

And The Winner Is! Corporate Life Cycle Stage as an Antecedent to CEO Selection Characteristics

Brian Martinson*

Tarleton State University, Texas, USA

This study investigates the relationship between corporate life cycle stage as a measure of the key strategic decisions facing a newly hired CEO, and the selected CEO's demographic and biographic characteristics. Using corporate financial data from the COMPUSTAT database to measure corporate life cycle stage, and CEO profiles published in Forbes list of top paid CEOs, we tested our hypotheses regarding the relationship between corporate life cycle stage and newly hired CEOs' age, experience, and education. As predicted, we found a significant, negative relationship between newly hired CEOs' level of education and corporations in the mature life cycle stage. Surprisingly, and contrary to our prediction, we also found a significant, negative relationship between newly hired CEOs' level of education and corporations in the growth life cycle stage. Furthermore, growth stage firms selected CEOs with lower levels of education than mature stage firms. In the analysis, the life cycle stage variable explains approximately 11% of the variance in the education level of selected CEOs. The results suggest that corporate life cycle stage and its associated strategic challenges can be used to predict CEO education characteristics across single and multi-business corporations of varying sizes across industries. These new findings should encourage CEOs, investment analysts, corporate directors, and research scholars to fully consider the relationship between CEO education characteristics and the life cycle stage of a firm facing a CEO succession event.

Keywords: CEO characteristics, succession planning, human capital, upper echelons theory

Introduction

Academic researchers have been keenly interested in the individuals that occupy that top management position in an organization, the Chief Executive Officer (CEO). They are interested in understanding why CEOs leave the top position in an organization. They want to know what characteristics newly hired CEO's have in common, and what influences how and why new CEOs are selected. As far back as the 1960s, scholars have been trying to understand the relationship between firms, CEO succession events, the selection of a particular type of candidate to lead a particular type of business organization, and the influences both the external and internal environment have on the succession process and outcome (Giambatista, Rowe, & Riaz, 2005). When Hambrick and Mason (1984) introduced upper echelons theory and proposed that managerial background characteristics - especially observable characteristics such as age, organizational tenure, education, functional background, socioeconomic roots and financial position - could partially serve as predictors

of organizational outcomes; it further inspired scholars to pursue the stream of research focusing on CEO succession.

This paper will present a review of CEO succession literature focusing on firm level antecedents and selected CEO characteristics. We will add to the stream of research by introducing a new construct for CEO succession research: corporate life cycle stage. We propose that by studying corporate life cycle stage as the primary antecedent variable, it is possible to measure firms comprised of multiple businesses across various industries along a critical dimension that would suggest the nature of the strategic choices a new CEO would face. Corporate life cycle stage is reflective of the changing sales growth, capital expenditures, and strategic focus of the corporate (Anthony & Ramesh, 1992). Whereas, other studies have considered antecedents such as financial performance and R&D intensity (Datta & Guthrie, 1994), or industry structure including product differentiation, growth rate and capital intensity (Datta & Rajagopalan, 1998); these studies were only able to measure a unitary dimension of performance or expenditure; or only focused on the dominant industry from the portfolio of businesses a corporation held. As will be

*Email: martinson@tarleton.edu

discussed later in the paper, the life cycle stage antecedent captures the combination of corporate performance indicators and strategic investments across all of a corporation's businesses as reflected in their financial reports.

The benefit of my proposed approach is that it uses a composite set of financial indicators to assign firms to categorical groups defined by an expected set of strategic priorities that most firms in a particular life cycle stage would presumably address. The stages represent corporate-level conditions at the time the CEO selection decision is made. As guided by upper echelons theory, the conditions indicated by a firm's life cycle stage suggests a set of strategic priorities a firm was facing at the time of the succession event. We will also suggest an education measure as a proxy for CEO cognitive frames that builds upon existing education proxy theories to enrich the construct by providing an educational institution quality measurement component (Hambrick, 2007; Hitt, Biermant, Shimizu, & Kochhar, 2001). By utilizing research on the relationship between the education construct, firm specific experience, age, and the predicted behaviors and decisions a board of directors would anticipate being made by a CEO possessing a specific set of characteristics, it is hypothesized that a board of directors would select a CEO possessing the characteristics that most closely match the anticipated strategic decision-making requirements given the firm's particular life cycle stage. We will suggest operationalizations of the response and predictor variables, present a methodology for gathering and analyzing the data to be used in testing the relationships among the variables, and end by discussing potential limitations and future research possibilities.

