A Correlational Study of the Relationship between a Firm's Intangible Resources and its Sustainable Competitive Advantage.

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Abstract

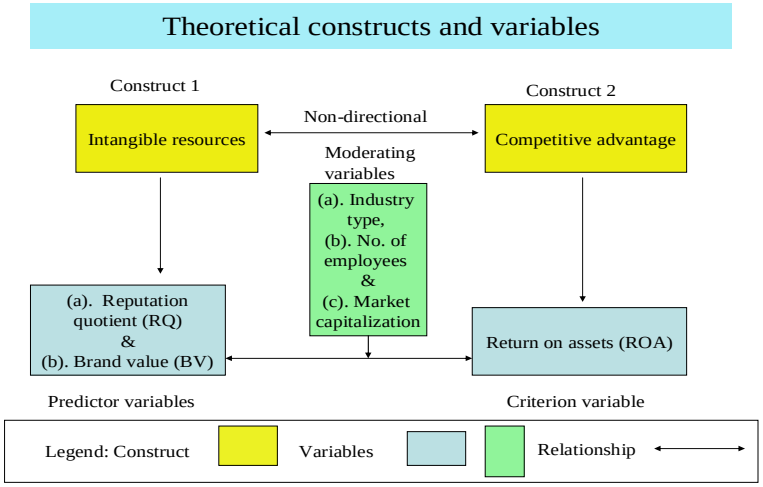
The resource-based view of strategy predicts that the more intangible resources a firm has, the greater the sustainability of its competitive advantage. A firm's brand value and the industry the firm is in are important predictors of its return on assets. Human resources and capabilities are important intangible sources of sustained competitive advantage for firms.

Problem statement and purpose

The most important assets of a firm are intangible. However, they are not capitalized and they do not appear in the balance sheet (Aaker, 1991). The wide disparity between a firm's market capitalization and the book value of its assets reveal that there is a disconnect between what is financially reported and what the market perceives. A firm's corporate reputation and its brand value are intangible resources or market-based assets that enable it to possess capability differentials which result in sustainable competitive advantage (Hall, 1992, 1993; Itami, 1987). The reputation quotient (RQ) is a valid measuring instrument for measuring the corporate reputations of companies across industries (Fombrun, 2001). Reputation quotient (RQ) is reflected as a standardized score. It does not translate into a financially comparable value that is directly related to the performance of the firm's assets. Brand value (BV) is generally defined as the net present value of a firm's brand and it will serve as a proxy financial measure for a firm's corporate reputation. Return on Assts (ROA), generally defined as the ratio of a firm's operating income to identifiable assets, is the most appropriate profitability ratio for inter-firm comparisons as it is not affected by differences among firms in capital structure.

The purpose of this quantitative study is to test the theory of the resource-based view (RBV) of strategy that relates a firm's reputation quotient and brand value to the firm's return on assets. Other predictor variables which may have moderating effects on the relationship between RQ and BV, and ROA are the type of industry, the size or number of employees of the firm, and the market capitalization of the firm.

Theoretical framework



Resource-based view (RBV) vs. Industrial organization (IO) economics view

Strategic management seeks to understand why some firms outperform others (Rumelt, 1991) and are able to enjoy sustainable competitive advantage over their competitors. It offers two basic explanations of the performance heterogeneity of firms:

(1) The structure-conduct-performance (SCP) paradigm in industrial organization economics (IO) which focuses on the structure of the industries within which a firm operates to explain heterogeneity in firm performance. In the SCP model, the unit of analysis is the industry or the strategic group.

(2) The resource-based view (RBV) of the firm (Wernerfelt 1984; Barney, 1991b) that is built on Penrosian economics (Penrose, 1959) and the evolutionary theory of the firm (Nelson & Winter, 1982), focuses on the attributes of firms to explain heterogeneity in performance. In the RBV model, the unit of analysis is the bundle of resources and capabilities controlled by a firm. These include tangible and intangible resources like the teamwork and reputation of employees (Barney, 1991a).

