



Cornell University
ILR School

Cornell University ILR School
DigitalCommons@ILR

CAHRS Working Paper Series

Center for Advanced Human Resource Studies
(CAHRS)

January 1997

Which Resources Matter in Initial Public Offering Firms? A Longitudinal Comparison of Five Resources' Contributions to Firm Performance

Theresa M. Welbourne
Cornell University

Patrick M. Wright
Cornell University

Follow this and additional works at: <http://digitalcommons.ilr.cornell.edu/cahrswp>

This Article is brought to you for free and open access by the Center for Advanced Human Resource Studies (CAHRS) at DigitalCommons@ILR. It has been accepted for inclusion in CAHRS Working Paper Series by an authorized administrator of DigitalCommons@ILR. For more information, please contact hlmdigital@cornell.edu.

Which Resources Matter in Initial Public Offering Firms? A Longitudinal Comparison of Five Resources' Contributions to Firm Performance

Abstract

In order to better understand the relevant resources in the resource based view of the firm, this study examines which resources executives in initial public offering (IPO) firms think are important to their success two years after the IPO. Results indicate that managers recognized five different resources as important, with the executives considering themselves (management) to be the most important resource. The effect of all five resources (culture, human resource management [HRM] practices, management, technology, and product/marketing) on both short and long-term firm performance was studied. Results show that management and technology are considered important by the investment community, with both affecting short-term IPO firm performance. However, analyses on long-term performance suggest that the key role management plays may be due to management's ability to develop synergies with people who are key to the organization's success — both employees and customers.

Keywords

firm, study, resource, IPO, manager, executive, technology, product, market, practice, HRM, performance, employee, customer

Comments

Suggested Citation

Welbourne, T. M. & Wright, P. M. (1997). *Which resources matter in initial public offering firms? A longitudinal comparison of five resources' contributions to firm performance* (CAHRS Working Paper #97-02). Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies. <http://digitalcommons.ilr.cornell.edu/cahrswp/144>

WORKING PAPER SERIES

Which Resources Matter in Initial Public Offering Firms? A Longitudinal Comparison of Five Resources' Contributions to Firm Performance

Theresa M. Welbourne
Patrick M. Wright

Working Paper 97 - 02



Which Resources Matter in Initial Public Offering Firms?
A Longitudinal Comparison of Five Resources' Contributions to Firm
Performance

Theresa M. Welbourne

Cornell University
Center for Advanced Human Resource Studies
393 Ives Hall
Ithaca, NY 14853-3901

Patrick M. Wright

Cornell University
Center for Advanced Human Resource Studies
393 Ives Hall
Ithaca, NY 14853-3901

Working Paper 97-02

<http://www.ilr.cornell.edu/cahrs>

This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of Center research available to others interested in preliminary form to encourage discussion and suggestions.

Abstract

In order to better understand the relevant resources in the resource based view of the firm, this study examines which resources executives in initial public offering (IPO) firms think are important to their success two years after the IPO. Results indicate that managers recognized five different resources as important, with the executives considering themselves (management) to be the most important resource. The effect of all five resources (culture, human resource management [HRM] practices, management, technology, and product/marketing) on both short and long-term firm performance was studied. Results show that management and technology are considered important by the investment community, with both affecting short-term IPO firm performance. However, analyses on long-term performance suggest that the key role management plays may be due to management's ability to develop synergies with people who are key to the organization's success — both employees and customers.

Experience has taught me that it's easy to talk about values, hard to implement them, and even harder for an outsider to determine which values are heartfelt and which are window-dressing. Wall Street cannot place a value on values.

*Howard Schultz, Founder and CEO
Starbucks Coffee*

Growing competition in world markets has resulted in an increased emphasis being placed on understanding how organizations utilize their firm specific assets to compete. This interest in the internal aspects of the organization as a means of competition led to the increased popularity of the resource based view of the firm (Barney, 1991, Wernerfelt, 1984).

The resource based view of the firm argues 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 the firm's resources which possess these characteristics (Barney, 1995). In fact, Aaker (1989) identified the route to sustainable competitive advantage as consisting of (1) identifying the relevant assets and skills, (2) selecting the assets and skills which will be relevant to the future needs of the market, and (3) implementing programs which will develop, enhance, and/or protect these assets and skills.

While the process proposed by Aaker (1989) is straightforward, it is far from easy to implement, mainly because little agreement exists regarding which resources possess them. For example, the above quote illustrates the difficulty Starbucks' founder and CEO Howard Schultz had in getting financial analysts in the investment banks to understand the importance of the company's values when they were preparing for their initial public offering (IPO). He noted that they were quite interested in the financial projections and plans for national expansion, but seemingly ignored the mission statement which described the importance he placed on treating employees like partners for the success of the firm (Schultz & Yang, 1997). It also illustrates the fact that managers and investment analysts can differ in their perceptions of which resources provide competitive advantage to firms.

The purpose of this study is to explore the extent to which managers view different resources as having impacted their firm's performance and to assess the extent to which the resources actually had an impact. These issues are examined among a set of firms that engaged in initial public offerings (IPO's) during 1993. The sample allows us to explore what resources these firms' managers perceived as having impacted their performance in measures taken during 1995 and then to use these as predictors of long-term stock price performance.

The IPO sample is particularly useful for our study because it allows us to assess the firm at a point in time when it is entering a new stage of growth. Although being public has

advantages in terms of obtaining capital for continued growth, there are consequences associated with the firm's need for disclosure. This is the first time the firm's competitors can obtain detailed information on the organization's business strategy, risk factors, management structure, and financial well being. Thus, if a resource is one that can be easily copied, now is the time when the firm is most susceptible to losing its competitive advantage.

The Resource Based View 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 (1954), Schumpeter (1934) and even Ricardo (1817). This perspective focuses on the internal resources of the firm as the major determinants of competitive success (Wernerfelt, 1984, 1994). The theory begins with the notion of heterogeneity of resources, proposing that the resource profile held by any firm differs from those held by competitors. These heterogeneous resource portfolios are believed to be responsible for the variability in financial performance across firms (Peteraf, 1993). In addition, Mahoney and Pandian (1992) noted that competitive advantage can come about through either (a) possessing better resources than competitors or (b) making better use of the resources than competitors. 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).

Resources in the Resource Based View

Central to the resource based view of the firm is the definition of resources. Wernerfelt defines resources as "anything which could be thought of as a strength or weakness of a given firm...those (tangible and intangible) assets which are tied semipermanently 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 capital resources, human capital resources, and organizational capital resources. Human resources consist of the characteristics of the individuals comprising the firm such as their experience, judgement, and intelligence. Organizational capital resources include such things as the firm's structure, planning, controlling, and coordinating systems, and the informal relationships that exist among

individuals and groups in the firm as well as with individuals and groups 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 (workers' capabilities and knowledge), and capital (both tangible and intangible). Hall (1992) proposed a typology of intangible assets based on whether the resources were consider assets (things that a firm owns, i.e., intellectual property such as patents, trademarks, trade secrets or data bases) or skills (i.e. competencies, such as the know-how of employees, collective aptitudes, or culture), and whether the resources were people dependent or people independent. He noted that most (but not all) assets were independent of the people comprising the organization, but that all of the skills were dependent upon the people. Most recently, Oliver (1997) distinguished between resource-based and institutional-based determinants of sustainable advantage. Resource capital includes such things as superior distribution channels, patented competencies, and superior management-employee relations. Examples of institutional capital are an emphasis on resource innovation, interfirm knowledge sharing, and training programs. According to her, institutional capital can either accentuate or impede the firm's ability to exploit the value of resource capital.

In this study, we examine five resource factors which emerged from a survey listing 48 specific resources that have been identified as important for the survival of IPO firms. The items were pilot tested in a telephone survey conducted in an earlier study of initial public offering firms (see Welbourne & Andrews, 1996). The actual construction of these measures will be discussed in the Methods section, but it is important to note at this point what five factors emerged.

"Culture" consists of items such as the company's approach to employees, the commitment of employees, the way employees work together, and the sense of ownership employees have in the company. In other words it describes the cultural components of the firm as evidenced through the attitudes and contributions of not only individual employees but the synergies that result from employees working together. "Management" is comprised of items dealing with the leadership, skills, and commitment of managers. "HRM practices" refers to things such as the hiring, compensation, and training practices for managers and employees. The "Product/Marketing" factor is made up of things such as the unique characteristics of the product, product differentiation, marketing/sales expertise, and customer service. It seems to reflect not merely the characteristics of the product but the overall approach of the company toward its customers. Finally, the "Technology" factor refers to the firm's technology and

technical expertise. Although these five resources emerged from the data, they are consistent with prior research. These resources have all been posited as potential sources of competitive advantage as will be discussed below.