A Brief Review of CEO Succession Literature

CEO succession research has been consistently pursued by scholars over the past 45 years. It has attempted to focus on the contextual aspects of succession, providing a richer understanding of the influences of specific internal and external environmental conditions affecting succession decisions and outcomes (Giambatista, et al., 2005). The driving force behind studying succession was the assumption that succession was an inevitable event for every organization and causes undesirable instability (Giambatista, et al., 2005; Grunsky, 1960). Initially, CEO succession was viewed as a threat to an organization. Subsequently, research focusing on CEO succession became an opportunity to look at firm strategy. Research streams looked at the internal

and external environmental influences leading to a succession event, the characteristics of the selected CEO, and the performance outcomes as a result of succession events and selected CEO characteristics. The following sections will address the main research streams related to the study included in this paper: industry level antecedents and CEO characteristics.

Rajagopalan and Datta (1996) and Datta and Rajagopalan (1998) found that industry factors might be less salient than firm specific factors when trying to predict variations and CEO characteristics across firms. In their study they set out to learn how industry conditions operate and the extent to which performance was affected by the fit between industry and CEO characteristics. Their review of empirical research suggested that firm size is positively associated with top manager's age, their organization and industry tenure, and the selection of insider CEOs. They also suggested that firms exhibiting inferior performance are more likely to select outsider CEOs. They suggest that organizational risk has been shown to increase the likelihood of selecting CEOs who are young, have low organizational tenure, and are outsiders.

Their study considers the idea that industry conditions are a widely accepted influence on managerial actions and competitive strategies. For example the degree of industry concentration which serves as an indicator of the level of competition within an industry has been shown to have an impact on the range of competitive actions an organization may take. They suggest that the higher the concentration of competition, the fewer actions available to management. It is also suggested that product differentiation ability measured as industry advertising intensity also forms the basis of competition within an industry. Firms in low differentiation product markets are primarily concerned with cost and efficiency considerations. Industries with high differentiation product markets have more avenues available for competition leading to a wider range of competitive actions. Datta and Rajagopalan (1998) looked at the relationship between industry structure and CEO characteristics, and found that industries with high product differentiation selected CEOs with shorter organizational tenure and higher levels of education. They also found that selected CEOs were more likely to have a non-throughput background and that industry growth rates were associated with short tenure and younger CEO successors.

Firm level affects studies have looked at industry level and environmental influences as well. Ocasio and Kim (1999) found that industry level financial performance positively moderated the relationship between import intensity and the selection of CEOs

with production backgrounds. Other studies looked at industry level regulatory change and found that CEO succession rates did not immediately rise following a change, but eventually did so after a period of time. They also found that CEO succession events after regulatory change would result in improved performance initially, but the effect would be reduced over time. Zhang and Rajagopalan (2003) compared firm and industry level antecedents of the origin of the CEO and found limited support that a firm's prior strategic persistence was positively related to the likelihood of an internal CEO candidate being selected.

CEO Characteristics

Bailey and Helfat (2003) looked at industry-specific human capital and found that firms hiring external successors with less transferable industry-leading skills had a greater variance of post succession performance, which is consistent with the logic that outsiders with fresh perspectives and less transferable skills may undertake more aggressive changes. They observed that very few firms actually hired external successors who had no transferable skills directly related to the firm's industry. Other studies have looked at CEO succession as an organizational attempt to overcome inertial forces and found that career specializations of successor CEOs were often different from those of the incumbent. Ocasio and Kim (1999) looked at the circulation of corporate control concept. They suggest that CEO selection is a "political contest in an ideological struggle across various levels of organizations and organizational fields." It is guided to some extent by mimetic isomorphism, wherein the functional background of the typical CEO in a particular industry is more likely to be desired in the new CEO. Essentially, they argue that if top managers in a particular industry or sector have a fairly narrow set of backgrounds; it is highly unlikely that a new CEO for a firm in this sector would be considered if they didn't have a similar background. This could be due to specialization requirements of a particular industry but it may also be that the firm is simply seeking legitimacy of the CEO in the eyes of the shareholders and therefore mimetic isomorphism forces may also be at play.

