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## *CEO Working Paper Series*

Building Human Capital Advantage in Initial Public Offerings (IPOs):  
The Effect on Long-Term Firm Survival and Performance

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No society can provide its members with a high quality of life unless it has effective organizations.

Edward Lawler III

## **ABSTRACT**

Over the last few decades, research focused on building competitive advantage through human resource (HR) practices and human capital resource (HCR) strength has expanded. Numerous literature reviews suggest that HR has a positive impact on firm performance; however, the specific ways in which this happens continues to be a black box. In this research study, we take a unique perspective by looking at the competitive advantage human capital provides with a sample of firms going through their initial public offerings. Additionally, by using a broader conceptualization of the factors that can impact human capital resources, the study focuses on not only formal HR practices but also those less-institutionalized methods leaders deem important and worthy of their attention. Using survey data collected from the firms' leadership teams in the beginning of the year following their IPO, we test the effects of their approaches to human capital on long-term (10-year) firm survival and performance. Results show that two resources, innovation and employee energy, positively influence long-term survival; a factor labeled HR system has no effect on survival, and a focus on rewards has a negative effect.

### **Keywords:**

Human capital; initial public offerings; resource and attention based views of firm

Firm expansion is critical for growth in jobs and wealth, and as such, the last few decades have seen increased emphasis on understanding how growing companies use their assets to outmaneuver competitors (Kauffman Foundation, 2014). This interest in the internal qualities of the organization as a means of competition led to the increased popularity of the resource based view of the firm (RBV) (Barney, 1991, Kraaijenbrink, Spender & Groen, 2010, Wernerfelt, 1984), which proposes that a firm's sustainable competitive advantage stems from resources that are valuable, rare, inimitable, and for which substitutes do not exist (Barney, 1991). The basic implication of the theory is that managers should seek to develop and exploit internal resources that possess these characteristics (Barney, 1995). In practice, Aaker (1989) identified the route to sustainable competitive advantage as follows: (1) identify relevant assets and skills, (2) select the assets and skills relevant to the future needs of the market, and (3) implement programs which will develop, enhance, and protect these assets and skills.

Growing out of this work has been the realization that human capital is a critical organizational resource that can provide competitive advantage to firms (Barney & Wright, 1998). However, human capital does not necessarily equate to human resource (HR) practices, and unfortunately, much of the research conducted to date linking human capital to firm-level performance has been dominated by exploration of HR policies and practices (Wright & Boswell, 2002). The assumption is that formal human resource practices combine in various ways to create firm-specific human capital that leads to competitive advantage (Jackson, Schuler & Hang, 2014). Thus, competitive advantage is not guaranteed by the mere existence of human

capital or human resource management practices; it arises only when people are leveraged in alignment with the specific needs of the firm. According to Campbell, Coff and Kryscynski (2012: 377), "human capital can be at the core of a resource-based advantage if it is valuable, rare and can be kept from rivals." In this paper we explore ways in which newer firms transitioning to being public for the first time, through an initial public offering, create inimitable human capital competitive advantage.

Researchers who study entrepreneurial and small to medium-size firms note that in these organizations the way human capital is managed is not identical to what is found in larger organizations. In fact, according to Cardon and Stevens (2004: 318), "in small and emerging firms, founders do not talk about HR, but rather as a flow of interrelated activities that they deal with concerning their employees .. (they) stumble upon synergistic ways to manage their personnel that do not easily fit into our preconceived traditional HR notions." Thus, in order to expand the research on human capital as a competitive advantage, the research presented in this paper explores the human capital resource (HCR) from several new perspectives.

The context of this study is higher growth firms, in particular, a large cohort of initial public offerings (IPOs). The IPO is the time a firm goes public for the first time; it is a critical time for organizations. The IPO is a particularly important time in the growth cycle because it is a strong imprinting time, where the management and human resource practices that affect human capital can have long-standing effects on the firm (Baron, Burton & Hannan, 1999; Stinchcombe, 1965). Preparing for an IPO is a significant event that involves all employees in some way, and

firms get quite distracted during the process (McKinley & Scherer, 2000). Therefore, leaders benefit from creating an environment that retains employees who remain with the firm post IPO when commitments to shareholders, or execution of promises, are important. Also, at the time of the IPO the firm receives cash to deliver on many earlier promises to employees and customers (Martens, 2004). An IPO creates a critical stage in the lifecycle of any company and the strategic decisions leaders make during this time can affect firm performance well into the future (Marquis & Tilcsik, 2013; Stinchcombe, 1965).

As firms move toward the IPO, they face the need to add new structures and processes that make them appear to be more legitimate and to help them minimize the risks inherent in moving into the public eye for the first time and subsequently executing on their promises of growth (Certo, Holcomb & Holmes, 2009). Many of these firms have made it to the IPO not from successfully using bureaucratic HR practices but by creating work environments where individuals can thrive and grow (Wright and Snell, 1998). Thus, understanding human capital at this critical time where they are teetering between the entrepreneurial climate built to make it to the IPO and the larger firm needed to deliver on shareholder expectations, presents a unique opportunity for learning about competitive advantage and, in particular, creating inimitable human capital assets.

In order to provide a theoretical perspective that taps into the uniqueness of the IPO context, we merge the resource based view of the firm with another body of work, the attention based view of the firm (ABV). Ocasio (1997) proposed the ABV as a complement to the

resource based view and suggested that the primary role of a firm is to collect, direct, and focus attention of managers to identify and address issues. While there are similarities in the ways companies devote attention to issues, it is likely that a firm's attention profile is unique and not imitable, meaning it can be a "resource" in the sense defined by the resource-based view of the firm. We suggest that combining these two views provides a more complete theoretical understanding the way human capital is used to create competitive advantage in IPO firms.

