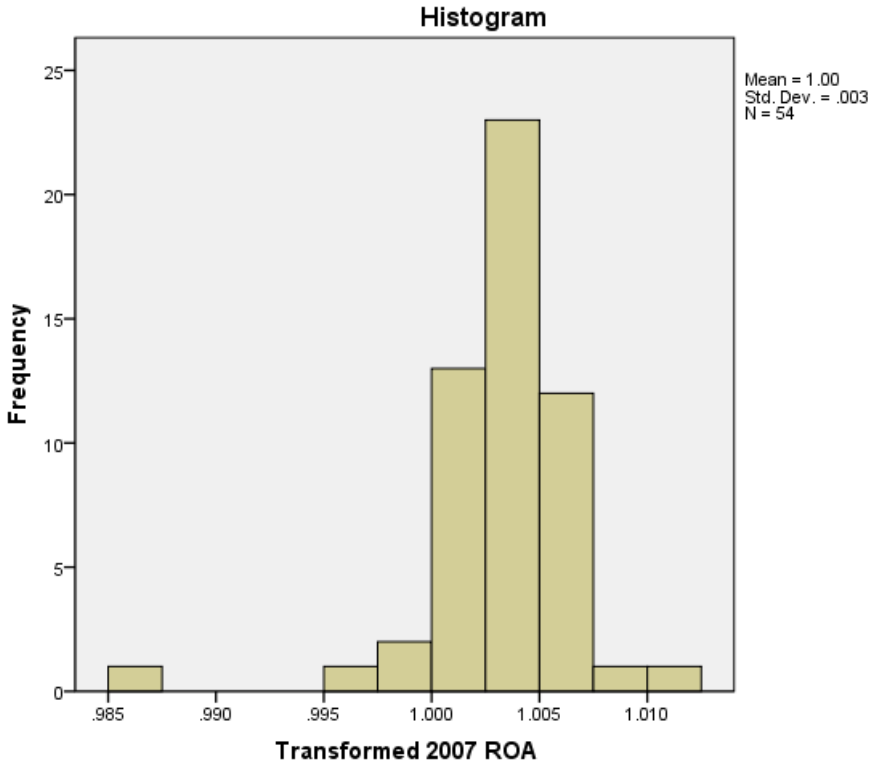
Histograms for Transformed Variables

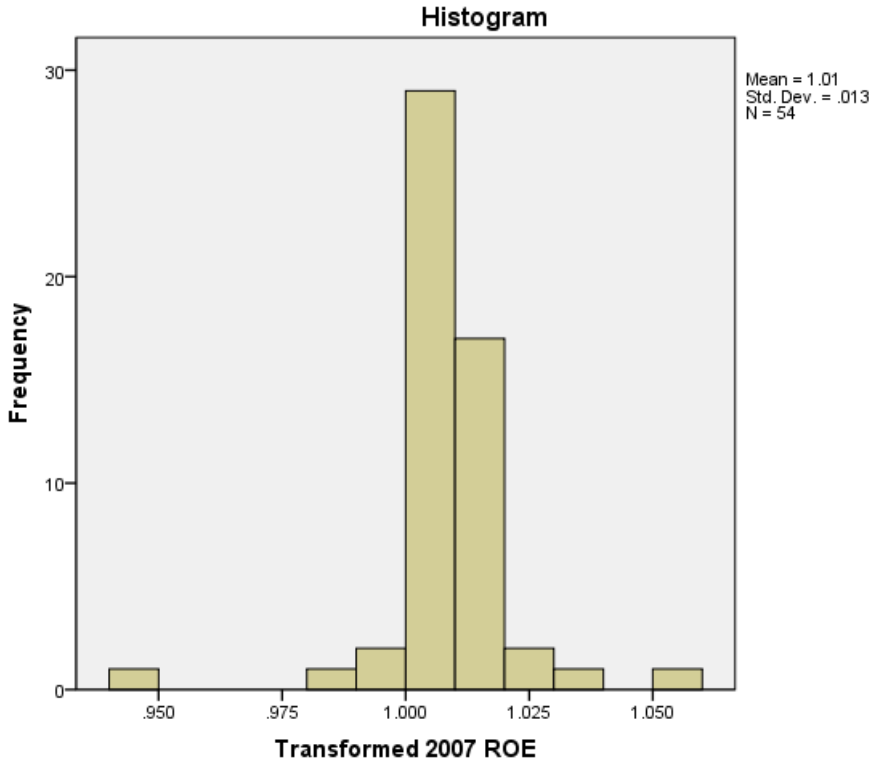