Culture

Reed and DeFillippi (1990) and Fiol (1991) argued that the cultural resources of a firm can provide a powerful source of competitive advantage. These authors noted that cultures are difficult to articulate and because they require the simultaneous manipulation of a complex set of variables, they are virtually impossible to imitate. While top managers play a role in developing and maintaining organizational cultures, these cultures only provide competitive advantage when they are operationalized through the day-to-day activities of all employees (Barney, 1986). Wright, McMahan, & McWilliams (1994) argued that sustained competitive advantage is likely to exist in the larger human capital pool, i.e., all employees. Cappelli and Singh (1992) noted that the synergies of teamwork (a component of culture) are an aspect of human resources that can provide competitive advantage. Due to its social complexity and causal ambiguity, the culture resource, as comprised of both the employees and the cultural values they hold which cause them to behave in the interests of the firm, can be a source of competitive advantage.

Management

Wright, et al. (1994) noted that most research and popular writing has focused on top managers as a source of competitive advantage. For example, Barney (1991) noted that the managerial team might constitute a source of sustained competitive advantage. A similar proposition was put forth by Castanias & Helfat (1991). Ginsberg (1994) also argued that the top management team provides a source of sustainable competitive advantage.

The top management team holds the responsibility for providing the leadership and strategy of the firm. This strategic leadership enables the firm to identify opportunities in the market and to develop strategies to exploit those opportunities. As Mintzberg (1994) noted, this requires that top management engaging in strategic thinking should act in three roles. Acting as a “strategy finder” requires assisting managers in finding the fledgling strategies (e.g., new products accidentally discovered) in their organizations or competing ones. Acting as “analysts” entails offering alternative conceptual interpretations of their world, mainly through changing the mental models decision makers use. Finally, acting as “catalysts” requires raising difficult questions and challenging conventional assumptions, “...especially helping people out of conceptual ruts (which managers with long experience in stable strategies are apt to dig themselves into).” (1994: 114). Thus, to the extent that these managers provide organizational

leadership to develop effective strategies which exploit the environmental opportunities and firm strengths, the firm should possess competitive advantage (Ginsberg, 1994).

Products/Marketing

All firms seek to develop and market products that are attractive to potential customers because of either the price or differentiated characteristics (Porter, 1991). In fact, the generic strategies offered by Porter (1980) of cost, differentiation, or focus all entail developing firm capabilities and activities that end with a product or set of products that are attractive to customers either because they cost less than alternatives, or possess some distinct characteristics valued by either the broad customer base (differentiation) or some particular customer group (focus).

More recently, Sanchez (1995) noted that new patterns of product competition are emerging which require firms to respond more quickly than ever to changing technological and market opportunities, and to introduce more products, offer broader product lines, and upgrade products more rapidly. He argued that this has resulted in an emphasis on strategic flexibility of the firm in order to meet these market demands. This flexibility is a function of not only the product offering but a complex process by which the firm determines customer needs, enhances its product, and creates a marketing / sales strategy to deliver the product and services to its customers. Although products are easily imitated, the ability to deliver to the customer and develop and maintain customer relationships can be a source of long-term competitive advantage.

HRM Practices

A number of authors have emphasized the importance of HRM practices in gaining competitive advantage. Schuler & MacMillan (1989) were among the first to argue that competitive advantage can be gained through HR practices. More recently, Lado and Wilson (1994) argued that HR practices can be a source of sustainable competitive advantage. Wright et al. (1994) argued that while HR practices themselves might not be sources of sustainable competitive advantage, they can help develop the human capital of the firm which could be one.

Recently a number of studies have appeared demonstrating that HR practices are associated with higher financial and operational performance. Huselid (1995) found that sophisticated HR practices were related to higher Return on Assets (ROA) and Tobin's Q. MacDuffie (1995) found that bundling HR practices with lean production systems resulted in higher productivity among auto assembly plants. Delery and Doty (1996) found HR practices were related to ROA among a sample of banks. Thus, both theoretical and empirical support exists for the relationship between HR practices and firm performance.

Technology

Porter (1985) argued that technology can provide competitive advantage when the advantages associated with being a first mover (such as increasing customers' switching costs) outweigh the disadvantages associated with being a first mover (such as development and learning costs). More recently Hill (1997) noted that in certain industries technology can be a source of long term competitive advantage if a firm can establish its technology as an industry standard. He cites Microsoft as an example of a firm that, through establishing Windows as the industry standard, has achieved long term competitive success.

Much of the recent research on applying technology as a source of competitive advantage has focused on information technology (IT). Porter and Millar (1985) argued that IT can provide advantage by integrating activities in the value chain. Rackoff, Wiseman, and Ulrich (1985) focused on how IT can support strategic thrusts, and Rockart and Short (1989) noted the value of IT in managing organizational interdependence. Powell & Dent-Micallef, reviewed this literature and concluded that pre-1990, the literature on technology and competitive advantage "...reflected a general optimism concerning IT's potential for creating competitive advantage." (1997: 377)

Summary

The resource based literature has identified a number of resources that can provide a source of competitive advantage, and all of the resources in our study have been offered as having such potential. However, with few exceptions noted below, the research on these resources' potential to offer competitive advantage has looked at each one in relative isolation from the others. Writers in each area cite examples and rationale for why each resource is a source of competitive advantage and the research on each individual resource may or may not demonstrate support for the propositions. The result is that we still know very little about manager's perceptions of the relative contribution each is to their firm's competitive advantage as well as the actual relative contribution of these resources. These two issues have received very little attention empirically. This research will be discussed below.

Hypotheses

Perceptions of the Contribution of Resources

In one recent study, Hall (1992) examined CEOs' perceptions of the relative importance of the contributions of 13 intangible resources to the success of the business. Among the 95 respondents from large organizations in the UK, he found that Company Reputation, Product Reputation, and Employee Know-How were ranked numbers one, two, and three, respectively

in both 1987 and 1990. Culture and Networks alternated between numbers 4 and 5, with culture receiving the higher ranking in 1990, and networks receiving the higher ranking in 1987. Similarly, the company reputation, product reputation, employee know-how and networks also were rated as having the longest replacement periods.

While this study provides some information on how managers perceive different resources' relative contributions to firm performance, the resources used do not track easily on the factors of culture, management, products/marketing, HRM practices, and technology. Thus, in order to hypothesize which of these five factors will be viewed as most important by managers, we rely on attribution theory (Heider, 1958).

Attribution theory is based on the notion that in everyday situations, people act as "naive psychologists" who are seeking to make sense of the events they observe. They collect data about human behaviors and attempt to assign meaning to those behaviors. The theory has been refined to address the types of information that people consider and the kinds of dispositional attributions they make (Kelly, 1967; Jones and Nisbett, 1972). This theoretical refinement and empirical research has resulted in a set of generalized predictions regarding the types of attributions that people make as they seek to make sense of their surroundings (Weiner, 1995).

One of the major generalized phenomena discussed in the attribution literature is the "self serving bias." This bias recognizes that individuals often attribute instances of personal success to internal causes (ability, motivation), while attributing personal failures to external causes (e.g., luck, task difficulty) (Snyder, Stephan, & Rosenfeld, 1976; 1978; Kelley & Michela, 1980). Organizational researchers have observed that managers tend to view their organizations as extensions of themselves, and thus, make similar self-serving attributions regarding organizational outcomes. The result of such self-serving attributions is that managers tend to attribute the successful performance of one's own organization to internal organizational factors such as plentiful financial reserves, cutting edge technology, and proven management. In a recent study, Wagner & Gooding (1997) found that managers presented with equivocal information about the performance of an organization described as their own exhibited this bias, and attributed successful performance to organizational strengths.

However, this self-serving bias would argue that managers in successful organizations should attribute the success to the internal resources of the firm, but may not distinguish among the resources. On the other hand, while research has demonstrated that managers exhibit the self-serving bias with regard to their organizations (i.e., internal to the organization or external to the organization), they also should also exhibit this phenomena as individuals regarding their

own personal positions. For example, of the five resources in our study, managers should clearly identify most strongly with the management resource, whereas products/marketing, technology, and HR practices could be considered to be external attributions. Given the fact that IPO's exist in a relatively risky environment and a number of IPO firms do not survive, simply having survived for 2 years would be considered to be successful performance. Thus, one would expect the managers to most heavily attribute this success to the management resource. Consequently, we offer the following hypothesis:

Hypothesis 1: Managers will perceive that the management resource is most responsible for the firm's performance.

The Actual Importance of Resources

As previously discussed, managers' perceptions of the relative importance of resources in contributing to the firm's performance may not always be accurate. These perceptions may be biased by the functional background of the manager (i.e., an engineer might suggest that technology was most important, while a marketing person might believe the product is most important), attributional biases as discussed above (Wagner & Gooding, 1997), or by any number of other factors. In addition, the managers may simply have incomplete information for making an accurate assessment. In fact, Collis (1994) argued that competitive advantages stemming from resources which are causally ambiguous require that no one, except for the firm itself tacitly, understands the causes of its capability. Thus, in order to examine which resources actually play the most important role, one would have to examine the relative predictive value of the resources in their relationship with firm performance.