Thus, in the context of IPOs, this study examines what aspects of human capital received attention from leaders, and then we study how these various components predict longer-term performance. Two outcome variables in the largest IPO cohort to date (1996) are examined. In early 1997, after all firms completed their IPOs, we sent surveys to executives of these companies. In this survey, we asked leaders to rate the degree to which they thought various aspects related to human capital were important to their firm's performance at the time of the IPO. Thus, using a retrospective questioning strategy, we explore which aspects these leaders thought were important and which they then paid attention to as they made their way to the IPO and executed the IPO. In summary, the purposes of this study are to 1) explore which aspects of human capital resources leaders in IPO firms received attention, and 2) assess the extent to which these factors ultimately did affect firm thriving (survived and had a stock price at least the price they went out at during the IPO) as well as surviving overall ten years after their IPO.

## **FOUNDING CONDITIONS, HUMAN CAPITAL AND FIRM SURVIVAL**

This paper is grounded in the idea that long-term change can be affected by events that occur at specific times in a company's lifecycle. While it may seem intuitive that this is the case, this section lays out the evidence for the process of "imprinting" at the time of the IPO (Marquis & Tilcsik, 2013; Stinchcombe, 1965). Variations in regulation, labor markets, trade laws, and capital availability can help or hinder fledgling firms. Such external factors mitigate the number of firms entering the market and the rate at which individual firms grow, but their influence generally diminishes over time (Bamford, Dean, & McDougall, 2000). One only needs to look at how closely the number of companies that go public each year aligns with trends in competitive and economic conditions to see this relationship (e.g. Gao, Ritter, & Zhu, 2013).

It is implicit in our view that founding conditions and actors have resilient influences on the culture, organization, and success of companies. Prior research has shown that internal and external factors can imprint themselves on a firm and persist in the face of change (Marquis & Tilcsik, 2013; Stinchcombe, 1965). Factors within firms at founding also influence their success later on; these include CEO strategy (Boeker, 1989; founding team experience (Delmar & Shane, 2006; and management tenure (Fischer & Pollock, 2004).

We suggest that the IPO itself is a significant imprinting event because it brings with it new capital, stakeholders, and often management. While the complexity and breadth of knowledge a management team possesses stays steady from founding to IPO (Beckman & Burton, 2008), many companies hire professional management teams and add non-executive

directors just prior to going public (Burton, Helliard, & Power, 2004). This significant point of corporate restructuring, combined with the changes of being a newly public company, introduces “cognitive order” for the top management team and “cognitive disorder” for employees further down the line (McKinley & Scherer, 2000). We propose that a firm’s decisions pertaining to human capital at IPO create long-lasting imprints that significantly influence the success of the firm. Stated formally:

*Hypothesis 1: Factors affecting human capital resources at the time of the initial public offering will have an effect on the firm's long-term performance.*

### **RESOURCE AND ATTENTION-BASED VIEWS OF THE FIRM**

The resource based view of the firm is a relatively recent entrant into the strategy literature (Wernerfelt, 1984), although its roots are strongly tied to the organizational economics work of Penrose (1959), Schumpeter (1934) and even Ricardo (1817). The resource-based perspective maintains that resources internal to the firm are the major determinants of competitive success (Wernerfelt, 1984; 1995). The theory begins with the notion of heterogeneity of resources, which proposes that a firm’s resource profile differs from its competitors’. These heterogeneous resource portfolios are, in turn, responsible for variability in financial performance across firms (Peteraf, 1993) and competitive advantage can come about through either (1) possessing better resources than competitors or (2) making better use of the resources than competitors (Mahoney and Pandian, 1992). Thus, firms seek competitive advantage by acquiring, developing, and exploiting resources that provide economic value, are



not possessed by competitors, and that competitors would find difficult or costly to imitate (Barney, 1996).

Central to the resource based view of the firm is the definition of “resources.” Wernerfelt defines them as “anything which could be thought of as a strength or weakness of a given firm...those (tangible and intangible) assets which are tied semi permanently to the firm,” (1984: 172). Examples provided by Wernerfelt included “brand names, in-house knowledge of technology, employment of skilled personnel, trade contracts, machinery, efficient procedures, capital, etc.” (P. 172).

Barney expanded upon this definition to include “all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc., controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness,” (1991: 101). Barney categorized these resources into three types: physical, human, and organizational. Human resources include characteristics of the individuals comprising the firm, such as their experience, judgment, and intelligence. Organizational capital resources include such things as the firm’s structure, planning, controlling and coordinating systems, and the informal relationships between individuals and groups both within and outside the firm. Physical capital resources refer to the firm’s plant and equipment, technology, and geographic location.

Similarly, Mahoney and Pandian (1992) broke down firm resources into the categories of land and equipment, labor (e.g. workers’ capabilities and knowledge), and capital (both tangible and intangible). Hall (1992) proposed a typology of intangible assets based on whether the

resources were assets that a firm owns, such as intellectual property, patents, trademarks, trade secrets or databases, or skills and competencies such as the know-how of employees, collective aptitudes, or culture. Hall (1992) also suggested distinguishing whether resources were people-dependent or people-independent; noting that most, but not all, assets exist independently of the people comprising the organization, but that all of the skills were dependent upon those people, a point to which we will return briefly.