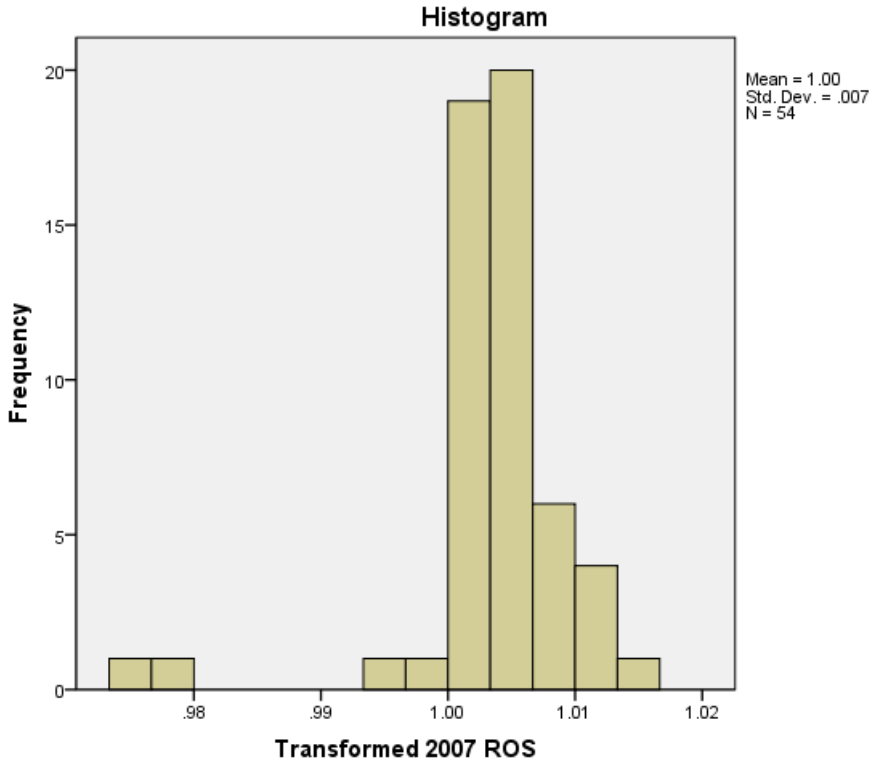

Histogram
Mean = .25
Std. Dev. = .167
N = 54
Frequency
Transformed Conformity Measure 2