Wernerfelt's (1984) early resource-based theory of competitive advantage is based on the resources a firm develops or acquires to implement a product market strategy and it is intended to complement Porter's (1980) theory of competitive advantage based on a firm's product market position (Barney & Arikan, 2001). This contrasts with Barney's (1986a) resource-based theory of economic rents which is based on the attributes a firm controls. He maintains that the resources that a firm already controls are more likely to be sources of economic rent than resources that are acquired from external sources (Barney & Arikan, 2001). Hence, the contrast between the resource-based theory of competitive advantage and the resource-based theory of economic rent means that firms with a competitive advantage may or may not earn an economic rent. Other parallel RBV streams include the theory of invisible assets (Itami, 1987) and the competence-based theories of corporate diversification (Prahalad & Bettis, 1986; Prahalad & Hamel, 1990).

The RBV definition of intangible resources

"Within the RBV framework, the firm is viewed as a nexus of resources and capabilities that are not freely bought and sold in the spot market" (Lado & Wilson, 1994, p. 701). For a resource to be a source of sustainable competitive advantage, it "must be simultaneously unique, difficult to trade and difficult to duplicate and substitute" (Ambrosini, 2003, p.6). Intangible resources are likely to be tacit and hard to codify (Kogut & Zander, 1992; Conner & Prahalad, 1996). Hence, they are difficult to articulate, acquire or develop, and to replicate and accumulate within a firm (Winter, 1987; Itami, 1987). They are not easily understood and imitated by other firms (Rumelt, 1984; Dierickx & Cool, 1989; Nelson, 1991) It is this uncertain imitability that makes them valuable and therefore, likely to be the basis for a sustainable competitive advantage (Lippman & Rumelt, 1982; Hall, 1993). Resources are imperfectly imitable because they are "specialized to a particular usage or firm" (Castanias & Helfat, 1991, p.162) and because they are history dependent (Dierickx & Cool, 1989). Finally, these intangible resources are likely to trade in imperfect markets (Barney, 1986a).

Intangible resources allow firms to possess relevant capability differentials which result in sustainable competitive advantage (SCA) Hall (1992, 1993). They encompass the following broad categories:

(1) Organizational capabilities or organizational competencies

"Organizational capabilities characterize the dynamic, nonfinite mechanisms that enable the firm to acquire, develop, and deploy its resources to achieve superior performance relative to other firms (Lado & Wilson, 1994, p. 701). They include teamwork, trust, organizational culture, learning, routines, innovation, adaptation and entrepreneurship. "Organizational competencies include all firm-specific assets, knowledge, skills, and capabilities embedded in the organization's structure, technology, processes, and interpersonal (and intergroup) relationships" (Lado & Wilson, 1994, p.702), as well as "team effects" (Wernerfelt, 1989, p.7).

(2) Managerial competencies

Managerial competencies include the "mental models or dominant logic (Prahalad & Bettis, 1986) of the managerial team. "As systems of shared meanings, organizations, through their managers, constantly act upon, cognitively interpret, and select their own environments" (Lado & Wilson, 1994, p.703).

(3) Knowledge-based competencies

Knowledge-based competencies include "invisible strategic assets such as corporate reputation or image, product or service quality, and customer loyalty" (Lado & Wilson, p.708). They also include patents and brand names (Wernerfelt, 1989); consumer trust, brand image and control of distribution (Itami, 1987).

(4) Organizational or human capital

Organizational (Lado & Wilson, 1994) or human capital in a firm (Wright et al., 1994) focuses directly on the knowledge, skills and abilities inherent in the individuals that make up the organization (Wright et al. 1994). "Knowledge can be viewed as something that characterizes individuals (i.e., human capital), but it can also be shared within groups or networks (i.e., social capital) or institutionalized within organizational processes and databases (i.e., organizational capital)" (Wright et al. 2001, p.714). "An organization's HR system can be viewed as a repository of knowledge about firm-specific knowledge, skills, abilities, relationships, and the work-related values of its employees…Organizational capital, is specific to the organization's technology, structure, and processes, is socially generated through interactions…and is embedded in the firm's unique history. To the extent that such knowledge enables members of the firm to attract, develop, and retain employees with competencies that surpass those of competitors, it may contribute to sustained competitive advantage" (Lado & Wilson, 1994, p. 709). Organizational capital or capabilities, "directly influence the results that your employees deliver to your customers" (Bennett & Bell, 2004, p. 57).