The attention based view of the firm is also a recent entrant to the literature; it proposes that, at the most basic level, the firm provides a way to manage and focus attention. The ABV has roots the works of Simon (1947), but Ocasio's work (1997) greatly expands the idea by providing a detailed model of how ecological constraints, contingencies, and feedback interact and influence how decisions are made within companies.

Ocasio defines attention as “[T]he noticing, encoding, interpreting of time and effort by organizational decision-makers on both a) *issues*: the available repertoire of categories for making sense of the environment: problems, opportunities, and threats; and b) *answers*: the available repertoire of action alternatives: proposals, routines, projects, programs and procedures” (1997:189). With this definition in hand, the case is then made that the firm is fundamentally a framework of processes for managing attention, which it does based on three principles: 1) *focus of attention*, which proposes that managers actively select what issues and answers they pay attention to and that how they behave is also dependent on what these issues are; 2) *situated attention*, which means that the focus of a manager's attention is influenced by

his or her own surroundings; and 3) *structural distribution of attention*, which proposes that the manner in which attention is spent depends on the structure, organization, and resources available to the firm in which the manager operates. At the core of the ABV lies one simple fact: The allocation of attention is zero sum, so when managers focus on one issue, they necessarily take focus from others (c.f. Weick and Sutcliffe, 2006).

This conceptualization of attention can shed light on issues in the human capital resource and human resource strategy literatures. Although macro or strategic HR research has given us many deep insights, our understanding of how these strategies play out remains a “black box.” We do not, for example, know whether 1) the mere existence of HR policies and practices leads managers to action; 2) how and if managers change behavior according to these policies; or 3) how any of this affects firm performance.

Our review of the literature did not find any applications of the ABV in the human capital or human resource management research domains, but several works in the strategy literature provide empirical support for the theory. Cho and Hambrick (2006), for example, found that the top management teams of several airlines refocused attention in response to deregulation of the US airline industry and tailored novel strategies according to the new regulatory landscape. This supports the ABV's theoretical linkage of the external environment to the decision makers within the firm and their subsequent behavior.

Sullivan (2010) examined how problems "compete" for attention and how firms devote attention to extant problems while taking on new ones. She found, as Ocasio (1997) predicted,

that the manner in which attention is focused varies predictably with internal firm conditions. Competition for attention occurs in firms with a limited capacity for attention and limited resources for scaling it up.

Gulati and Higgins' (2003) research not only lends empirical support for the ABV, but it does so using a sample of IPO companies, making it especially relevant here. The authors hypothesized that investors allocate funds in ways that allow them to avoid "making two types of errors: investing in untrustworthy firms and missing good opportunities." Each investor develops a program of action, or individual logic, in order to avoid each of these mistakes. These logics, in turn, can influence company performance after IPO because they signal value and influence the behaviors of other investors and the company itself. Unlike these authors, who examined the effects of external attention on IPO success, we approach the question from the inside, by looking at what resources leaders pay attention to and think are important. We suggest that managers recognize the competitive advantage human capital provides; however, there will be variance in the aspects of human capital that leaders think are important and thus receive attention. This difference is a source of long-term competitive advantage, and as such, those aspects of human capital that are most inimitable are the resources that will provide the greatest advantage for longer-term growth and survival. Stated formally:

*Hypothesis 2: Attention and importance placed on more inimitable factors affecting human capital resources will lead to greater long-term firm performance outcomes.*

## METHODS

The study was conducted with a cohort of firms that went public in 1996, the year with the highest number of U.S. IPOs to date. The data come from a variety of sources, including investment prospectuses, surveys of members of the top management teams at those firms, and financial data from the time of the IPO through year end 2006. Financial data were obtained from The IPO Reporter, COMPUSTAT and CRSP.

### **Prospectus Data Collection and Coding**

Several variables used in the analysis, primarily controls, were obtained from investment prospectuses, which are documents provided to the Securities and Exchange Commission (SEC) prior to the public offering. Firms follow strict formatting and reporting guidelines mandated by the SEC, and can be held liable for information that might mislead investors (O'Flaherty, 1984). A prospectus generally includes information on the price and number of shares being offered, the core products sold by the company, detailed information on present and future risks to the firm, biographical information of the top management team, and recent financials. The typical prospectus writing process involves at least three lawyers (one for the company and one for each of the investment bankers), two investment banking firms, and at least one certified public accountant. Each party has a vested interest in providing the public with an honest view of the company.

A team of four coders read the prospectuses and coded the data according to rules developed by Welbourne and Andrews (1996). Questions were resolved by group consensus and

only information within the prospectus was coded, no outside resources were consulted. A random sample of the prospectuses were cross-coded, and agreement on all the variables used in this study was over 90%.

### **Survey Development and Administration**

Our approach to measuring management practices, i.e., beliefs or routines that affect human capital, took a broad perspective, intentionally going beyond those generally found in the traditional HRM practices literature. Phase one involved interviewing entrepreneurs and management teams at five fast-growth firms. The teams at two of these companies were actively preparing for IPOs, while the remainder intended to stay private. We asked members of the senior management team to tell us how they managed people, what issues they spent time on or paid attention to, and what about their people management philosophy mattered most to them. Our team took notes from the interviews and created broad categories of actions and beliefs. It was clear from our interviews that these leaders were not at all enamored with formal human resource practices; in fact, one CEO went out of his way to not hire HR professionals and avoid what he called "HR bureaucracy." Instead, he had a full-time recruiter on staff, asked managers to take on HR work, and personally created many practices to motivate employees. Only one firm, which was just months away from going public, employed a senior HR executive. Even there, the other executives did not mention formal HR characteristics as often as informal guiding beliefs such as creating a family atmosphere and creating a sense of urgency. After reviewing the HR practices and strategy literatures and compiling the interview notes, we created

a draft survey and asked the executives for feedback. After some slight rewording, we finalized the survey and pilot tested it via telephone. We used the results of the phone survey and feedback from executives to settle on the 32 human capital items listed in Table 1.