Life Cycle Theory

Firm or corporate life cycle stage theory has been used by scholars to explore the effects of environmental factors. The stage of the life cycle has been used to describe stimuli emanating from the external environment, such as a product market

(Anderson & Zeithaml, 1984; Eisenhardt & Schoonhoven, 1990; Hofer, 1975); or as a reflection of internal environmental stimuli, such as organizational life cycle (Jawahar & McLaughlin, 2001; Smith, Mitchell, & Summer, 1985). While the two separate perspectives appear to be conceptually distinct, they can be viewed as separate sides of the same coin (Wernerfelt, 1984). The fluctuating conditions of the product market (new competitors, new technology, changing customer demands) require adjustments on the part of the firm (new products, new processes, new organizational capabilities) in order to remain competitive and meet stakeholder expectations. As Hofer (1975) points out, one of the challenges preventing the development of a theory of corporate and business strategy is the assumption that any such strategy would be situational, depending on too many factors unique to a given situation to allow for the development of generally applicable hypotheses. He contends that all theories of corporate/business strategy must be contingency theories. As Eisenhardt and Schoonhoven (1990) suggest, an environmental variable such as market or life cycle stage captures a "constellation of attributes" rather than one or two single dimensions or even the same single dimensions, which affect a specific firm's strategic decisions. A life cycle stage variable allows for a comparison of a collection of environmental stimuli impacting a set of firms under study in such a way that a similar set of strategic responses would be appropriate from a majority of firms given a particular life cycle stage, which may in turn allow for greater generalizability of the study results, and possibly allow a more general theory of corporate and business strategy to be developed.

Research Hypotheses

This study proposes to test the relationship between corporate life cycle stage as a firm level contingency variable and selected CEO characteristics. Based on Hambrick and Mason (1984), it is proposed that the life cycle stage represents a pattern of internal and external conditions that indicate a configuration of strategic decisions needing to be made in order to improve or maintain firm performance. It is proposed that a board of directors would attempt to match a successor CEO with the strategic decision making demands of the firm, taking into account the corporate life cycle stage. Finkelstein and Hambrick (1996) suggest that a firm matches CEO competencies to firm needs at each succession event. Thompson (1967) suggests that firms will choose leaders who will be effective in dealing with critical

contingencies, including those posed by the industry context and firm life cycle stage. They would accomplish this by selecting a CEO with the set of characteristics they expect would yield the desired cognitive frame needed to observe and interpret internal and external environmental conditions (indicated by corporate life cycle stage), and ultimately to identify and implement the appropriate strategies that would yield maximized firm performance (Anderson & Zeithaml, 1984; Anthony & Ramesh, 1992; Hofer, 1975; Jawahar & McLaughlin, 2001; Smith, et al., 1985; Zajac, 1990).

The benefit of using the corporate life cycle antecedents over industry antecedents is that many firms compete in a variety of industries and the effects of any one particular industry are not as clearly delineated across a multi-business firm as would be the overall effects of corporate life cycle. Corporate life cycle presents a set of financial and organizational challenges that cross all industries and product lines. The Board of Directors will be looking to identify an individual that has the requisite characteristics needed to lead the firm in all of its industries and product lines, therefore, by focusing on an industry specific antecedent, it limits the generalizability of the analysis to similar conditions within the tested industry. Corporate life cycle, on the

other hand, provides a more general contingency variable that may apply to all firms and operational challenges that the CEO would be required to address across industry, business unit, and product lines.

This proposed study seeks to contribute to research in two ways. The first is to introduce corporate life cycle stage as an antecedent variable used to predict selected CEO characteristics. Corporate life cycle is a contingency condition that applies to all firms across all industries including multi-industry operating firms. The second contribution is to further assess the CEO education characteristic, usually measured by years of education or degrees received, by developing an operationalization that includes both the level of education in terms of degrees received and the quality of educational institution attended.

Model and Hypotheses

The research model (figure 1) proposes that the human capital measures of the selected CEO will vary based on the corporate life cycle stage at the time of the succession event. The model proposes that selected CEO characteristics may be moderated by industry.



Figure 1. Theoretical model.

Strategic priorities by life cycle stage and corresponding CEO characteristics

In matching strategic priorities to corporate life cycle stage prior research supports the following: firms in the growth stage are focused on innovative businesses and products, strategic segmentation, building efficiencies in production and marketing, managing the rate of technological change, and developing and maintaining supplier support. There is a focus on improving performance through technical efficiency and organizational coordination (due to the reliance on and development of complex systems and changing organizational structure).

Managing capital investment and expenses associated with strategic priorities is also critical (Anderson & Zeithaml, 1984; Hofer, 1975; Jawahar & McLaughlin, 2001; Smith, et al., 1985).