For example, Hansen and Wernerfelt (1989) examined the relative predictive values of both economic and organizational variables in their relationships with firm performance among 60 publicly held, non-regulated firms. The economic variables consisted of factors such as industry profitability, relative market share, and firm size, while the organizational variables were the emphasis on Human Resources (i.e., employees' perceptions of how concerned the organization is with his welfare, work conditions, etc.) and Goal Emphasis (i.e., employees' perceptions of relative emphasis on achieving aggressive goals or objectives). These researchers found that the economic variables accounted for a significant 14.1% of the variance in performance when entered alone. The organizational variables explained a significant 35.6% of the variance in profit when entered alone. When both sets of variables were entered, they explained 45.7% of the variance. In addition, of all the variables, emphasis on Human Resources clearly most strongly predicted profitability in this sample.

Powell and Dent-Micallef (1997) examined the relationships between human, business, and technological resources and organizational performance among a sample of retail firms. These authors found that technology alone did not produce any sustainable competitive advantages, but that some firms gained advantages by using information technologies to leverage intangible assets such as human and business resources. Interestingly, these researchers found that their human resources scale dwarfed both the technology and business resource scales in predicting overall organizational performance, profitability and sales growth. In addition, Powell (1995) found a similar effect for TQM, in that the TQM programs were maximally effective when combined with human resource systems such as employee empowerment.

This is somewhat consistent with the resource based view of the firm. In the context of our study, however, we would argue that the relative predictive value of these variables should change over time. The managers' perceptions of the extent to which each of the resources contributes to their firm's performance, although assessed at one time, should be relatively stable reflections of what they view as their firm's strengths. One would have to believe that while not perfectly accurate, these responses have some basis in reality (i.e., a manager in a firm with a unique and valuable technology is more likely to think technology is their source of competitive advantage relative to a manager in a firm without such technology).

However, while the resource factors might be relatively stable, the stock prices are not. The price for the initial offer is set by analysts who have to consider a set of variables they deem to be important. The fact that the stock prices change significantly immediately upon them becoming available to the market implies that the market may value different characteristics of the firm (thus, our inclusion of the 7-day out price). In addition, for a formerly private firm, some information is not readily available at the time of the initial offer, and may only become available over time.

For example, at the time of an IPO, the market possesses significantly more information on the technology, products/marketing, and management skills than it does about the HR practices and/or employees/culture. Because the technology, products, and management variables are all covered in the prospectus, they should be related to the initial offering price. (Beatty & Zajac, 1994; Rasheed & Datta, 1994, Welbourne & Cyr, 1997). This process is likely to result in investors placing greater emphasis on the extent to which each of these resources are valuable at the time of the offering relative to their long term value. In addition, as exemplified by Howard Schultz quote at the opening of the paper, we would expect that investors would place the greatest emphasis on the technology, products/marketing, and

management and pay little attention to the HR practices or culture. This leads to the following hypothesis:

Hypothesis 2: Technology, products/marketing, and management will be positively related to the initial performance of the IPO firm, while HR practices and culture will not be significantly related.

While a number of resources in organizations are valuable, according to the resource based view of the firm, over time the key differentiating factors should be related to the rareness and inimitability of the resource (Dierickx & Cool, 1989). Of the five factors in our study, clearly technology, product/marketing, and HRM practices seem to be the most easily imitated (Clemons & Row, 1991; Pfeffer, 1994; Powell & Dent-Micallef, 1997; Wright et al., 1994). Within Hall's (1992) categorization of resources, technology and product/marketing, and HRM practices would be considered as people independent, while the others, management and culture would be considered people dependent. Thus, competitive advantages stemming from management and culture, due to both the causal ambiguity and the social complexity components of these factors (Alchian & Demsetz, 1972; Barney, 1991; Becker, 1964, Boxall, 1996; Cappelli & Singh, 1992, Wright et al., 1994), can be much more difficult to imitate. Thus, we would expect these two factors to emerge as predictors of long-term stock price growth.

Hypothesis 3: Management and culture and will have a positive effect on long-term firm performance.

In addition, we expect that management will have synergistic impacts with both HRM practices and culture in predicting organizational performance. Few would question the important role that top managers play in supporting and developing the firm's culture and its HRM practices (Barney, 1986). Consequently, the value of a firm's approaches toward employees (represented by either culture or HRM practices) can be undermined by a lack of good management. Boxall argued for the synergistic value of having both good management and positive culture stating "Not only those firms with astute leadership at the top, but those that combine this strength with deep employee involvement in strategic decision making appear to be more effective." (1996: 66).

In addition, strategic management researchers are increasingly recognizing that the value of formulating an effective strategy may be lost if the rest of the organization is unable or unwilling to effectively execute it (Hambrick & Canella, 1989). Thus, we would expect that the highest level of performance would be observed when effective strategic leadership is matched with its approach toward employees. Thus, we offer the following hypothesis:

Hypothesis 4a: Management and culture will interact to have a positive effect on firm performance.

Hypothesis 4b: Management and HRM practices will interact to have a positive effect on firm performance.

Method

The study was conducted with a cohort of firms that went public in 1993 (a total of 706 firms went public in 1993). The data for this study come from several different sources. They include the prospectuses of firms going public in 1993, surveys sent to members of the top management teams at those firms, and financial data from the time of the IPO and for the years from the IPO through year-end 1996. Financial data were obtained from The IPO Reporter, the Security Data Corporation data base, and from COMPUSTAT.

Prospectus Data Collection and Coding

Several variables used in the analysis (primarily the control variables) were obtained from the prospectus. The prospectus is the document provided to the Securities and Exchange Commission (SEC) prior to the public offering, and it is also the document circulated by the underwriter to assess demand for the firm's stock. The SEC requires that firms follow strict guidelines in the format. In fact, the firm is legally liable for any information that might mislead investors (O'Flaherty, 1984). As noted by Beatty and Zajac (1994), top management is accountable to the SEC and to stockholders regarding the contents of the prospectus. The Securities Act of 1933 sets the requirements for the prospectus, thus assuring consistency in the type of information that is included in the document. 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 used for the study. Detailed coding rules were developed based on prior research that gathered similar data (Welbourne & Andrews, 1996). A random sample of the prospectuses were cross coded, and agreement on all the variables used in this study was over 90%.

Survey Administration

Names of all officers in the firms were obtained from COMPUSTAT. Surveys were sent to these individuals, and a total of 4,700 surveys (representing the 700 firms) were mailed. Each survey had an identification code that allowed us to link the survey data with the prospectus and firm performance data. A total of 458 surveys were returned (9.7% response rate); however, those individuals represented 324 companies (46%). Of the individuals who

responded, 78 were Chief Executive Officers, 87 were Chief Financial Officers, and 226 were in other senior vice president positions (e.g. marketing, production, engineering, etc). Of the 226 in the "other" category, 14 were Chairmen of the Board and 36 were in other financial-related positions (e.g. Treasurer, Controller).

We coded the survey responses in two different ways. The first method involved coding data from the highest ranking officer's responses. When coding via the highest level executive, we selected the CEO, Chairman, or President first. Next, we used the chief financial officer (using the logic that familiarity with the IPO process was highest for that individual). After that we utilized the most senior executive based on salary ranking patterns (technical individual, marketing, and lastly someone in human resource management or administration). The second coding process involved our averaging responses from all individuals within one firm. The correlation between the measures operationalized these two different ways ranged between .92 and .97 on the variables used in our study. For purposes of our study, we used the measures obtained from the highest ranking officer of the firm.

Independent Variables: Evaluation of Importance of Resource

The items used in the survey included 48 variables identified as potentially important for success of an IPO firm. Executives were asked how important these resources were to the performance of their firm from the time of the IPO to present (1995). The response scale was a 1 to 5 Likert-type scale, with 1 = not important at all, and 5 = very important. The items were pilot tested in a telephone survey in the Welbourne and Andrews (1996) study of IPO firms, which included items relating to the company's employees, top management team, rewards system, products, IPO-related issues (timing of the IPO, underwriters, market, etc.), technology, cash flow, financing in general, the manufacturing process, and a number of other items that were identified as related to IPO firm success. An exploratory factor analysis with a varimax rotation was conducted on all of the items. The results indicate a five-factor solution, and the results of the analysis for those factors is included in Table 1. The first factor is labeled 'culture,' and it represents the firm's overall approach toward its employees (eigenvalue = 5.53; coefficient alpha = .86). The second factor was labeled 'HRM practices,' and it includes items for the hiring, compensation, and training of employees (eigenvalue = 2.18; alpha = .82). The third factor is labeled 'management,' and it signifies the leadership and the firm's overall strategy (eigenvalue = 1.35; alpha = .79). The fourth factor is labeled 'product/marketing' (eigenvalue = 1.31; alpha = .67), and the last factor is called 'technology' (eigenvalue = 1.10; alpha = .76).