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Insert Table 1

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We mailed paper surveys to 802 companies that both went public in 1996 and employed people. Representatives of 288 organizations returned 302 surveys, a company level response rate of 36%. Each survey had an identification code allowing us to link survey, prospectus, and firm performance data.

Of the respondents, 82 were Chief Executive Officers or Presidents, 64 were Chief Financial Officers, and the remaining 220 occupied senior positions ranging from Controller to Executive Vice President. We coded responses in two ways, first using data from the highest ranking officer's responses. In descending order these were: Chairman, CEO, President, Chief Financial Officer (using the logic that knowledge of the company and IPO process was highest for them); followed by the most senior executive based on salary ranking patterns (e.g. officers in technical, marketing, human resource management or administration). The second way of aggregating the data was averaging responses from all individuals within one firm. The correlation between these two methodologies ranged from .92 to .97 for the variables used here. For this study, we uses measures from the second, averaging, method because it was more

conservative and less susceptible to biases introduced by single individuals.

### **Survey Data Bias Analysis**

We ran t-tests examining key metrics for the sample that responded to the survey compared to those who did not and found no statistically significant differences for the following variables: last recorded stock price for out of business firms, stock price 10 years post IPO, all death related variables using the four coding strategies listed in Table 2, total number of employees at IPO, book value per share at IPO, offering price IPO, size of offering in shares, total number of paragraphs in the prospectus risk section, and NAICS industry codes. However, the manufacturing industry variable was close to significant at the  $p \leq 0.07$  significance level.

### **Independent Variables: Aspects Affecting Human Capital-Based Resources**

The survey addressed a broad number of management and HR practices with the potential to influence the quality and strength of the human capital resources. For each of the 35 questions, participants were asked to rate the “importance of each item to the firm’s overall success to date.” The assumption is that executives pay attention to those items which they think are most important. A one to five Likert scale was used with one being not important at all and five rated as very important.

### **Stock price**

Economic performance, as gauged by the stock market, is commonly used in academic literature to measure the success of IPO firms. We use stock price here not only because of its prevalence, but because accounting measures of performance like earnings per share, ROA, and



ROE are susceptible to manipulation and can be computed in various ways (see Lev and Thiagarajan, 1993). For these reasons, our first independent variable is 2006 year-end stock price; for those firms that did not survive ten years, we included their last recorded stock price as reported by CRSP.

### **Company Survival**

The New York Stock Exchange and NASDAQ require the companies they list to meet minimum requirements for volume, quarterly reporting and stock price. If a company fails to meet these requirements, it can be delisted from the exchange. Delisting does not necessarily mean a company is failing, but not meeting minimum listing requirements often does. The CRSP database includes delisting causes, which we used to guide our research into various forms of coding survival status or whether a company was “alive” or “dead.” In cases like bankruptcy, the occurrence of death is clear; but in other instances, like mergers, determining survival required the in-depth types of analysis described below.

The first method of coding survival involved research into the cause of the firm's delisting, be it a merger, acquisition, reporting failure, or so on. Mergers and acquisitions were the most common cause of delisting (39%) and when a company merged or was acquired, we looked at whether the public firm(s) maintained their identity following the event *e.g.* kept their name and branding, leadership, operations, locations and employees. For example, Fusion Medical Technologies, Inc. went public in 1996 and was acquired by Baxter International, Inc. in 2002. According to Baxter, the merger was “seamless” for both companies and their employees.

Baxter currently is very much alive and trading the NYSE, so Fusion Medical Technologies Inc. is considered a survivor. On the other hand, Disney acquired Infoseek in 1998, only to shut down the service and lay off its employees three years later, which we coded as a company death.

Next, we used more rigorous and conservative coding of survival where all mergers counted as deaths. We did this based on the logic that regardless how the merger proceeded, the company that went public changed its original form. Conversely, our third coding method always counted mergers as living, based on the notion that the original company, survived in some form within its parent. Last, we blended firm survival data with stock price for companies alive through 2006. We created a category that coded the firm as positive if it survived (using the research-based version of coding) and also had a stock price at year-end 2006 at least equal to the price it went out at in its original IPO. There was good reliability between the four survival measures (Chronbach's Alpha = 0.78). There was also fair reliability between our investigative coding of deaths and the method using CRSP delisting data and classifying mergers as survivors (Chronbach's Alpha = 0.72).

### **Control Variables**

Several control variables were used in the analyses. The total number of employees, logged to correct for skewness, was included as a measure of size. Performance measures included book value per share, initial stock price, and logged offering size at IPO. Following Welbourne and Andrews (1996), we used dummy variables to account for the industries

categorized by the nine item North American Industry Classification System. Welbourne and Andrews (1996) found that union status predicts post-IPO stock performance, so we include it here as a control. The Securities and Exchange Commission requires prospectuses to include disclose details on the risks facing the company and to potential investors. The number of paragraphs in this discussion predicts firm performance (Beatty and Zajac, 1994; Rasheed and Datta, 1997) and is added as a control. In addition, we used dummy variables to control for the presence of the following risk factors: a new product, few or limited products, limited number of years in operation, inexperienced management, technical risk, seasonality, customer dependence, supplier dependence, inexperienced underwriters, competition, legal proceedings against company, liability, and government regulation. In the analysis of 10-year stock price growth, we also added a control for survival status ten years post IPO.