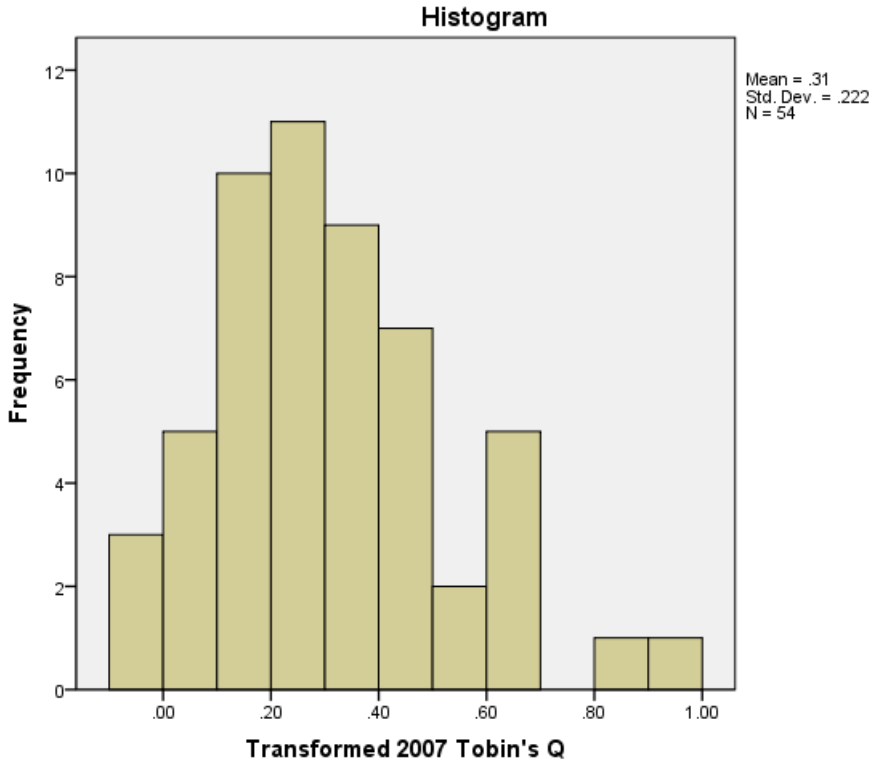

Histogram
Mean = .12
Std. Dev. = .373
N = 54
Frequency
Transformed Dynamism Measure 1

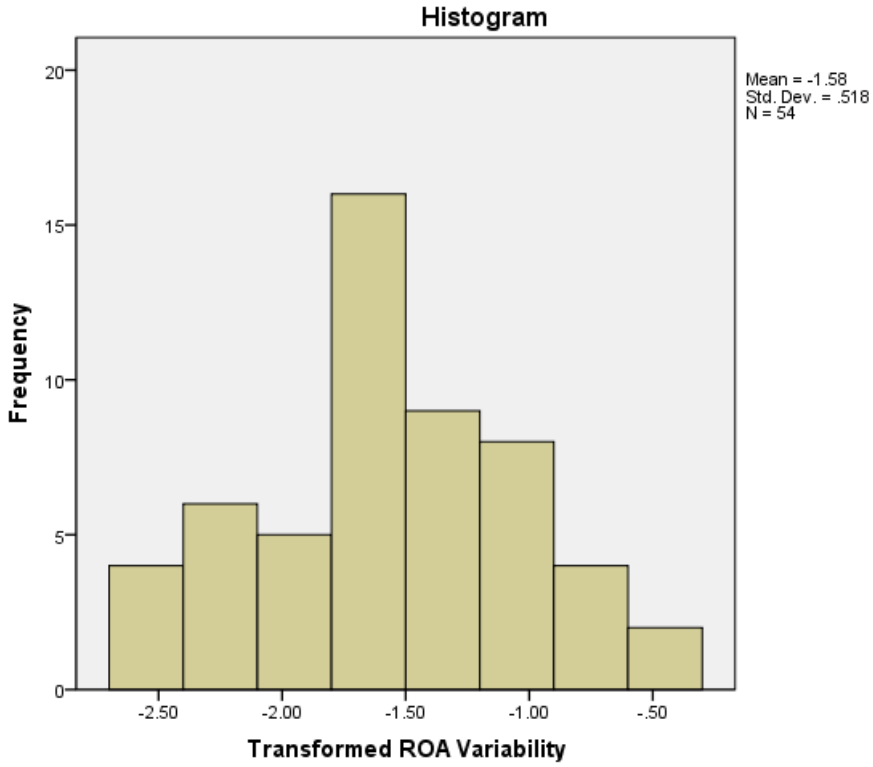

Histogram
Mean = .22
Std. Dev. = .218
N = 54
Frequency
15
10
5
0
-.20
.00
.20
.40
.60
.80
1.00
Transformed Dynamism Measure 2