TABLE 1
Results of Factor Analysis of Survey Items

	Culture	HR practices	Management	Technology	Product/Marketing
1. Overall culture of the company.	.74				
2. Company values.	.69				
3. The family atmosphere			.65		
4. The way employees work together.	.58				
5. The way employees work as a team.	.56				
6. The overall culture of the company	.66				
7. Commitment of employees.	.55				
8. The way we reward top performers.		.78			
9. Hiring practices.		.73			
10. Compensation program for all employees.		.73			
11. The way employees are rewarded.		.68			
12. Training our employees receive.		.49			
13. Leadership skills of management.			.78		
14. Management skills in the company.			.75		
15. Top management team.			.70		
16. Top management commitment to the company.			.65		
17. The company's technology				.84	
18. Technical expertise.				.78	
19. Marketing and sales expertise.					.70
20. Product differentiation.					.69
21. Unique characteristics of the product.					.64
22. Customer service.					.62
Alpha	.86	.82	.79	.76	.67

Dependent Variables

Initial IPO firm performance. In order to investigate short-term performance, we used a measure of initial stock price and 7-day stock price. While initial stock price represents the investors' initial reaction to the firm's performance and potential at the time of the IPO, the 7-day stock price represents a correction by the market and better captures initial demand for the company's stock.

Long-term stock price performance. We use a measure of change in stock price (adjusted for splits, etc.) from the time of the IPO through year-end 1996. Percentage stock price change is logged to correct for skewness. Given that the prime reason investors choose to put money into an IPO is to make money when the firm's stock price increases over time, stock price growth is a reasonable measure of performance for the IPO sample. In addition, market-based measures represent the most prevalent and relevant firm performance measures in the IPO literature (see Ibbotson and Ritter, 1995 for a review).

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. We also included a control for company age, as this may affect both short and long-term performance. Net profit (also logged) at the time of the IPO was added as a performance measure. Dichotomous variables for industry were used, and we utilized the 9 categories recommended by the Small Business Administration and used in prior IPO research (Welbourne & Andrews, 1996). In addition, we added a control for whether the firm was unionized or not, assuming that union presence has the potential to limit management's ability to act.

Although our sample of IPO firms consists of higher risk ventures, we expect that each firm will be subject to varying degrees of risk. Therefore, an additional control variable (logged) indicates the level of risk faced by each firm at the time of the IPO. Each prospectus contains a section listing all risk factors faced by the firm, which must be disclosed to meet the requirements of the Securities and Exchange Commission. Prior research on initial public offering firms found that this measure was a useful way to code risk (Beatty and Zajac, 1994; Rasheed and Datta, 1994). The presence of the following risk factors were included in this measure: 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. The summated risk measure ranged from 1 to 11, with a mean of 3.74 and a standard deviation of 1.39. Finally, to control for the firm's sensitivity to overall market movements, we included beta (obtained from COMPUSTAT for the period ending December 1996) as a measure of systematic risk.

Results

After merging the survey data with those firms for which we had complete financial performance data from the IPO to year-end 1996, the final sample size for the study was 266. At the time of its IPO, the average firm in the sample used for the analyses was 7.61 years old (standard deviation of 8.39), and 50% of the sample was younger than 6 years old. The average firm employed 790 employees, and 50% had 220 or fewer workers. The industries in the sample include mining (13 companies), construction (3 firms), manufacturing (127 organizations), transportation, communication, electric, gas, and sanitation (29 companies), wholesale trade (14 firms), retail trade (19 businesses), finance, insurance, and real estate (12 firms), and 44 companies in service organizations. In terms of geographic area, we found the following: 18 were based in a foreign country, 57 in the pacific, 26 in the northeast, 24 in the

mid-atlantic, 26 in east north central, 17 in west north central, 36 in south atlantic, 7 in east south central, 37 in west south central, and 18 in the mountain states. An analysis of respondents and non-respondents indicated no differences in industry and geographic areas.

Table 2 presents the means and standard deviations and Table 3 presents the intercorrelations among the variables in the study.

TABLE 2
MEANS AND STANDARD DEVIATIONS

<u>Variable Name</u>	<u>Mean</u>	<u>Standard Deviation</u>
Age of Company (in years)	7.61	8.39
Net profit per share (at IPO)		.18
	.62	
Number of Employees	790.00	1361.00
Risk Factors (prospectus)	3.74	1.39
Beta (1996)	.89	.84
Union presence	.21	.41
Management	4.29	.56
Product / Marketing	3.93	.80
Technology	3.85	1.01
Culture	3.80	.65
Human resource management practices	3.48	.69
Offering Price	11.57	5.10
7-day stock price (per share)	13.14	6.48
Stock price growth (IPO to 12/96)	.88	2.88

TABLE 3
Correlations for Variables Used in the Analyses

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age of Company	1.00													
2. Net profit per share	.03	1.00												
3. Number of employees	.11	.32	1.00											
4. Risk Factors (prospectus)	-.02	-.21	-.35	1.00										
5. Beta (1996)	.02	.01	-.04	.12	1.00									
6. Union presence (0/1)	-.15	.18	.40	-.18	-.01	1.0								
7. Culture	.07	.01	.07	-.14	.04	-.02	1.00							
8. HRM practices	.01	-.07	.11	-.13	.00	.02	.60	1.00						
9. Management	-.01	-.03	.06	-.11	.13	-.06	.48	.45	1.00					
10. Technology	.12	-.10	-.10	.16	.12	.03	.09	.07	.02	1.00				
11. Product / marketing	.10	-.02	.10	.13	-.02	.04	.32	.19	.18	.22	1.00			
12. Initial stock price	.09	.21	.44	-.14	.13	.19	-.08	-.01	-.11	.08	-.01	1.00		
13. 7-day stock price	.03	.21	.38	-.13	.09	.13	-.06	-.02	-.06	.05	.06	.80	1.00	
14. Stock price growth (IPO to 12/96)	.07	.23	.19	-.02	.35	.02	.06	.02	.15	.01	-.02	.17	.12	1.00

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

Correlations greater than .21 are significant at the .001 probability level; > .18 are significant at the .01 level; > .15 are significant at the .05 level, and greater than .12 are significant at the .10 level.

An analysis on the survey respondents vs. nonrespondents, which consisted of a one-way ANOVA for all of the control and dependent variables in the analysis indicated some differences between the respondent and nonrespondent organizations. Companies with executives who responded to the survey were on average from older firms (18.21 years, vs. 13.58, $F=4.97$, $p \leq .05$), and their offering price (stock price at the time of the IPO) was higher (11.52 vs. 10.33, $F=6.93$, $p \leq .05$). There were no significant differences on total number of employees (size), net profit at the time of the IPO, 1993 year-end stock price, or the number of risk factors faced by the firm. However, there were significant differences in year-end stock prices for 1994, 1995, and 1996. The respondents, in all cases, had higher stock prices. In 1994 respondents had an average stock price of \$13.27, while nonrespondents were at \$10.80 ($F=12.58$, $p \leq .001$). In 1995 the average stock price for respondents was \$14.67, while it was \$11.30 for nonrespondents ($F=17.42$, $p \leq .001$). Finally, for year-end 1996, respondents' average stock price was \$16.36, while the nonrespondents average stock price was \$13.20 ($F=8.67$, $p \leq .01$).

Tests of the Hypotheses

Hypothesis 1 stated that managers would perceive that the management resource is most important for the firm's performance. As can be seen in Table 2, the mean for management is 4.80 (the highest ranking variable), while the mean for product/market is 3.93, for technology 3.85, for culture 3.80 and for HRM it is 3.48.

In order to test for the significance of differences between the mean for management and the other four resources, we ran paired t-tests comparing management to the other four resources. The results show that management is significantly different from each of the other variables at the $p \leq .001$ level ($t = -19.47$ vs HRM, $t = -12.422$ vs culture, $t = -6.42$ vs product / marketing, and $t = -6.14$ vs technology). Thus, in support of hypothesis 1, we find that managers who completed this survey did think that management was the most important resource for their own company's performance.

Hypotheses 2 through 4 deal with the relative value of the five resource factors in predicting stock price, both at the time of the IPO and over time. These hypotheses were tested with a series of hierarchical regressions, regressing the dependent variables (initial offer price, 7-day price, and change in stock price from IPO to year-end 1996) on the control variables and the five resource factors in one step. These results appear in Tables 4 through 6. Each table shows the results for different dependent variables; therefore, each analysis will be discussed separately. Although the interaction effects were only predicted to be important for long-term performance, we ran the analysis with the interaction effects for all equations for purposes of further exploratory analysis.

Initial offering price. Table 4 includes the results, both with and without the interaction terms, for initial offering price. The R^2 for the equation without the interaction terms is .34 ($F = 4.28$, $p \leq .001$), and both management and technology have positive effects on stock price. This result is consistent with hypothesis 2, although this hypothesis also suggested that product/marketing would have a positive impact on initial IPO performance, and the results do not provide support for that part of the hypothesis. The analysis for the interaction terms show that none of the interactions affected initial stock price, and technology continued to have a positive and significant effect on the initial stock price.