## **RESULTS**

### **Descriptive Statistics**

At the time of IPO, the average age of the 293 firms in the sample was 6.81 years (SD=9.34), each employed an average of 1,500 people (SD=9,824), and averaged 289.38 million US dollars (SD=2,103.31 million) in sales. The industries represented in the overall sample include mining ( $n=19$ ), agriculture ( $n=1$ ), public administration ( $n=2$ ), construction ( $n=5$ ), manufacturing ( $n=263$ ), transportation, communication, electric, gas, and sanitation ( $n=62$ ),

wholesale trade ( $n=45$ ), retail trade ( $n=54$ ), finance, insurance, and real estate ( $n=62$ ), and service ( $n=289$ ).

Table 2 shows the means and standard deviations of variables in the study, while Table 3 shows the correlations between them. Initial stock offering price and survival (judged by our research into mergers method) were significantly positively correlated with the number of employees at the firm at IPO, book value per share at IPO, having unionized employees, most recent stock price through 2006, and 1996 net sales, while both were negatively correlated with the number of risk factors described in the prospectus. Offering price was also significantly and positively correlated with survival and the size of the offering shares.

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Insert Tables 2 and 3 about here

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## Factor Analysis

A principle components factor analysis using varimax rotation provides a four factor solution for trends underlying the survey responses. We have labeled these groups, “HR System” ( $\alpha=0.79$ ,  $E=5.47$ ), “Employee Energy” ( $\alpha=0.85$ ,  $E=1.50$ ), “Rewards” ( $\alpha=0.78$ ,  $E=1.29$ ), and “Innovation” ( $\alpha=0.63$ ,  $E=1.18$ ). Table 4 contains details on the variables that comprise each factor, along with loadings. Together, the factors explain 67% of the variance in the sample and were incorporated into the model as independent variables.

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Insert Table 4 about here

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## T-Tests of Items and Factors

Table 5 shows the means and standard deviations for each survey item used in the factor analysis. The table is sorted from high to low for each item, running from 4.34 to 3.3. Also included are means and significance of the overall factor scores, all individual items and factors, and alive and dead firms. The only items with significantly different means are energy and sense of ownership, while the only factor showing a significant difference is energy. The survival category used for the t-tests was surviving via the research method (investigating each firm) and also coding if the firm had its stock price at end of year 2006 at least equal to its going out stock price.

Insert Table 5 about here

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### **Logistic Regression**

Table 6 shows results of a logistic regression model using survival as the dependent variable, coded as (1) “alive” or (0) “dead.” As mentioned earlier, we calculated survival in different ways and use two of those here. The more conservative approach counts survivors as those companies that maintained their original form from 1996 to 2006 and also came out of that decade with a stock price at or above their initial offering price. Survivors in this case did not merge with other firms. The other method of coding survivors was based on our research into specific mergers and acquisitions; by this method, companies who were acquired could count as survivors if they maintained their identities under new ownership. Using either dependent variable, the logistic regressions support the hypothesis that resources that are less formal, and less easily copied will be paid attention to by the more successful firms.

The model was significant overall ( $\chi^2=29.04$ ,  $df=18$ ,  $p=0.048$ ,  $n=210$ ) and five independent variables predicted 1996 – 2006 firm survival using the conservative approach, *i.e.* stock prices greater than or equal their offering prices; total sales in 1996, and the energy and rewards factors described above. The overall model remains significant using the less conservative, but probably more representative interpretation of survival using research into mergers ( $\chi^2=32.79$ ,  $df=18$ ,  $p=0.018$ ,  $n=210$ ). By this method, offering price at IPO, and the

rewards and innovation factor variables produce significant results  $p \leq 0.10$ . All significant predictor variables were signed positively with the exception of the rewards factor, which was signed negatively in both models.

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Insert Table 6 about here

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### **Linear Regression**

Results of the linear regression shown in Table 7 indicate that the energy factor and firm survival providing significant positive support, and the rewards factor contributing significantly negatively. The model is significant overall and explains about two thirds of the variation in the company's last stock price ( $R^2=0.67$ ,  $F=19.95$ ,  $p<0.001$ ).

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Insert Table 7 about here

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## **DISCUSSION**

This study examines 1) what leaders do to capitalize on and create competitive advantage with human capital resources, and 2) which of these factors are important for long-term performance in the largest sample of IPOs to date. We started with a broad number of items that might be considered to affect human capital because, although formal human resource practices

are clearly important to any firm, research with smaller and entrepreneurial growth firms shows that that they think about people management in a way that goes beyond formal HR. In fact, several of the senior executives we interviewed were intensely resistant to formal HR, considering it a form of bureaucracy that could stifle the culture they worked to build. We also suggested that the IPO is an important and opportunistic time to study how human capital resources can be built because the IPO is a significant imprinting event, when leader attention has important and long-term impacts.

The results of the analysis of 10-year survival and performance shows that innovation alone predicts long-term survival, while employee energy is critical for not just surviving but for thriving, which we define as defined as retaining at least the stock price the firm obtained at its IPO. On the other hand, rewards has a negative effect on long-term performance while the formal HR system has a negative effect on the firm.