Research questions

The RBV theory of strategy predicts that the more intangible resources a firm has, the greater the sustainability of its competitive advantage (Itami 1987; Conner, 1991; Barney, 1997). The main research question to test this prediction is a non–directional hypothesis:

Is there a relationship between the degree of intangible resources that a firm has and its ability to sustain its competitive advantage?

Some corollary questions that relate to the main research question are:

- Is there a relationship between the type of industry a firm is in and its ability to sustain its competitive advantage?
- Is there a relationship between the number of employees that a firm has and its ability to sustain its competitive advantage?
- Is there a relationship between the level of a firm's market capitalization and its ability to sustain its competitive advantage?

Methodology, sample, analyses, delimitations and limitations

The purpose of the design is to correlate RQ and BV to their respective ROAs to establish the relationship between them. This is a four-year longitudinal and observational study using a non-randomized design and published data. The nonrandomized sample population includes the top 50 firms that have consistently been in Fortune's World's Most Admired companies' listings from 2000 to 2003 as measured by their reputation quotient, as well as Business Week's Global Top 100 companies' listings from 2000 to 2003 as measured by their brand values.

Since RQ and BV are continuous, the Pearson Correlation Coefficient is applied. Simple Regression Analysis (SRA) is applied to estimate whether the relationship between the variables is linear or non-linear, as well as to estimate the expected change in one variable per unit of change in the other variable. Multiple Regression Analysis (MRA) is used to accommodate the additional predictor variables, so as to increase the predictive utility or to reduce the errors that may arise as a result of the additional model parameters that need to be assessed in the MRA.

The study is not intended to establish or explain any causal relationship between the variables. The study is limited by the possible subjectivity of the reputation quotients published by Fortune and the possible lack of reliability of the brand values published by Business Week. There is a presumption that the reputation quotient is a valid measurement and that brand value has a high level of face validity since the measures have been published globally since 1983 and 1990, respectively.

Summary of results and findings

To generate more robust statistical analyses, the BV data of sixty-one Business Week companies have been combined from 2000 to 2003, resulting in 244 data points. Similarly, the RQ data of thirty-five Fortune companies have been combined from 2000 to 2003, resulting in 140 data points. Omitted from the sample are companies that are not consistently ranked in either listing over the four-year period, or where key data required for analysis such as RQ or BV, Profits, Assets, Market Capitalization and Total Employees are not publicly available, for example, privately held companies.

The findings reveal that Industry Type is a valid predictor variable that has predictive utility in both Fortune's Reputation Quotient (RQ) and Business Week's Brand Value (BV) data sets. In the BV data set, all three predictor variables (Brand Value, Industry Type and Employee Size) have predictive utility on the ROA. It appears from the research findings that the RBV theory is better supported using the BV data set. In addition, both BV and RQ are moderated by Industry Type.

Conclusions, interpretation of findings and recommendations

Reputation quotient

The results of this study indicate that reputation quotient (RQ) has no predictive utility for ROA. In this study, P&G's reputation quotient (RQ) has consistently been ranked first for the years 2002-2003. Prima facie, it seems that the research results contradict what we know about P&G's reputation and the confidence it inspires in investors. Firms with a competitive advantage may or may not earn an economic rent. In a perfect market, the firm may not earn an economic rent if the price paid to acquire or develop such resources has been anticipated in the value of the firm's product strategy. P&G's CEO, A.G. Lafferty's contention that P&G's family-culture (Fortune, 2004) is a competitive advantage refers to P&G's desire to earn Penrosian (1959) rents which are generated by inelastic productive resources like managerial teams, top management groups and the entrepreneurial skills found in a firm. Such resources are regarded as sources of superior firm performance and the theory is drawn from Wernerfelt's (1984) resource-based theory of competitive advantage. There is no contradiction of the research findings.