Firms in the mature stage focus on improving process efficiencies, reducing costs in marketing and distribution and increasing quality. They seek to increase market share through further developed product/market differentiation as well as seeking cost advantages through synergies. In the stagnation stage the major determinants of business strategy are the degree of product differentiation, market share, quality, competitive strength, relationships with customers, vertical relationships and strategies aimed

at exiting markets or increasing investments in declining businesses (Anderson & Zeithaml, 1984; Hofer, 1975; Jawahar & McLaughlin, 2001; Smith, et al., 1985).

In matching human capital/CEO characteristics to strategic priorities, research supports the following: education level reflects an individual's cognitive ability and skills. High levels of education are associated with a high capacity for information processing and ability to discriminate among a variety of stimuli. Education is positively related to the ability to engage in boundary spanning, increased tolerance of ambiguity, and the ability to integrate complex ideas. Education level is also associated with receptivity to innovation. (Bantel & Jackson, 1989; Wiersema & Bantel, 1992).

Research on organizational learning suggests that CEOs without firm level experience are likely to search for new organizational routines, whereas internal successors have strong allegiances to established routines and are less able to instigate and guide change. It is suggested that external ties of executives to entities outside of the industry impart more novel information and exposure to diverse practices than do ties within the industry, leading a board of directors to hire CEO successors with little or no firm specific experience in order to gain a fresh perspective (Bailey & Helfat, 2003).

It is proposed that younger managers bring better cognitive resources to decision-making tasks due to the diminishing effects of age on cognitive abilities (learning ability, reasoning, and memory). Younger candidates generally have received education more recently than older candidates, suggesting that younger candidates would have superior technical knowledge. Research has also found that younger managers have more favorable attitudes toward risk taking (Bantel & Jackson, 1989).

Cognitive orientation, or "cognitive frames" as they are referred to by Hambrick (2007), include information processing ability, cognitive rigidity, commitment to status quo, and the knowledge base comprised of the knowledge, skills and abilities held by an individual. Cognitive orientation/frames are a form of human capital possessed by the selected CEO. This human capital is generally measured through observable characteristics such as firm specific knowledge (organization tenure), and level and quality of educational background (Datta & Rajagopalan, 1998; Hambrick & Mason, 1984; Hitt, et al., 2001; Rajagopalan & Datta, 1996).

Given the relationships between life cycle stage and strategic priorities as presented, and CEO characteristics and cognitive frames as described, the following competing hypotheses are proposed:

Hypothesis 1

Hypothesis 1a: Firms in growth stage select older CEOs.

Hypothesis 1b: Firms in the growth stage select younger CEOs.

Hypothesis 1c: Firms in the stagnant stage select younger CEOs.

Hypothesis 1d: Firms in the mature stage select older CEOs.

Hypothesis 2:

Hypothesis 2a: Firms in the growth stage will select CEOs with less tenure.

Hypothesis 2b: Firms in the mature stage will select CEOs with more tenure.

Hypothesis 2c: Firms in the stagnant stage will select CEOs with less tenure.

Hypothesis 3:

Hypothesis 3a: Firms in the growth stage will select CEOs with higher levels of education.

Hypothesis 3b: Firms in the mature stage will select CEOs with lower levels of education.

Hypothesis 3c: Firms in the stagnant stage will select CEOs with higher levels of education.

Methods

The sample for this study was collected from the 2010 Forbes list of top paid CEOs. From a sample of the top 300 CEOs, all companies having CEO succession event within the past 10 years were included in the study. The age, undergraduate and graduate level of education and institution, years of prior employment with the firm of each CEO was collected from the Forbes list. Complete annual financial statement information was available for 188 companies included in the study and was collected from the Compustat database for the period of 1999 to 2010.