To a large extent, our measurement of the factors affecting human capital was exploratory as we were merging together formal HR practices with informal ways of working suggested by the senior executives in our study. Thus, the measurement and items did not come exclusively from theory or prior research, which lead to some vagueness in our hypotheses in that we suggested less imitable items would positively affect long-term survival. With this limitation in mind, we suggest there is reasonable support for hypotheses 1 and 2. First, the factor scores on Table 2 arrange just as the hypothesis predicts, i.e. items that are less inimitable rank highest; number one was innovation, second was energy, third was the HR system and last



was rewards. Because they are more easily copied, HR practices and rewards systems should provide less competitive advantage than do innovation and employee energy. Our second hypothesis, that a focus on inimitable resources positively influence long-term performance, was also supported. Innovation and employee energy both affected performance positively, while rewards had a negative impact and the HR system had no discernible effect.

It may seem surprising that rewards have a negative effect on firm survival, but consider the role of formal rewards in a newly public company. In many cases, formal bonus plans and rewards are tied to quarterly financial outcomes; however, quarterly performance is a short-term variable that takes on greater meaning after a firm goes public since it greatly influences stock price. The shift from long-term survival to short-term financial goals can be problematic for newly public companies. Also, rewards are easily copied; thus, a firm focusing on rewards more than other factors is not building the type of connection to the company needed to retain a key employee.

The lack of an effect for human resource systems also is not surprising. This analysis is not about the importance of a single factor, but rather, what practices or ways of managing people come together to create competitive advantage. HR practices are easily copied, and the field is dominated by fads. HR departments benchmark and copy what other firms are doing. Our findings would suggest that, although HR systems may be important, they alone do not provide long-term competitive advantage to the firm because they are so easily imitated.

## **Implications for Research**

This study explored a number of new domains, and it perhaps raises more questions than answers. First, we find that the less formal approaches to people management were the ones that leaders attributed importance to up to the point of the IPO. This suggests that research in larger firms might also benefit from expanding upon by expanding the way in which the factors affecting human capital resources are studied; in other words, going beyond formal HR practices may provide opportunities for research in larger firms, particularly when they are going through potential imprinting events (e.g. acquisitions, new leaders, etc.). Second, while items like innovation and energy contribute to long-term performance, we do not have the details needed to understand the ways leaders are creating competitive advantage through these assets. How is employee energy optimized? Is it an individual level or group level variable that is critical for long-term success? In what ways does the firm stimulate innovation? How does placing importance on innovation and energy create changes in behavior that drive long-term performance?

Third, we employed the attention-based view of the firm to help theorize how leaders affect human capital resources at a specific imprinting time, the IPO. We think that there is more opportunity to expand the implications of the ABV within the study of people at work. In addition, the impact of human capital resource and human resource practices during imprinting, high change events, such as the IPO, deserve additional attention.

## **Implications for Practice**

This paper contributes to a large body of work demonstrating that the way employees are managed can create firm-specific value and competitive advantage (see Jackson, et. al., 2014 for a review of the literature). Thus, helping leaders understand the benefit of their unique approach to employees and the importance to long-term performance is critical. An IPO brings a whirlwind of activity to an organization; lawyers, accounts and financial consultants surround the company in the process. However, with all this change, very little is done to secure a strategy for employees or HRM. In fact, the people side of an IPO is often an afterthought, even though the IPO means drastic change in the way communications are done, the presence of the firm in the public eye, the way employees are rewarded and more. If new leaders are put in place prior to the IPO, there is even more change. Perhaps this research, in addition to other work on HR in IPOs (Welbourne and Andrews, 1996; Welbourne & Cyr, 1997) can impact the process of going public by securing more attention to the HRM system and human capital resources in general.

In addition, understanding the importance of things like employee energy and innovation as well as the potential negative consequences of relying on rewards at the IPO can be useful insights for HR managers and leaders overall. How does a firm sustain the excitement and energy surrounding an IPO after the event, particularly when the way the firms is managed changes from having a long-term orientation to a fixation with quarterly results? Once the company is public, more details about their product, service and how the firm does business are

all in the open. How does that affect the ability to innovate? These questions and others are important for practice, and we suggest that these opportunities for learning can lead to collaborative research that benefits both academics and practice.

### **Limitations**

A number of limitations must be recognized in this research. First, our measure of the importance of the resource factors was obtained in 1997 although the performance measures ranged came from 1996 to 2006. The measure asked respondents to indicate how important each of the individual resources had been to their firm's performance so far. Thus, in essence it is a retrospective measure of how important they might have been to performance during 1994, 1995, and part of 1996. This measure, however, is also being used to predict the stock price and survival far into the future. However, we believe that these measures are relatively stable, and in fact, reflect where top managers believe their firms competitive advantages lie, both in the past and the future.

Also, the study was done with a cohort of firms that went public in 1996. Although this sample is fairly representative in terms of industries, firm size and other factors, additional work with other IPO cohorts, other types of firms growing and larger firms in general is needed to determine when and where the effects found in this study transfer to other organizations.

### **CONCLUSION**

The results of this study point to the importance of a firm's entire employee population as a potential source of sustainable competitive advantage (Barney & Wright, 1997; Pfeffer, 1994;

Wright, McMahan, & McWilliams 1994). However, managers and leaders are responsible for creating practices, beliefs and routines that strengthen the human capital resource, and this is particularly important at times of high change and imprinting, such as the IPO. The 10-year effect on performance demonstrates just how importance those decisions at imprinting times can be, and this research also shows that thinking beyond formal HR practices and expanding our domain of study to include information that leaders share with us as valuable can expand our work.