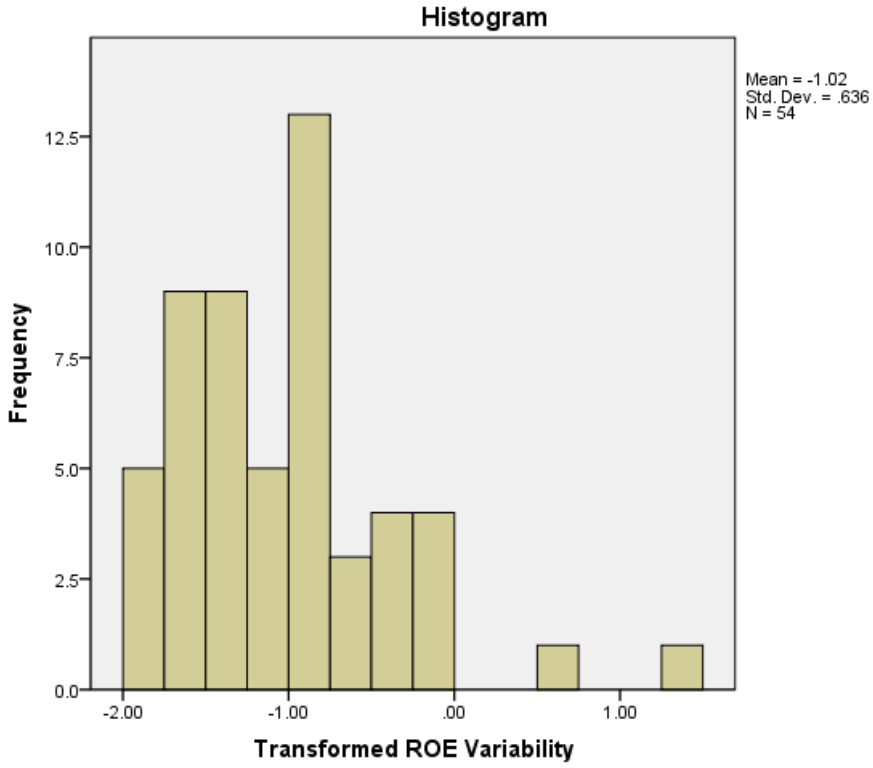

Histogram
Mean = 1.00
Std. Dev. = .003
N = 54
Frequency
25
20
15
10
5
0
.985
.990
.995
1.000
1.005
1.010
Transformed 2007 ROA