TABLE 4
RESULTS OF REGRESSION ANALYSES FOR OFFERING PRICE

Factors	Offering Price (with interaction terms)		(without interaction terms)	
	beta	s.e.	beta	s.e.
Constant	5.53	9.35	4.51	3.12
Age of company	.07	.34	.06	.34
Net profit per share	.39	.48	.40	.48
Number of employees	1.29***	.20	1.27***	.20
Risk Factors (prospectus)	.009	.21	.006	.22
Beta (1996)	.84**	.35	.85**	.34
Union presence	-.14	.78	-.16	.78
Culture	-3.21	2.60	-.85	.56
HRM practices	2.64	2.41	.31	.51
Management	-1.36	2.19	1.00+	.59
Technology	.70*	.31	.66*	.31
Product / marketing	.32	.41	.35	.41
Culture* Management	.57	.61		
HRM Practices * Management	-.58	.55		
R ²	.35		.34	
F	6.20***		4.28***	

*** p ≤ .001; ** p ≤ .01; * p ≤ .05; + p ≤ .10 Note: Industry codes included in analysis.

Seven-day stock price. The analysis, in Table 5, without interaction terms resulted in an R² of .25 (F=4.31, p ≤ .001), and the results indicate that only technology is significantly and positively related to seven-day stock price. This is consistent with hypothesis 2. None of the interaction terms are significant.

TABLE 5

RESULTS OF REGRESSION ANALYSES FOR 7-DAY STOCK PRICE

<u>Factors</u>	<u>7-day stock price (with interaction terms)</u>		<u>(without interaction terms)</u>	
	<u>beta</u>	<u>s.e.</u>	<u>beta</u>	<u>s.e.</u>
Constant	4.15	12.15	5.77	4.19
Age of company	-.03	.04	.05	.44
Net profit per share	.70	.62	.72	.62
Number of employees	1.23***	.26	1.22	.26
Risk Factors (prospectus)	.005	.29	.001	.29
Beta (1996)	.73	.45	.75+	.45
Union presence	-.54	1.01	-.56	1.01
Culture	-3.65	3.38	-.96	.72
HRM practices	3.34	3.14	-.05	.67
Management	-.50	2.85	-.64	.76
Technology	.78*	.40	.72+	.40
Product / marketing	.56	.53	.60	.53
Culture * Management	.65	.80		
HRM Practices * Management	-.79	.72		
<hr/>				
R ²	.22	.22		
F	3.34***	3.63***		

*** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; + $p \leq .10$ Note: Industry codes included in analysis.

TABLE 6

RESULTS OF REGRESSION ANALYSES FOR CHANGE IN STOCK PRICE (IPO TO 12/96)

<u>Factors</u>	<u>Stock price change (with interaction terms)</u>		<u>(without interaction terms)</u>	
	<u>beta</u>	<u>s.e.</u>	<u>beta</u>	<u>s.e.</u>
Constant	.06	2.88	-1.68*	.86
Age of company	.01	.08	-.01	.08
Net profit per share	.33**	.11	.33**	.12
Number of employees	.12**	.05	.12*	.05
Risk Factors (prospectus)	.05	.05	.04	.05
Beta (1996)	.43***	.08	.43***	.09
Union presence	-.14	.78	-.21	.19
Culture	-1.22*	.62	.08	.13
HRM practices	.86	.58	-.07	.13
Management	-.12	.52	.34**	.14
Technology	-.01	.08	-.03	.08
Product / marketing	-.07	.11	-.06	.11
Culture *				
Management	.31*	.15		
HRM Practices *				
Management	-.22+	.13		
<hr/>				
R ²	.27		.25	
F	4.08***		4.31***	

*** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; + $p \leq .10$ Note: Industry codes included in analysis.

Stock price growth (IPO to year-end 1996). The analysis, in Table 6, without interaction terms shows that management is positively and significantly related to long-term performance; this is consistent with hypothesis 3. However, hypothesis 3 also stated that culture and HRM practices would be significant in predicting long-term performance. The R^2 for that equation is .25 ($F=4.31$, $p \leq .001$).

The analysis with interaction terms for (1) management and culture and (2) management and HRM practices, which tests hypotheses 4a and 4b, resulted in an R^2 of .27 ($F=4.08$, $p \leq .001$). Results show that both interaction terms are significant (with the culture interaction being significant at the $p \leq .05$ level and the HRM interaction significant at the $p \leq .10$ level). Figure 2 shows the results of the interaction effect graphically. The results were derived by using methods suggested by Cohen & Cohen (1983). The data for the plots were calculated by using terms from the regression equation to derive values for firms in four quadrants, crossing low and high values on both terms included in the interaction (management and culture for figure 1). The results depict the nature of the relationship of the variables in the interaction term and can be used to further describe the interaction effects.

The relationships depicted in Figure 1 support hypothesis 4a in that firms high on both management and culture have the highest stock price growth from the time of the IPO through year-end 1996. Culture appears to increase performance for firms that have skilled management; however, it decreases performance for those firms that are low in their management skills.

FIGURE 1
INTERACTION BETWEEN CULTURE AND MANAGEMENT
WHEN PREDICTING STOCK PRICE GROWTH (IPO TO YEAR END 1996)

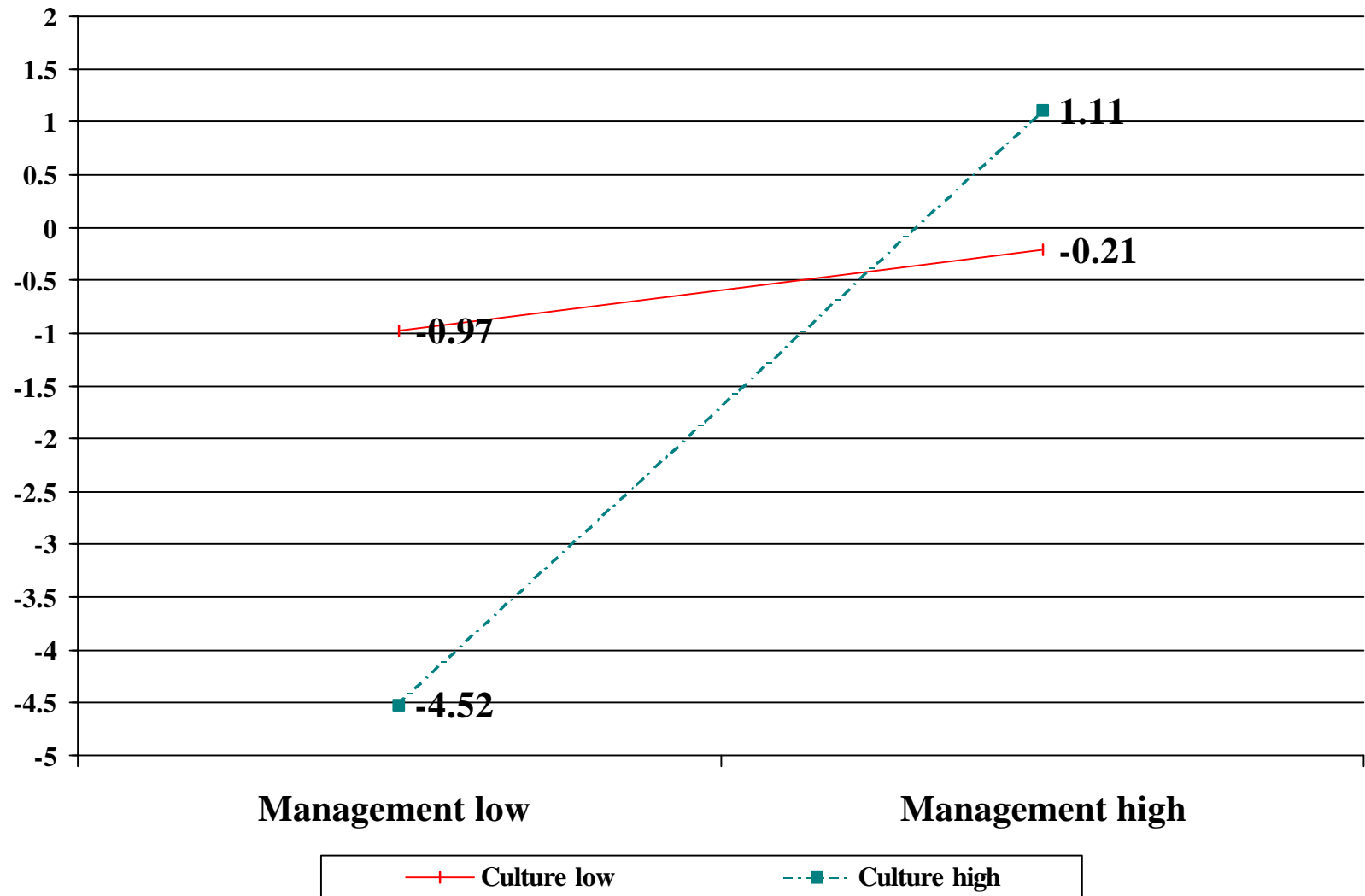
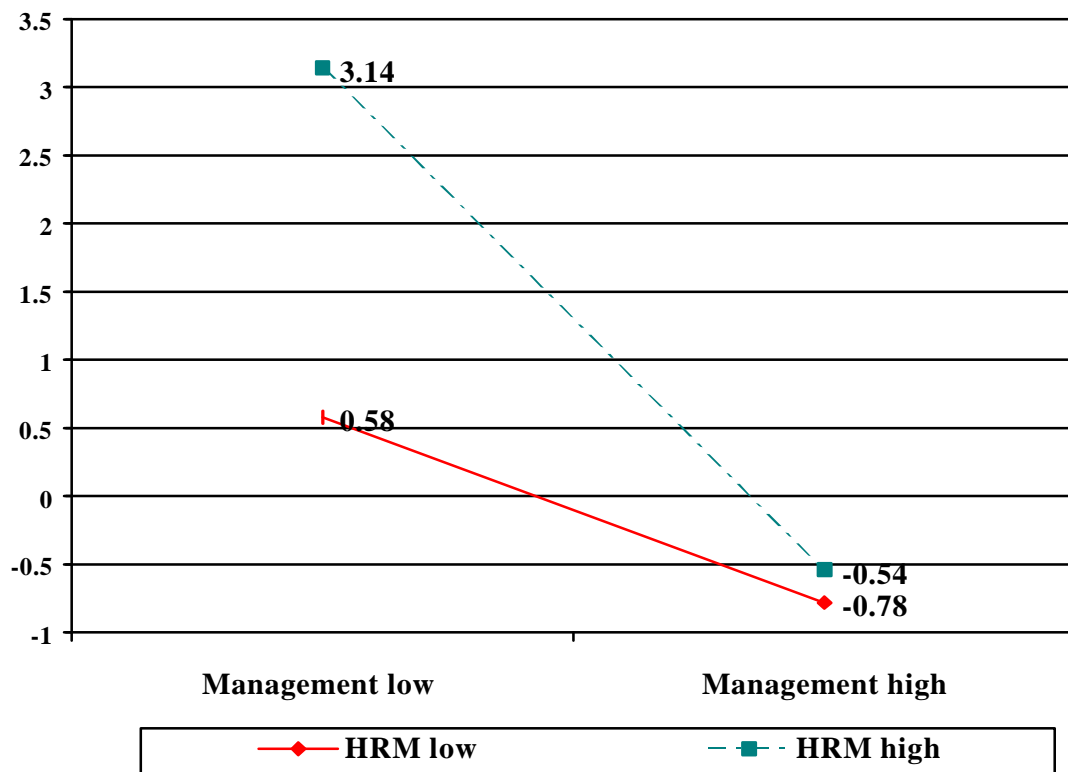