Independent variables

The independent variable used in this study to predict selected CEO characteristics was corporate life cycle stage in the year of the succession event. The corporate life cycle variable was created as a composite variable based on Anthony and Ramesh's (1992) operationalization of a life cycle descriptor construct using financial accounting information collected from the Compustat North American Annual Update database. The life cycle variable was

comprised of firm age at time of succession event since founding, plus three separate accounting report based values: dividend as a percent of income (DP), sales growth from prior year (SG), capital expenditures as a percentage of overall firm value (CEV), and the age of the firm. To calculate the three accounting based values that comprise the composite variable, financial information was collected for each firm in the study for each year from 1999 through 2009. Using three separate formulas to calculate a firm's DP, SG, and CEV, each value was calculated for each of the three accounting variables for each firm for each year from 1999 or 2009. The firms were then assigned to life cycle stage group for each variable (1=growth, 2=mature, 3=stagnant) based on the firm's relative ranking among the other firms on a given variable in a given year with a third of the firms identified as having the highest third, middle third or lowest third of a given value for a given year on a given variable. For example, firms in the top third of the sample with the higher DP values are assigned a 3, with the DP value based on a model suggesting firms in growth stage would be reinvesting earnings rather than distributing them to share holders. Conversely, firms not paying dividends are assigned a 1, indicating a growth orientation.

Another example would be firms with the highest third CEV values are assigned a 1, indicating growth orientation through increased investment in plant and equipment. Firms in the lower third of the CEV values would be assigned a 3, indicating lower levels of investment in capital as a proportion of income.

The final step was to create the composite life cycle descriptor variable used in the study by calculating the mean value of the DP, SG, CEV and firm age for each firm for the year of their succession event and rounding the value to a whole number creating three levels of the categorical variable: Life Cycle Stage (1=growth, 2=mature, 3=stagnant). It is proposed that this method of categorizing firms captures a broader set of operating conditions described by Hambrick and Mason as "The Objective Situation" that the new CEO would be expected to interpret and react to. Based on the range of strategies that are typically considered when managing firms in the growth, mature or stagnant stage (Anderson & Zeithaml, 1984; Anthony & Ramesh, 1992; Smith, et al., 1985), life cycle stage as a predictor variable suggests the potential set of strategic choices that would normally be expected by board members (given the overall internal and external influences on firm strategy) and also serves to capture the current conditions at the time of the selection decision, rather than the reaction to the conditions as is captured by

strategic choice measures such as capital intensity, integration, acquisitions and diversification. The CEO is being selected to provide leadership in light of present conditions and would be responsible for making strategic choices. Using current strategic choices as a measure may not capture the full consideration of the expectations of the strategic choices that the firm would make once the new CEO is in place. It would be reasonable to expect that given current corporate level operating conditions factoring in all business units as reflected by the corporate life cycle stage at the time of the decision, a board of directors would anticipate which strategies would be best for the firm for maintaining and/or improving performance and select a CEO possessing the characteristics that would best fit with the anticipated strategies.

Dependent variables

CEOs age was measured in years as of the year of the succession event. Firm tenure was measured as the difference between the total years with the firm and the year of the CEO succession event. Education was a composite variable made from two education measurements: level of education and quality rating of the educational institution where highest level of education was attained. Education level was measured on a seven-point scale based on Finkelstein (1988). All CEOs in this study had attained post-secondary education degrees. A Bachelors degree was measured as a 3, Masters and Jurist Doctorate degrees were measured as 5, and Doctoral degrees were measured as 7. The use of education quality ratings is designed to further distinguish the effects of education. Based on Hitt, et al., (2001) where they used a published ranking of law school programs as a predictor for performance outcomes of law firms, this study proposes that the effects of the quality ranking of the educational institution where degrees were attained can add further information regarding the relationship between CEO selection and education as a CEO selection characteristic. A ranking system was created using U.S. News and World Report's 2010 college rank to create a categorical variable called College Rank Level (Best Colleges, 2010). Educational institutions ranking in the top 20 of both the national universities and national liberal arts colleges were given a quality ranking of 2. Institutions ranking in the top 100 of both the national universities and national liberal arts colleges were given a quality ranking of 1. Institutions listed as second tier, or unranked in the U.S. News and World Report 2010 College Ratings were given a value of zero.

Control variables

As suggested by prior CEO succession studies, control variables were used in the models. The first was firm size, measured as the number (in thousands) of employees reported to shareholders. The second control variable was relative firm performance measured as return on total assets (earnings before interest and taxes divided by total assets) (Datta & Rajagopalan, 1998). The source of the data for both controls was the Compustat North American Annual Update database

The hypotheses were tested using OLS regression. Table 1 presents the descriptive statistics including means, standard deviations, and correlations. The mean age of the selected CEO in the sample was 53.71 with a standard deviation of 6.15. The minimum CEO age was 38 and the maximum was 71. The mean CEO tenure was 13.72 years with a standard deviation of 11.69 years and a range of 0 to 40 years. The mean education measurement was 4.9 with a standard deviation of 2.03, ranging from a minimum of 0 to a maximum of 9. The frequency of the life cycle stage groups included 10 firms in the growth stage, 130 firms in the mature stage, and 48 firms in the stagnant stage.