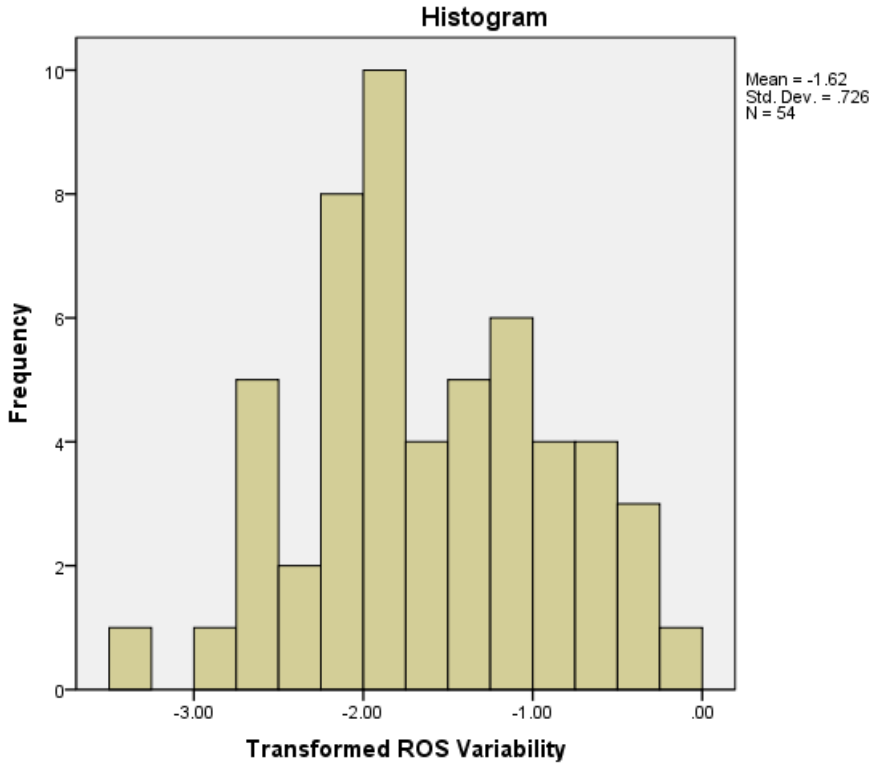

Histogram
Mean = 1.01
Std. Dev. = .013
N = 54
Frequency
30
20
10
0
.950
.975
1.000
1.025
1.050
Transformed 2007 ROE

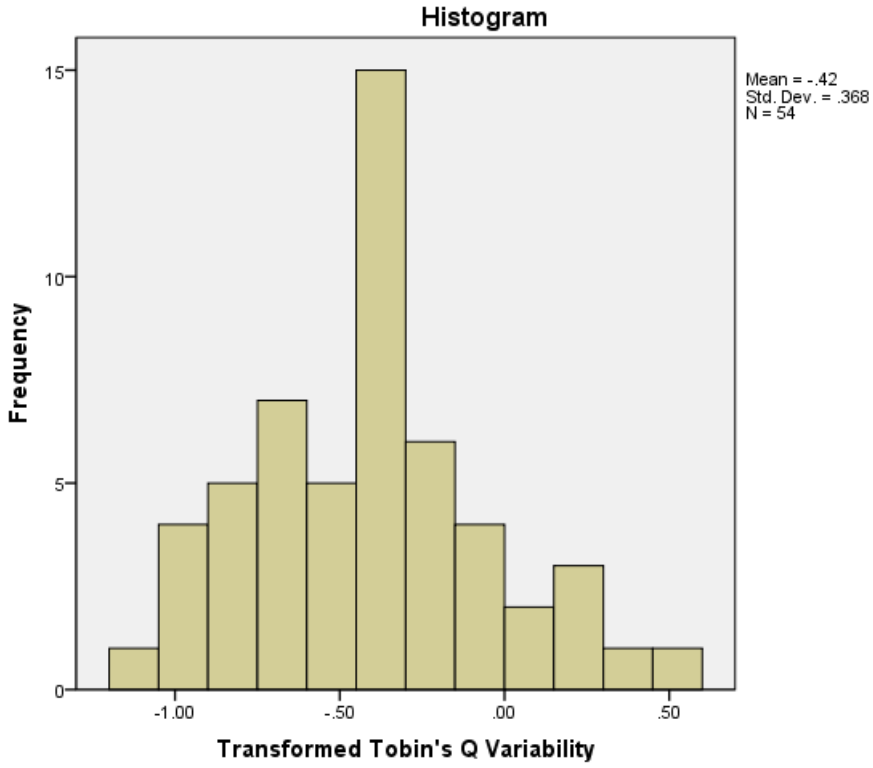

Histogram
Mean = 1.00
Std. Dev. = .007
N = 54
Frequency
20
15
10
5
0
.98
.99
1.00
1.01
1.02
Transformed 2007 ROS