Figure 2 represents the plot for the interaction between HRM practices and management. The figure shows that HRM practices appear to be positively related to performance for firms low on the management factor. In other words, the most significant gain from HRM practices appears to be for those firms that do not value management (from .58 to 3.14). Those companies high on management do appear to gain from valuing HRM practices, but the amount of gain is much smaller (from -.78 to -.54). Thus, only partial support for Hypothesis 4b was observed.

FIGURE 2
INTERACTION BETWEEN HRM PRACTICES AND MANAGEMENT
WHEN PREDICTING STOCK PRICE GROWTH (IPO TO YEAR-END 1996)



Exploratory Analysis

In order to further understand the nature of the relationship between management and the other resources, we ran an analysis that included four interaction terms, crossing management with each of the other four resources. The equations for predicting initial stock price and 7-day stock price continued to have no significant interaction terms; however, there were significant results when predicting change in stock price (from IPO to year-end 1996). The results are included in Table 7. In this equation, management and culture continues to have a significant interaction effect, but the other significant interaction effect is product/market and management. The interaction effect for HRM practices and management is no longer significant when the other terms were entered into the regression equation. The two significant interactions were plotted and can be found in Figure 3.

FIGURE 3
INTERACTION BETWEEN CULTURE AND MANAGEMENT and CULTURE AND PRODUCT / MARKET WHEN PREDICTING STOCK PRICE GROWTH (IPO TO YEAR END 1996)

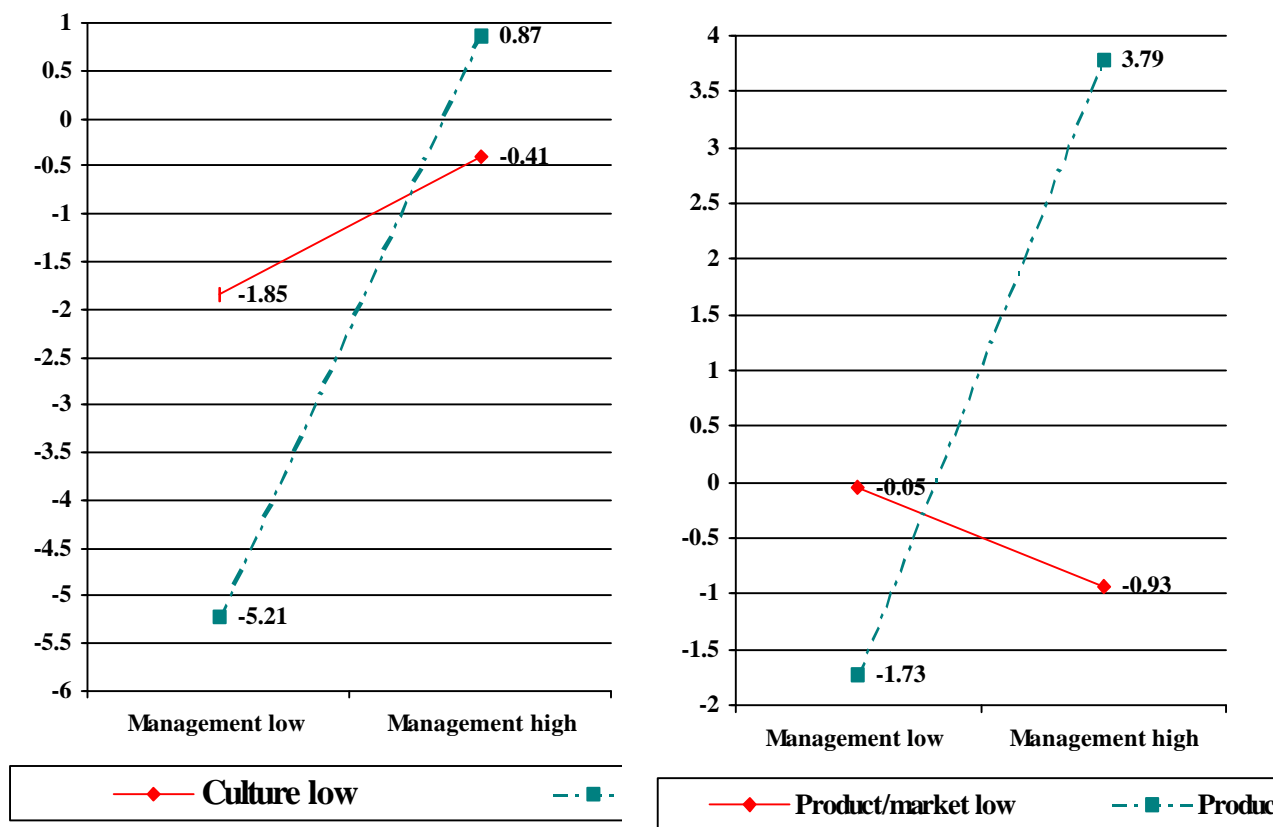


TABLE 7

**RESULTS OF REGRESSION ANALYZES FOR CHANGE IN STOCK PRICE (IPO TO 12/96)
EXPLORATORY ANALYSIS WITH ADDITIONAL INTERACTION TERMS**

<u>Factors</u>	<u>Stock price change</u>	
	<u>beta</u>	<u>s.e.</u>
Constant	-1.08	3.67
Age of company	.01	.08
Net profit per share	.36**	.12
Number of employees	.13**	.05
Risk Factors (prospectus)	.02	.06
Beta (1996)	.48***	.09
Union presence	-.24	.19
Culture	-1.23	.71
HRM practices	.52	.70
Management	.07	.85
Technology	-.74	.62
Product / marketing	1.25+	.73
Culture *		
Management	.29+	.17
HRM Practices *		
Management	-.13	.16
Technology *		
Management	.16	.14
Product / market *		
Management	-.29+	.16
<hr/>		
R ²	.26	
F	3.56***	

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

Note: Industry codes included in analysis.

The results show that the nature of the relationship between management and culture is the same as that obtained in the earlier regression equation. The highest firm performance is attained when both management and culture are viewed as important. The same type of result exists with the management and product/market interaction, where the highest performance is realized when both are viewed as important.

Discussion

Research within the resource based framework has had difficulty in examining both how important managers believe different resources to be as well as their actual importance. In this sample of firms that went public in 1993, it appears that on average, managers are only partly accurate in understanding the true sources of competitive advantage.