Results

Table 1. Means, standard deviation and correlations (N=188).

Variables	Mean	S.D.	1	2	3	4	5
1. Age	53.71	6.15					
2. Tenure	13.72	11.69	.202 ^{**}				
3. Education	4.89	2.08	-.165 [*]	-.005			
4. Firm Life Cycle Stage	–	–	.045	.127	.159 [*]		
5. Firm Size	62.04	166.69	.024	.071	-.022	.055	
6. Firm Performance	.10	.07	-.095	.113	-.235 ^{**}	.046	.048

Significance levels: **p < 0.01; *p < 0.05

Table 2. Result of Regression analysis (N=188).

Variables	Age		Firm tenure		Education		Education level		College rank	
	Model I	Model II	Model I	Model II	Model I	Model II	Model I	Model II	Model I	Model II
Intercept	54.505***(.800)	54.315***(.863)	11.588***(1.515)	12.428***(1.651)	5.604***(.264)	5.888***(.281)	4.393***(.197)	4.612***(.211)	1.815***(.180)	1.872***(.197)
<i>Controls</i>										
Firm Size	.001 (.003)	.001 (.003)	.005 (.005)	.004 (.005)	0.000 (.001)	0.000 (.001)	.000 (.001)	.000 (.001)	.000 (.001)	.000 (.001)
Firm Performance	-8.653 (6.554)	-10.318(6.537)	18.656(12.407)	19.393(12.506)	-7.087***(.2166)	-7.611***(.2130)	-3.586*(1.669)	-4.056*(1.647)	-3.223*(1.519)	-3.444*(.230)
<i>Firm life cycle effects</i>										
Growth		-4.091 (2.564)		-1.120 (4.906)		-1.768*(.836)		-1.364*(.613)		-.504 (.571)
Mature		1.332 (1.015)		-2.761 (1.942)		-.755*(.331)		-.558*(.247)		-.134 (.230)
Stagnant		3.490 (2.552)		-3.981 (4.883)		1.164 (.832)		.533 (.611)		.524 (.569)
F-value	0.924	1.664	1.602	1.133	5.404**	4.603**	2.366 ⁺	3.074**	2.252	1.307
Model R ²	0.01	0.044	0.017	0.03	0.055	0.112	0.025	0.079	0.024	0.035
Change in R ²	–	0.034	–	0.013	–	0.057	–	0.054	–	0.011

*Unstandardized coefficients (standard errors in parentheses) based on OLS regression.

Significance levels: ***p < 0.001; **p < 0.01; *p < 0.05, ⁺p < 0.10

Five separate regression models were run using CEO age, tenure, and education as response variables over the corporate life cycle stage predictor variable. The results are shown in table 2. Of the five models run, only the model using education as the response variable was significant at the 95% alpha level with p-value of 0.001 thus failing to providing support for hypotheses 1a-d and 2a-c. The model did suggest that there was a statistically significant relationship between education and both the mature and growth corporate life cycle stages. The model suggests that firms in the mature life cycle stage, on average, select

CEOs with an approximately 0.76 lower level of education than average, as predicted by hypothesis 3b. However, the model also suggests that firms in the growth life cycle stage, on average, select CEOs with an approximately 1.77 lower level of education than average, which is in the opposite direction as predicted by hypothesis 3a. Overall, with an R^2 of .112, the life cycle stage variable explains approximately 11% of the variance in the education level of selected CEOs. Table 3 presents a summary of the hypotheses tests.

Table 3. Summary of the hypotheses tests.

Hypotheses	Findings
Hypothesis 1a: Firms in growth stage select older CEOs.	n.s.
Hypothesis 1b: Firms in the growth stage select younger CEOs.	n.s.
Hypothesis 1c: Firms in the stagnant stage select younger CEOs.	n.s.
Hypothesis 1d: Firms in the mature stage select older CEOs.	n.s.
Hypothesis 2a: Firms in the growth stage will select CEOs with less tenure.	n.s.
Hypothesis 2b: Firms in the mature stage will select CEOs with more tenure.	n.s.
Hypothesis 2c: Firms in the stagnant stage will select CEOs with less tenure.	n.s.
Hypothesis 3a: Firms in the growth stage will select CEOs with higher levels of education.	opposite of prediction
Hypothesis 3b: Firms in the mature stage will select CEOs with lower levels of education.	supported
Hypothesis 3c: Firms in the stagnant stage will select CEOs with higher levels of education.	n.s.