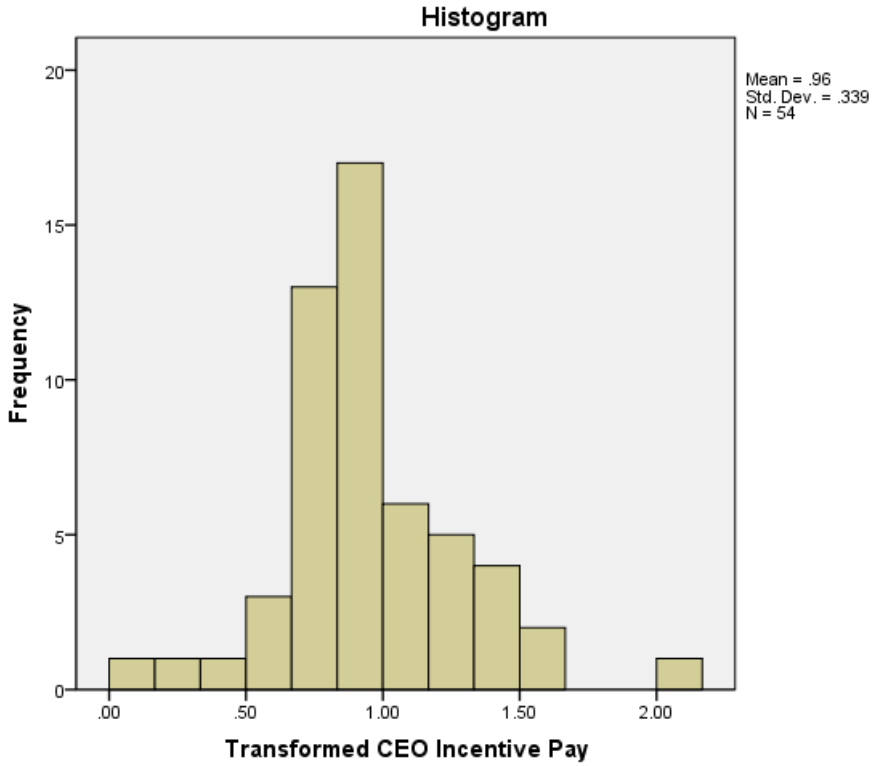

Histogram
Mean = .31
Std. Dev. = .222
N = 54
Frequency
0
2
4
6
8
10
12
.00
.20
.40
.60
.80
1.00
Transformed 2007 Tobin's Q

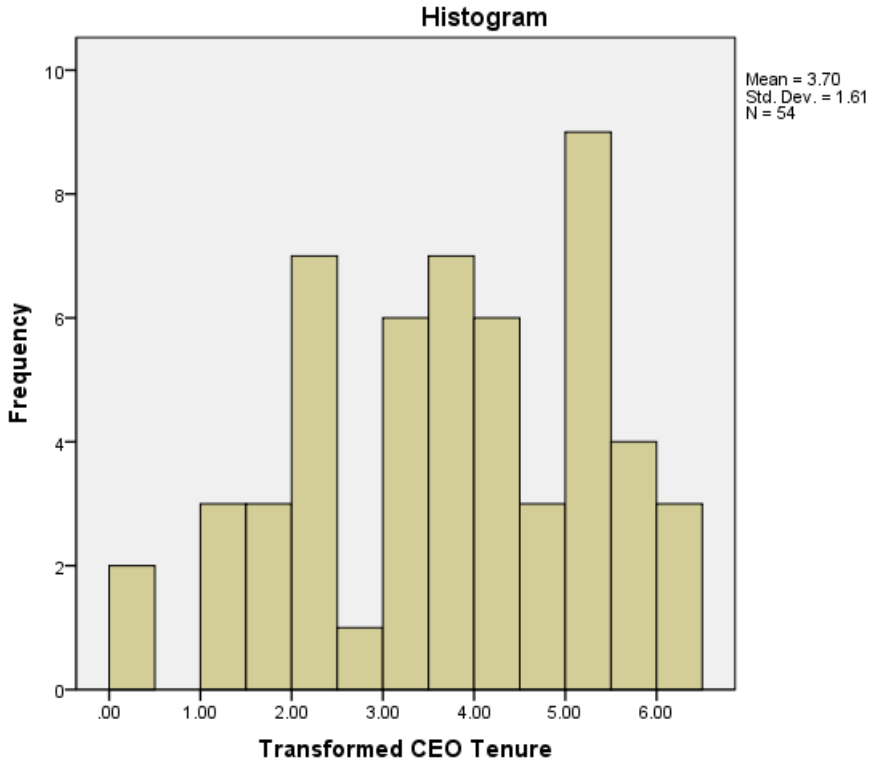

Histogram
Mean = -1.58
Std. Dev. = .518
N = 54
Frequency
0
5
10
15
20
-2.50
-2.00
-1.50
-1.00
-.50
Transformed ROA Variability