Consistent with the self serving bias observed in attribution theory research, when asked about the resources believed to be responsible for the performance of the firm, top managers seem to believe that competitive advantage lies primarily in themselves. Of the five resource factors investigated, executives responding to the survey clearly rated management as the most important factor in determining the firm's performance. This finding is not overly surprising given the extent to which the self serving bias has been observed among managers in strategic management research (Clapham & Schwenk, 1991; Salancik & Meindl, 1984; Staw, McKeachie, & Puffer, 1983; Wagner & Gooding, 1997).

It appears that the managers' perceptions are only somewhat consistent with those of investors. When predicting initial stock price, management was significant, although only at the $p \leq .10$ level of significance. Management was not, however, significant in predicting 7-day stock price. Only technology was significant for both initial stock price and 7-day stock price. Investors may believe that technology is a resource that adds firm value, but technology was not significant in any of the analyses of long-term stock price growth. In fact, of all the resources studied, technology should be the one that is most easily imitated, thus offering the least long-term competitive advantage. Perhaps, due to the nature of those individuals engaged in trading of IPO firm stock (investors may only care about short-term gains), the importance placed on technology early in the firm's life cycle is reasonable. However, if investors are making long-term investment decisions, it seems that reliance on technology as an indicator of long-term performance may be ill advised.

In terms of long-term stock price growth, hypothesis 3 was supported only for the management resource (when testing only direct effects of the resources). However, tests of hypotheses 4a and 4b led to the finding that the effect gained from the management resource needs to be understood in the context of other resources that involve the firm's relationship with

its other employees. The results of tests for the hypothesis 4a show that the highest performing firms were those that were high on both management and culture. The lowest performing firms were those that were high on culture but low on management. Given that culture is the resource that results in synergistic efforts of both managers and employees (or managers working together), this finding is consistent with the resource-based view of the firm. If a firm views its culture as important, but it does not possess high quality management (the group responsible, in many ways, for creating and sustaining the culture), synergistic behavior will likely be reduced. And, likewise, if the firm possesses good management but not a positive culture, the same synergies will not ensue. Our results show that it is the combination of the highly skilled and committed management and an organization-wide culture of teamwork and cooperation that lead to the highest performance.

The results for HRM practices (hypothesis 4b) are different in that HRM practices seem to have the greatest effect when the firm places lower on the management dimension. There is no synergistic effect between management and HRM practices; instead, one may speculate that HRM practices appear to “save” the corporation when management may not be doing its job adequately. Interestingly, the highest performing firms appear to be those that do not possess highly skilled management but that are high on HRM practices. This may be due to the fact that many IPO firms have managers who lack adequate training (e.g. fast growth results in promotions based on technical expertise, not management ability). However, given the results of the exploratory analysis, this finding may be less important than the one obtained for culture and management.

The exploratory analysis was conducted due to the fact that the resources studied emerged from the data, and given the lack of prior work considering multiple resources simultaneously and their effects on performance (particularly in IPO firms), we thought it prudent to explore additional relationships. In the exploratory analysis, the relationship between HRM practices and management is no longer significant. This is noteworthy given the burgeoning research on strategic HRM and the relationship between HRM practices and firm performance. One could speculate that HRM practices have an effect on the culture for employees (e.g. the correlations was .60), but that it is culture - not the practices - that has the dominant effect in predicting performance. This is consistent with Huselid and Becker (1997) who found that the relationship between HR practices and firm performance diminished when the quality of other management was taken into account. Additional research on the relationship between these two variables and their relationship to overall firm performance seems warranted.

The effect for culture and management remained significant in the more extensive analysis (Table 7). However, a new effect, the interaction between management and product/market became significant. Although we originally speculated that product/market was a resource that is more easily imitated (people independent), perhaps the variable we measure is actually describing more about the relationship between the firm and its customers (thus being people dependent) than it is capturing mere product-related issues. Although additional research is needed on the measures used in this study, we can speculate about the implications of our findings.

If the product/marketing variable captures the firm's overall orientation toward its customers, then our results may lead to the conclusion that managers and the people with whom the firm does business (both customers and employees) are the keys for long-term success. This is consistent with the resource-based view of the firm in that relationships cannot be easily imitated. When predicting long-term stock price growth, the only variables that were significant were those that were "people dependent."

Both culture and product/market (as measured in this study) appear to be variables that have synergistic traits inherent to them. While culture represents a broader resource that emphasizes how employees work together, the product/market resource may represent how the firm works with its customers. The items in the product/market measure capture not only the characteristics of the product, but product, marketing, sales, and service. Perhaps a better term for the measure is "customer relations" or "customer culture." Thus, it may not be the actual products or practices that a company has in place (e.g. HRM practices for employees or the product for customers) but the environment that the firm creates to conduct business with its people (both customers and employees) that is important for competitive advantage. Further research that studies both the environment or culture for employees and for customers simultaneously, while controlling for the effects of other resources (e.g. technology, plant, equipment, etc.), is needed.

Limitations

A number of limitations must be recognized in this research. First, our measure of the importance of the five resource factors was obtained in mid-1995 although the performance measures ranged from 1993 until 1996. 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 1993, 1994, and part of 1995. This measure, however is also being used to predict the stock price from the time of the IPO through year-end 1996. 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. It is unlikely that a manager would believe that it was management that made the most difference in impacting performance in the past, but for the next year employees will play a critical role while management will be relatively unimportant as a determinant of the firm's performance.

Also, our measures of resources are based on the perceptions of one individual, in this case the highest ranking officer from whom we received a survey response. However, for a number of firms we received surveys from multiple respondents, and our assessment of the potential for this type of bias showed that this form of bias should be minimal because the correlations between the responses from the highest ranking individual (what we used) and the average for all respondents was over .92 for all variables. Thus, these results lead to the conclusion that it is highly unlikely that using the single respondent impacted the results.

Another source of bias comes from the fact that the respondents seem to be from firms with higher stock prices in years 1994 through 1996. These organizations did not differ, however, on other organizational level variables such as risk, company size, or net profitability at the time of the IPO. One reason for this bias may stem from the fact that some of the nonrespondents could be from firms that are going out of business or longer in existence. IPO firms are subject to a larger number of risk factors, and many of these firms merge with other organizations or go out of business within a few years after the IPO. In fact, the Welbourne and Andrews (1996) study of firms that initiated their IPO in 1988 found that within 5 years only 60% of those firms had survived. In addition, the nonrespondents may not have wanted to participate because their firms were not performing well, and the study was communicated as a research study on 1993 IPO firms. The bias in performance leads us to conclude that our results may understated because we do not have as much variance in the dependent variable as we could if the lower performing firms would have responded at a higher rate.

An additional limitation involves the generalizability of our findings. The IPO sample is unique in that we are capturing firms at an early stage in their life cycle, and many firms do not have formal HRM practices. These firms are, generally speaking, younger and smaller than the firms more typically studied. Thus, the results may not be generalizable to larger, more established organizations. However, given the current interest from larger firms in becoming more "entrepreneurial" and to undergo massive change efforts, the findings may be generalizable to certain samples of larger organizations. In addition, although generalizability is questionable, the fact that we study a unique sample of firms that has received little attention

from management researchers in the past, leads to the study potentially making an important contribution to the literature on firm growth and on the resource-based view of the firm.

Conclusion

The results of this study point to the importance of the way a firm treats its relationships - with management, employees, and customers as a source of sustainable competitive advantage (Barney & Wright, in press; Pfeffer, 1994; Wright et al., 1994). This reemphasizes the importance for managers to seek competitive advantage from resources that are costly or difficult to imitate. As Barney (1991) noted, this leads to exploiting resources that are socially complex and/or causally ambiguous. In fact, 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).

References

- Aaker, David A. (1989). 'Managing Assets and Skills: The Key to a Sustainable Competitive Advantage', *California Management Review*, 31(2), pp. 91-106.
- Alchian, A. & Demsetz, H. 1972 . Production, Information Costs, and Economic Organization, *American Economic Review*, 62: 777-795.
- Barney, J. 1991 . Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17: 99-120.
- Barney, Jay B. (1995). 'Looking Inside for Competitive Advantage', *Academy of Management Executive*, 9(4), pp. 49-61.
- Barney, Jay B. (1996). *Gaining and Sustaining Competitive Advantage*. Addison Wesley, Reading, MA.
- Barney, J., & Wright, P. forthcoming. On becoming a strategic partner. The role of human resources in sustainable competitive advantage. *Human Resource Management*.
- Beatty, R.P., & Zajac, E.J. 1994. Managerial incentives, monitoring, and risk bearing: A study of executive compensation, ownership, and board structure in initial public offerings. *Administrative Science Quarterly*, 39: 313-335.
- Becker, G. 1964 . *Human Capital*. New York: Columbia University Press.
- Cappelli, P. & Singh, H. 1992 . Integrating Strategic Human Resources and Strategic Management. In D. Lewin, O.S. Mitchell & P. Sherer (Eds.), *Research Frontiers in Industrial Relations and Human Resources*, Madison, WI: Industrial Relations Research Association.
- Castanias, R.P. & Helfat, C.E. 1991 . Managerial Resources and Rents, *Journal of Management*, 17:15-171.
- Clapham, S. & Schwenk, C. 1991. Self-serving attributions, managerial cognition, and company performance. *Strategic Management Journal*, 12 (3): 219-229.
- Clemons, E. and M. Row (September 1991). 'Sustaining IT advantage: The role of structural differences', *MIS Quarterly*, pp. 275-292.
- Collis, D. (1994). 'Research Note: How Valuable are Organizational Capabilities?', *Strategic Management Journal*, pp. 143-152.
- Delery, J., & Doty, H. 1996. Modes of theorizing in strategic human resource management: Test of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39: 802-835.
- Dierickx, I. and Cool, K. 1989 . Asset Stock Accumulation and Sustainability of Competitive Advantage, *Management Science*, 35:1504-1511.