Powell and Dent-Micallef concluded “...competitive advantages do not arise from replicable resources, no matter how pervasive or impressive or economically valuable they may be, but from complex causally ambiguous, intangible resources” (1997: p. 395). While not the only path to attaining sustainable competitive advantage, this reasoning points toward the potential value of seeking competitive advantage through people (Pfeffer, 1994).

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**TABLE 1**  
**ORIGINAL HUMAN CAPITAL RELATED SURVEY QUESTIONS**

Rate the importance of each of the following to your firm's overall performance to date. All responses submitted on a 1-5 Likert scale ranked from 1=not at all important to 5=very important):

1. The way employees are rewarded
2. The family atmosphere
3. Our ability to hire and retain key employees.
4. The company's approach toward employees
5. The sense of ownership employees have in the company
6. The overall culture of the company
7. The training our employees receive
8. The energy level of everyone who works here
9. The way employees go "beyond the job" to get things done
10. The sense of urgency everyone feels
11. The employees
12. The top management team
13. The company's ability to be innovative.
14. Our technical expertise
15. The long hours everyone works
16. Our ability to be flexible and change quickly
17. Expertise of our employees
18. Our ability to select the best employees
19. Leadership
20. Commitment of our employees
21. The way employees work together
22. Our willingness to take risks
23. The way employees work as a team
24. The ability of coworkers to help each other
25. The way management shows we value employees
26. Stock ownership plans for all employees
27. The way we reward top performers
28. Our hiring practices
29. The founder of the company
30. The values of this company
31. The compensation program for all employees
32. The executive compensation package

**TABLE 2**  
**MEANS AND STANDARD DEVIATIONS**

<b>Variable Name</b>	<b>Mean</b>	<b>SD</b>
Age of company (Years since incorporated)	6.81	9.34
Number of employees	1,500	9,824
Offering price	11.68	5.33
Book value per share at IPO	3.09	2.65
Risk factors (Number of paragraphs in the risk section of prospectus)	20.11	5.41
Number of shares offered at IPO	5,895,745	29,690,000
Union status (0/1)	0.15	0.36
1996 net sales in millions of dollars US	289.38	2103.31
HR system	3.94	0.66
Energy	4.10	0.69
Rewards	3.73	0.69
Innovation	4.11	0.80
<b>Industry demographic variables<sup>a</sup>:</b>		
Finance, insurance, real estate	0.08	0.27
Manufacturing	0.33	0.47
Retail trade	0.07	0.25
Transportation	0.08	0.27
Wholesale trade	0.06	0.23
Services	0.36	0.48
<b>Survival variables:</b>		
Survived, stock price at least at IPO price	0.23	0.42
Survived, mergers coded as deaths	0.73	0.44
Survived, research done on each case	0.61	0.49
Survived, mergers coded as survivors	0.34	0.47

*<sup>a</sup>Remaining industry categories did not have enough cases for use in analysis; these include mining, agriculture, and public administration.*

**TABLE 3**  
**CORRELATIONS FOR VARIABLES USED IN THE ANALYSIS**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age of company (since incorporation)	1.00																
2. Risk factors	-0.16+	1.00															
3. Total Employees (ln)	0.20***	-0.51***	1.00														
4. Size of offering in shares (ln)	0.01***	-0.26***	0.46***	1.00													
5. Book value per share post IPO (ln)	0.06	-0.23***	0.18***	0.20***	1.00												
6. Price at IPO (ln)	0.10*	-0.38***	0.53***	0.48***	0.47***	1.00											
7. Union status (0/1)	0.09*	-0.04	0.24***	0.09*	0.05	0.09*	1.00										
8. 1996 sales (ln)	0.18***	-0.47***	0.80***	0.48***	0.20***	0.51***	0.16***	1.00									
9. Factor 1: Energy	0.03	-0.05	0.04	0.07	-0.08	0.07	-0.06	0.03	1.00								
10. Factor 2: HR System	0.02	-0.05	0.03	-0.03	0.08	0.07	-0.03	-0.00	0.58***	1.00							
11. Factor 3: Innovation	-0.01	0.08	-0.12*	0.03	-0.11+	0.00	-0.05	-0.11+	0.22***	0.24***	1.00						
12. Factor 4: Rewards	0.01	-0.05	0.13*	0.02	0.04	0.08	-0.04	0.11+	0.40***	0.48***	0.23***	1.00					
13. Survived and stock price up (0/1)	0.06	-0.09**	0.21***	0.11**	0.05	0.20***	0.07+	0.21***	0.10+	0.06	0.04	0.04	1.00				
14. Survived (mergers coded as dead)	0.07+	0.01	0.04	0.04	0.04	0.06+	0.02	0.07+	-0.05	0.02	0.11+	0.04	0.31***	1.00			
15. Survived (death via stories)	0.07+	-0.07*	0.16***	0.06	0.09*	0.23***	0.05	0.17***	0.03	0.09	0.09	0.02	0.68***	0.45***	1.00		
16. Survived (mergers coded as alive)	0.09*	-0.16***	0.21***	0.13***	0.15***	0.32***	0.06+	0.23***	0.05	0.05	0.09	0.11+	0.39***	0.43***	0.56***	1.00	
17. Last stock price up to 1996 (ln)	0.10*	-0.25***	0.31***	0.22***	0.19***	0.42***	0.06+	0.34***	0.10	0.05	0.02	0.07	0.51***	0.33***	0.50***	0.78***	1.00