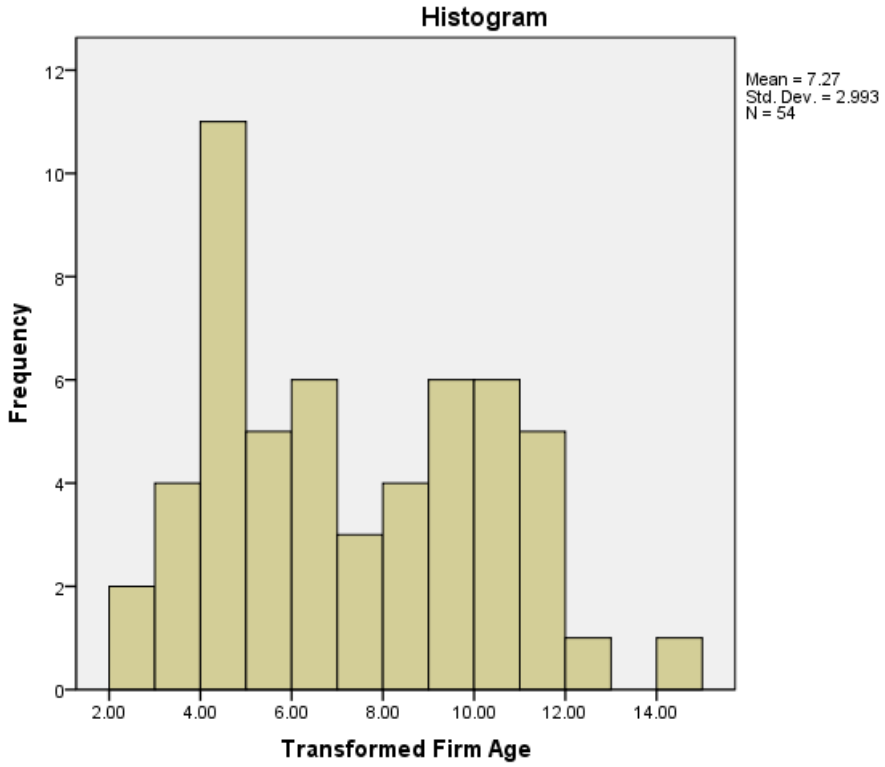

Histogram
Mean = -1.02
Std. Dev. = .636
N = 54
Frequency
12.5
10.0
7.5
5.0
2.5
0.0
-2.00
-1.00
.00
1.00
Transformed ROE Variability


Histogram
Mean = -1.62
Std. Dev. = .726
N = 54
Frequency
10
8
6
4
2
0
-3.00
-2.00
-1.00
.00
Transformed ROS Variability


Histogram
Mean = -.42
Std. Dev. = .368
N = 54
Frequency
15
10
5
0
-1.00
-.50
.00
.50
Transformed Tobin's Q Variability


Histogram
Mean = .96
Std. Dev. = .339
N = 54
Frequency
20
15
10
5
0
.00
.50
1.00
1.50
2.00
Transformed CEO Incentive Pay


Histogram
Mean = 3.70
Std. Dev. = 1.61
N = 54
Frequency
0
2
4
6
8
10
.00
1.00
2.00
3.00
4.00
5.00
6.00
Transformed CEO Tenure


Histogram
Mean = 7.27
Std. Dev. = 2.993
N = 54
Frequency
0
2
4
6
8
10
12
2.00
4.00
6.00
8.00
10.00
12.00
14.00
Transformed Firm Age