To further explore the education construct, two regression models were run after separating the education composite variable into its two constituent parts: education level and college rank. Of the two additional models, only the model using the education level as the dependent variable was statistically significant. The relationship between education level variable (measured as the type of degree held) and corporate life cycle stage was the same as the composite education variable (measured as the type of degree held and the rank of the institution where highest degree was earned) in terms of direction but was smaller in magnitude: beta coefficients for growth and mature corporate life cycle stages of -1.768/-0.755 and -1.364/-0.558 for education level only versus composite education variable, respectively. Additionally, the model using education level as the dependent variable produced an R^2 of .079, as compared to an R^2 of .112 for the composite education variable model, a 40% increase in the models explanatory power resulting in an additional 3% of the variance being explained though the inclusion of college rank in the education variable.

Discussion

The stream of research that is interested in the relationship between the human capital possessed by a selected CEO as part of a succession event and the internal and external objective situation that is present at the time of, or anticipated immediately thereafter, the selection decision is made by the board of directors, is focused on one main thing: can certain characteristics of a selected CEO be predicted based on the strategic choices the CEO is likely to face once in the position (Hambrick & Mason, 1984). Critical to testing the relationship between strategic choices and selected CEOs is establishing the set of strategic choices that guide the selection process. Most corporations have portfolios of multiple business units that operate across different industry and sub-industry groups; and it is difficult, if not impossible, to separate out the individual affects of the individual product life cycle stages and industry specific effects of the underlying business when studying CEO succession at the macro level. A researcher generally must identify the dominate industry within which the firm is operating and apply

measures appropriate for the industry or sector in order to measure the sample firms in a study along a common axis. By using a construct such as corporate life cycle stage as the dominant contingency variable, it is possible to consistently measure firms comprised of multiple businesses across various industries along a critical axis that would suggest the nature of the strategic choices a new CEO would face.

This study set out to investigate the relationship between corporate life cycle stage and CEO selection characteristics resulting from a succession event. We introduced a new firm level construct as a predictor variable that could benefit this stream of research by establishing a model that might apply at the corporate level across firms competing in multiple industries in a way that is not currently being addressed through industry specific approaches. We proposed several hypotheses to test the relationship between the construct and a set of CEO characteristics frequently studied in the research stream. We also proposed a new operationalization of the education construct often used as a response variable in CEO succession studies as well as a predictor variable in studies in the human capital management research streams.

The lack of adequate levels of statistical significance for the models testing the hypotheses regarding the relationship between a CEO's age at time of selection and the amount of firm specific experience he/she possessed may indicate that these variables are closely related to the firm level antecedent construct of corporate life cycle stage. However, the findings for the third set of hypotheses regarding education suggest that the corporate life cycle stage construct can be used to predict the relationship between the education characteristics of a selected CEO and firms in the growth and mature stages. The results suggest that selected CEOs for firms in the growth stage will possess lower education levels than those selected by firms in the mature stage. And both growth and mature stage firms will possess lower levels of education on average than CEOs selected by firms in the stagnant life cycle stage.

Based on the prior use of education as a proxy for cognitive ability and cognitive frames, it is suggested that firms in the mature life cycle stage are more interested in CEOs with higher capacity for information processing and the ability to discriminate among a variety of environmental stimuli than those selected by firms in the growth stage (Bantel & Jackson, 1989; Wiersema & Bantel, 1992). Additionally, it appears that mature stage firms are more interested in a CEO's ability to integrate complex ideas and receptivity to innovation than those of growth stage firms. This could be due to a board's desire to return the firm to a growth

orientation on the one hand, in the case of the mature stage firm, or due to the lack of concern for these issues by the board of directors of growth stage firms. It also appears that the educational institution has some impact on the CEO's selection. It may be attributed to the perceived affects of the quality of education received, or the assumption that attending a highly ranked institution is indicative of the CEO's ability to be accepted by the institution because of their high cognitive abilities. Also, the personal and professional networks created while attending college may play a significant role in the CEO selection processes which would be more specifically related to the institution attended as opposed to the level of degree received. This suggests that further study on the relationship between education institution and CEO selection characteristics could yield some valuable information regarding the effect of educational institution as a selection criteria for CEO succession and how the life cycle stage strategic priorities relate to this dimension of the education proxy.