- Fiol, M. 1991 . Managing Culture as a Competitive Resource: An Identity-Based View of Competitive Advantage, *Journal of Management*, 17: 191-211.
- Ginsberg, A. 1994 . Minding the Competition: From Mapping to Mastery. *Strategic Management Journal*, 15,:153-174.
- Grant, R. 1991. The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation, *California Management Review*, Summer, 114-135.
- Hall, R. (1992). 'Strategic Analysis of Intangible Resources', *Strategic Management Journal*, pp. 135-144.
- Hambrick, D. & Cannella, A. 1989. Strategy implementation at substance and selling. *Academy of Management Executive*, 3(4): 278-285.
- Hambrick, D. & Mason, P. 1984. Upper Echelons: The Organization as a Reflection of its Top Managers. *Academy of Management Review*, 9, 193-206.
- Hansen, G. and B. Wernerfelt. (1989). 'Determinants of Firm Performance: The Relative Importance of Economic and Organizational Factors', *Strategic Management Journal*, pp. 399-411.
- Heider, F. 1958. *The Psychology of Interpersonal Relations*. Wiley, New York.
- Hill, C. W. 1997. Establishing a standard: Competitive strategy and technological standards in winner-take-all industries. *Academy of Management Executive*, 11(2): 7-25.
- Huselid, M. 1995. The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38: 635-672.
- Huselid, M. & Becker, B. 1997. The impact of high performance work systems, implementation effectiveness, and alignment with strategy on shareholder wealth. Paper presented at the 1997 Academy of Management Meetings, Boston, MA.
- Ibbotson, R.G. & Ritter, J.R. 1995. Initial public offerings. In R.A. Jarrow, V. Maksimovic, & W.T. Ziemba (Eds.), *Finance: North-Holland Handbooks in Operations Research and Management Science*, 9: 993-1016.
- Jones, E.E. & Nisbett, R.E. 1972. The Actor and The Observer: Divergent Perceptions of the Causes of Behavior. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins and B. Weiner (eds.), *Attribution: Perceiving the Causes of Behavior*. General Learning Press, Morristown, NJ, 79-94.
- Kelley, H.H. (1967). 'Attribution theory in social psychology'. In D. Levine (ed.), *Nebraska Symposium on Motivation*, Vol. 15, University of Nebraska Press, Lincoln, NE, pp. 192-238.

- Kelley, H.H. & Michela, J.L. 1980. Attribution Theory and Research, *Annual Review of Psychology*, 31: 457-501.
- Klein, B., Crawford, R.G., & Alchian, A. 1978. Vertical Integration, Appropriable Rents, and the Competitive Contracting Process, *Journal of Law and Economics*, 21: 257-285.
- Lado, A.A. & Wilson, M.C. 1994. Human Resource Systems and Sustained Competitive Advantage: A Competency-Based Perspective. *Academy of Management Review*, 19 (4): 699-727.
- Lev, B. & Thiagarajan, R. 1993. Fundamental information analysis. *Journal of Accounting Research*, 31(Autumn): 190-215.
- MacDuffie, J. 1995. Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48: 197-221.
- Mahoney, J. and J. R. Pandian. (1992). 'The Resource-Based View within the Conversation of Strategic Management', *Strategic Management Journal*, pp. 363-380.
- Mintzberg, H. 1994. The Fall and Rise of Strategic Planning. *Harvard Business Review*, (January/February), 107-114.
- O'Flaherty, J.S. 1984. *Going public: The entrepreneur's guide*. New York: John Wiley & Sons.
- Pfeffer, J. 1994. *Competitive Advantage Through People*, Boston: Harvard Business Review Press.
- Oliver, Christine. (1997). 'Sustainable Competitive Advantage: Combining Institutional and Resource-Based Views', *Strategic Management Journal*, 18(9), pp. 697-713.
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. Wiley, New York.
- Peteraf, M.A. (1993). 'The cornerstones of competitive advantage: A resource-based view', *Strategic Management Journal*, 14(3), pp. 179-191.
- Porter, M.E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Free Press, New York.
- Porter, M. 1985. *Competitive Advantage*. New York: The Free Press.
- Porter, M. (1991). 'Towards a Dynamic Theory of Strategy', *Strategic Management Review*, pp. 95-117.
- Porter, M. and V. Millar (1985). 'How information gives you competitive advantage', *Harvard Business Review*, 65(4), pp. 149-160.
- Powell, T.C. 1995. Total quality management as competitive advantage: A review and empirical study. *Strategic Management Journal*, 16 (1): 15-37.

- Powell, T.C. & Dent-Micallef, A. 1997. Information Technology as Competitive Advantage: The Role of Human, Business, and Technology Resources, *Strategic Management Journal*, 18 (5): 375-405.
- Rackoff, N., Wiseman, C. & Ullrich, W. 1985. IS is for competitive advantage: Implementation of a planning process, *MIS Quarterly*, 9: 285-294.
- Rasheed, A., & Datta, D.K. 1994. Determinants of price premiums: A study of initial public offerings in the medical diagnostics industry. Paper presented at the Academy of Management Annual Meeting, Dallas, TX.
- Reed, R. & DeFillippi, R. 1990. Causal Ambiguity, Barriers to Imitation, and Sustainable Competitive Advantage, *Academy of Management Review*, 15: 88-102.
- Ricardo, D. 1817. *Principles of Political Economy and Taxation*. London: G. Bell.
- Rockart, J. & Short, J. 1989. IT in the 1990's Managing Organizational Interdependence, *Sloan Management Review*, Winter, 7-17.
- Salancik, G., & Meindl, J. 1984. Corporate attributions as strategic illusions of management control. *Administrative Science Quarterly*, 29: 238-254.
- Sanchez, R. 1995. Strategic Flexibility in Product Competition. *Strategic Management Journal*, 16: 135-159.
- Schuler, R. and I. MacMillan. (Fall 1984). 'Gaining Competitive Advantage through Human Resource Management Practices', *Human Resource Management*, pp. 241-255.
- Schultz, Howard and Dori Jones Yang. (1997). *Pour Your Heart Into It*.
- Schumpeter, J. 1934. *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Snyder, M.L., W. Stephan and D. Rosenfield (1978). 'Attributional egotism'. In J. H. Harvey, W. Ickles and R. F. Kidd (eds.), *New Directions in Attribution Research*, Vol. 2. Erlbaum, Hillsdale, NJ, pp. 81-117.
- Snyder, M.L, Stephan, W. & Rosenfield, D. 1976. Egotism and Attribution, *Journal of Personality and Social Psychology*, 33: 435-441.
- Staw, B., McKechnie, P., & Puffer, S. 1983. The justification of organizational performance. *Administrative Science Quarterly*, 28: 582-600.
- Wagner, J.A. & Gooding, R.Z. 1997. Equivocal Information and Attribution: An Investigation of Patterns of Managerial Sensemaking, *Strategic Management Journal*, 18 (4): 275-286.
- Weiner, B. (1995). 'Attribution theory in organizational behavior: A relationship of mutual benefit'. In M. J. Martinko (ed.), *Attribution Theory: An Organizational Perspective*. St. Lucie Press, Delray Beach, FL, pp. 3-6.

Welbourne, T.M. & Andrews, A.O. 1996. Predicting performance of initial public offerings: Should human resource management be in the equation? *Academy of Management Journal*, 39(4), 891-919.

Welbourne, T., & Cyr, L. 1997. Agency theory implications for strategic human resource management: Effects of CEO ownership, administrative HRM, and incentive alignment on firm performance. Paper presented at the 1997 Academy of Management Meeting.

Wright, P.M. & McMahan, G.C. 1992. Theoretical Perspectives for Strategic Human Resource Management. *Journal of Management*, 18 (2): 295-320.

Wright, P.M., McMahan, G.C. & McWilliams, A. 1994. Human Resources and Sustained Competitive Advantage: A Resource-Based Perspective. *International Journal of Human Resource Management*, 5 (2): 301-326.