Brand value

Brand value (BV) is statistically significant and it has predictive utility for a firm's ROA. In this study, Coca-Cola's brand value has consistently been ranked first over the period 2000-2003. Its brand value as an intangible asset confirms the RBV theory of strategy. The company possesses the relevant marketing and strategic capability differentials that enable it to have a sustainable competitive advantage over its competitors (Hall, 1992 & 1993). Coca-Cola's market-based assets are both relational in terms of the relationships with customers and bottlers, and intellectual in terms of the technology and the complex web of global strategic business partnerships and alliances. The Coca-Cola brand equity and firm knowledge about customers' needs, tastes and preferences are intangible assets that the Coca-Cola Company has successfully leveraged to achieve sustainable competitive advantage (Itami, 1987). These intangible resources are unique, valuable, and difficult to imitate market-based assets (ibid). The inimitability of the Coca-Cola brand may be due to its unique history and the unique paths that Coca-Cola's top management and employees have traveled over the last century (Dierickx & Cool, 1989). Finally, like most firms with intangible resources, the Coca-Cola brand has been trading in the highly imperfect world-wide cola beverage market where the Coca-Cola brand towers over its closest rival, PepsiCo (Barney, 1986a; Hays, 2004).

Employee Size

Employee Size does not have any interaction or moderating effect on the relationship between Reputation (RQ) and ROA. This can be interpreted to mean that how employees feel about a firm is more important to its reputation than how many employees a firm has. "The internal brand (or employer brand) is the image that employees and others have about what type of employer an organization is" (Bennett & Bell, 2004, p. 62). Employee Size also does not have a moderating effect on the relationship between Brand Value (BV) and ROA. However, the number of employees in a firm has predictive utility for ROA. This can be interpreted to mean that the more employees a firm has contributing to the generation of revenues of a brand, the more likely it is to generate higher revenues for the firm. This is especially true for labour intensive industries. Employee size can also be a proxy for the amount of knowledge or capabilities in a firm that can contribute to its sustainable competitive advantage. From the research findings, almost two thirds of the variability of ROA (64%) is attributed to BV and one third (36%) is attributed to Employee Size. The findings support the hypothesis that employee size does contribute directly with BV to ROA.

Market capitalization

Market Capitalization has no predictive utility for ROA. Sometimes, low market share firms may be just as profitable given certain favorable industry and firm-specific conditions (Hammermesh, et al., 1978; Woo, 1981). However, Market Capitalization does have a moderating effect on the relationship between RQ and ROA. Market Capitalization does not have a moderating effect on the relationship between BV and ROA. BV has predictive utility for a firm's profitability but capital resources are not necessarily drawn to the firm by potential investors just because a firm has a strong BV. Investors will invest in firms they believe are credible, reliable, responsible, trustworthy and accountable, that is, firms with strong reputational and social capital with its multiple stakeholders (Petrick et al., 1999), as well as firms with strong earnings potential.

Industry type

Finally, Industry Type has predictive utility for both RQ and BV. Industry Type has a moderating effect on the relationship between BV and ROA. In fact, almost 90% of the variability of ROA is attributed to Industry Type and 10% is attributed to BV. Hence, the findings support the hypotheses but they contradict Rumelt (1991) who has found that the most important sources of economic rents are business specific, rather than the industry within which the business operates. The findings also somewhat contradict Hansen & Wernerfelt (1989) who has demonstrated that the characteristics of a firm's organizational climate (e.g., attitudes, beliefs and values) have a more significant impact on its performance than the attributes (e.g., average ROA) of the industry within which it operates. Bain (1956) has been concerned with identifying properties of industries that contribute to above average profitability (Heflebower, 1957). He refers to the structure-conduct-performance (or SCP) paradigm and suggests that the structure of a firm's industry defines the range of activities that a firm can engage in, i.e., 'conduct', and in turn, the 'performance' of firms in that industry. Firms that operate in industries with structures that are not perfectly competitive may have conduct options that enable them to obtain levels of performance that reduce social welfare in significant ways.

Using Coca-Cola to illustrate the SCP paradigm, Coke's conduct and performance enabled it to have significant competitive advantage over its competitors. It set up a new bottling company, Coca-Cola Enterprises (CCE) that eventually bought out or bought into its range of bottlers around the world. That gave Coca Cola a captive market in which to sell its concentrate, determine how much concentrate to sell to the bottlers and the share in the bottler's profits (at a level predetermined by Coke). Coke's bottling network consisted of many interlocking directorates and this gave Coke power in its inter-organizational relations. On the relationship between BV and ROA, almost 90% of the variability of ROA is attributed to Industry Type and 10% is attributed to BV. Using the Coke illustration, the findings indicate that in spite of Coca-Cola's strong brand value, the way the industry it is in is structured and the strategies that the company has chosen to operate with in that industry, have important moderating effects on the relationship between BV and ROA.