Limitations and Future Research

While this study suggests that there is a relationship between firm CEO selection criteria and specific corporate life cycle stages, there are some limitations that need to be discussed. This study looked at corporate life cycle stage in the year of the succession event and does not take into account the ebb and flow of life cycle stages a firm passes through and how they relate to specific CEO succession events or selection characteristics studied. Further research should look at the affects the duration of a life cycle stage has on CEO selection criteria and the impact of frequently moving between life cycle changes has on CEO selection criteria. Firms associated with highly dynamic products and technologies may experience more frequent succession events and therefore may vary in their CEO selection criteria than more stable organizations.

This study only looked at CEO characteristics. Considering the characteristics of the top management team will yield stronger explanations of organizational outcomes than just focusing on the CEO alone. Using demographic characteristics of CEOs can be a valid (although incomplete) proxy of executive's cognitive frames. The use of demographic indicators, however, does not address the real psychological and social processes that lead to certain executive's behaviors. We are still dependent upon a black box problem to connect the cause to the effect (Hambrick, 2007). After the original upper echelons theory article was published,

Finkelstein and Hambrick (1990) introduced two extensions to upper echelons theory. One included the introduction of managerial discretion as a way to reconcile opposing views regarding the affect top executives have on organizational outcomes. The first view is that top executives have considerable direct effect on their organizations. The alternative view, based on population ecology and institutional theory suggests that organizations are inertial, being driven along by external forces, and constrained by mimetic and normative isomorphism. Hambrick (2007) argues that both of these views are valid depending upon the level of managerial discretion that exists within a firm. Discretion exists when there is an absence of constraint. The implications of managerial discretion for upper echelon's theory suggests that upper echelon's theory can offer reliable predictions of organizational outcomes in direct proportion to how much managerial discretion exists. This study did not consider managerial discretion and therefore may have limited generalizability to organizations matching the sample.

We suggest that future studies using the life cycle stage variable and education operationalization would benefit by including the managerial discretion construct. We would also suggest that affect of life cycle on the rate of forced and voluntary succession events could provide researchers and practitioners with a new model to consider the environmental effects at play in these instances. And, possibly, studies looking at the relationship between forced succession and voluntary succession and selected CEO human capital, with a focus on looking at configurations of human capital including: age, education, and firm experience, functional experience, industry experience, complimentary industry experience, area of specialization, and specific type of advance training could provide more exacting information about the selection criteria boards of directors are using given a firm's life cycle stage at the time of a succession event.

Conclusion

The compilation of knowledge, skills abilities and other characteristics that make up an individual's human capital, is a unique construct at the individual level of measurement. It is practically impossible to identify why an individual is selected for a particular position based on only one or two measurements of their human capital characteristics. Hambrick and Mason (1984) encouraged many scholars to undertake macro approaches to study the relationships between human capital measures and CEO selection practices, but they may at best be

secondary to the actual reason for the selection of a specific CEO candidate. Even in Hamori (2010) which focuses on the role of search firms in executive recruiting, it appears that prior job title shows more of a relationship to being selected for an executive position than their accomplishments. To better understand the relationship between a firm, and industry, and the reason for the selection of the specific CEO, it will take better measurements of human capital. These might include combinations of such attributes as the amount and type of experience along the dimensions of general life experience, industry specific experience, and specific functional business experience. They might also include the type, amount or level, and the quality of education received by the individual. Additionally, such human capital attributes as cognitive ability, ability to deal with uncertainty and ability to anticipate or predict future events or trends with some regularity, are all important characteristics that may be possessed by individuals chosen for the top position in an organization. All of these KSAOs contribute to an individual's overall stock of human capital, and the unique combination of these attributes will be valued differently by different boards of directors of different organizations within different industries at different stages of a firm's life cycle.

The results suggest that corporate life cycle stage and its associated strategic challenges can be used to predict CEO education characteristics across single and multi-business corporations of varying sizes across industries. These new findings should encourage CEOs, investment analysts, corporate directors, and research scholars to fully consider the relationship between CEO education characteristics and the life cycle stage of a firm facing a CEO succession event. The environmental conditions under which firms operate at the time of their CEO selection will further affect the value placed on certain CEO characteristics. Matching the CEO characteristics set possessed by an individual and the value of that particular set of characteristics established by the firm seeking a new CEO will determine who wins the competition for the top spot in the management suite of an organization.

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