\*\*\*p ≤ 0.001; \*\*p ≤ 0.01; \*p ≤ 0.05; + p ≤ 0.10

**TABLE 4**  
**FACTOR LOADINGS**

	1	2	3	4
1. The company's approach toward employees	0.81			
2. The family atmosphere	0.76			
3. The overall culture of the company	0.71			
4. Our ability to hire and retain key employees	0.67			
5. The sense of ownership employees have in the company	0.63			
6. Our ability to select the best employees	0.52			
7. The way employees go "above and beyond the job" to get things done		0.85		
8. The energy level of everyone who works here		0.81		
9. The sense of urgency everyone feels		0.78		
10. The executive compensation package			0.83	
11. The compensation program for all employees			0.79	
12. The way we reward top performers			0.75	
13. Our technical expertise				0.84
14. The company's ability to be innovative.				0.84
Alpha	0.79	0.85	0.78	0.63

**TABLE 5**  
**ANOVA OF SURVIVORS VS. NON SURVIVORS FOR HUMAN CAPITAL RELATED RESOURCES**

<b>ITEM</b> (Sorted high to low based on overall mean)	<b>Overall Mean (n=288)</b>	<b>SD</b>	<b>Mean for Alive Firms<sup>a</sup> (n=70)</b>	<b>Mean for Dead Firms<sup>a</sup> (n=218)</b>
Our ability to hire and retain key employees.	4.34	0.74	4.40	4.32
The company's ability to be innovative.	4.22	0.87	4.24	4.22
The way employees go "beyond the job" to get things done	4.20	0.79	4.30	4.16
The energy level of everyone who works here	4.12	0.75	4.25	4.07*
Our ability to select the best employees	4.10	0.78	4.17	4.07
The overall culture of the company	4.04	0.82	4.10	4.02
Our technical expertise	4.00	1.01	4.10	3.97
The company's approach toward employees	3.99	0.87	4.13	3.94
The sense of urgency everyone feels	3.97	0.80	4.10	3.93*
The sense of ownership employees have in the company	3.93	0.90	4.10	3.88
The way we reward top performers	3.76	0.90	3.83	3.74
The compensation program for all employees	3.75	0.74	3.80	3.74
The executive compensation package	3.67	0.87	3.69	3.66
The family atmosphere	3.30	1.09	3.33	3.29
<b>FACTOR SCORES</b>				
Energy	4.10	0.69	4.22	4.06*
HR system	3.94	0.66	4.01	3.92
Innovation	4.11	0.80	4.17	4.09
Rewards	3.73	0.69	3.78	3.72

<sup>a</sup>Dependent variable: Dead, stock price at least at IPO  
price

\* $p \leq 0.10$



**TABLE 6**  
**BINARY LOGISTICS REGRESSION ANALYSES FOR SURVIVAL 1996 – 2006**

<u>Item</u>	<u>Survived, stock price equal or greater than IPO price</u>		<u>Survived, coding via research on mergers<sup>a</sup></u>	
	<u>Beta</u>	<u>SE</u>	<u>Beta</u>	<u>SE</u>
Constant	1.99	5.20	0.49	4.99
Age of company	0.002	0.02	0.02	0.02
Book value per share	0.22	0.31	0.21	0.31
Number of employees	0.39	0.15	-0.08	0.18
Risk Factors (prospectus)	-0.05	0.05	-0.02	0.04
Total size of offering 0.34	0.22	0.33	-0.37	
Offering price at IPO	0.71	0.66	1.04+	0.56
Total sales 1996	0.38+	0.21	0.14	0.16
Union (0/1)	0.49	0.57	0.81	0.53
HR System 0.32	0.02	0.35	0.33	
Energy	0.68*	0.35	0.03	0.29
Rewards	-0.56+	0.31	-0.44+	0.27
Innovation	-0.31	0.28	0.58*	0.26
<hr/>				
	$\chi^2$	29.04*		32.79*
	<i>df</i>	18		18
	<i>p</i>	0.048		0.018
	Percent correct	77%		66%

*Industry controls also added to all equations; now shown due to space limitations*

<sup>a</sup>Using other two survival dependent variables, innovation continues to be positive and significant.

\*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ ; +  $p \leq .10$

**TABLE 7**  
**REGRESSION ANALYSES FOR STOCK PRICE 2006 OR END OF LISTING**

<u>Items</u>	<u>Beta</u>	<u>SE</u>
Constant	0.42	2.85
Age of company	-0.01	0.01
Book value per share	0.22	0.31
Number of employees	0.03	
0.10		
Risk Factors (prospectus)	-0.02	0.02
Total size of offering	-0.13	0.19
Offering price at IPO	0.21	
0.29		
Total sales 1996	0.08	0.09
Union (0/1)	-0.10	
0.30		
Survival, mergers coded as alive (0/1)	3.53***	0.21
HR System	0.02	0.18
Energy	0.38**	0.16
Rewards	-0.28+	0.16

Innovation -0.03 0.14

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	$R^2$	0.67
Adjusted	$R^2$	0.63
	$F$	19.95***

*Industry controls also added to all equations; now shown due to space limitations*  
*Results same regardless of which survival variable used as a control for this analysis*  
 \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ ; +  $p \leq .10$