Recommendations for future research

Most highly diversified, transnational and global organizations have to contend with the problems of interlocking directorates. Perhaps, the impact of interlocking directorates on the sustainability of a high brand value firm's profitability can be an area for future research. The research can be informed by the RBV of strategy as to whether interlocking directorates can be deemed to be a part of a firm's intangible resources or organizational capabilities; as well as by the Social Exchange Theory and the Resource Dependence Model.

It is important for employees to have a clarity of the "internal or employer brand" as it "defines what employees can expect from their employer and serves as a litmus test for the alignment of people practices. Once an internal brand is clearly defined, it becomes relatively easy to test whether a particular people practice system …helps to deliver the brand promise to customers"(Bennett & Bell, 2004, pp. 64-67). Hence, if it is employees who make your organization's brand come alive for customers (ibid), then perhaps an important area for future research can be to see how a leader can enhance the organization's external brand value through the development of its internal brand with its employees so as to achieve sustainable competitive advantage.

How this research contributes to new knowledge in Human Resource Management (HRM)

This research reveals that the influence of market structure on the firm's strategy and performance is a very important moderating variable on the relationship between the intangible resources and capabilities that a firm has and its sustainable competitive advantage. This understanding provides a more holistic and strategic perspective to HRM as the firm's business strategies, strategic alliances, interlocking directorates and inter-organizational power relations have important implications for the firm's HR systems, principles, policies and practices. Furthermore, in order for HR to be an advocate of people-related business issues at the strategic apex of the organization (Lado &

Wilson, 1994), it must have the ability to take a 'helicopter view' of the firm and the industry or environment in which the firm operates so as to ensure that the appropriate HR systems, principles, policies and practices enable the firm to effectively develop, mobilize, harness, deploy or combine its intangible resources and capabilities to achieve sustainable competitive.

"Resource-based logic suggests that socially complex resources and capabilities should be among the most important sources of sustained competitive advantages for firms. Human resources are examples of socially complex resources and many human resources theorists have drawn heavily on resource-based logic to examine the impact of human resources and human resource policies on firm performance" (Barney & Arikan, 2001, p.171). The RBV states that a firm develops competitive advantage by not only acquiring but also developing, combining, and effectively deploying its physical, human, and organizational resources in ways that add unique value and are difficult for competitors to imitate (Barney, 1991a; Colbert, 2004). Human resources include the skills, knowledge, and behaviors of employees; as well as the experience, intelligence, training, judgment, and wisdom of individuals associated with the firm (Barney 1991a). Emphasis is placed "on the role of managers in the selection, development, combination and deployment of a firm's resources, and not merely on selecting its competitive position in the operating environment" (Colbert, 2004, p.341). "Managers are as much responsible for their organization's success as they are for its failure…. because they determine the acquisition, development, and deployment of organizational resources, the conversion of these resources into valuable products and services, and the delivery of value to organizational stakeholders, can be potent sources of managerial rents, and thus, sustained competitive advantage" (Lado & Wilson, 1994, pp.701-703).

This research serves to enlighten managers about the wealth of intangible resources in their work environments and to provide them with an understanding of how to distinguish between resources that are valuable but not rare or imperfectly imitable, or non-substitutable. On the other hand, some resources may have competitively important attributes. Managers must be trained to understand, protect and nurture the firm's intangible resources so that the firm can sustain its competitive advantage. The study also serves to help managers seeking to mobilize the firm's bundle of intangible resources for sustainable competitive advantage to understand that the contrast between the resource-based theory of competitive advantage and the resource-based theory of economic rent means that firms with a competitive advantage may or may not earn an economic rent.

While the RBV explains "the importance of human resources to firm competitiveness, it does not specifically deal with how an organization can develop and support the human resources it needs for competitive advantage" (Delery, 1998, p.290). Colbert (2004) believes that this is the paradox inherent the RBV because the RBV maintains that organizational capabilities are inimitable and causally ambiguous (i.e., organizationally embedded or unobservable), socially complex (i.e., the way the firm's physical, human and organizational resources are combined) and subject to time compression diseconomies (or path dependent). When socially complex phenomena that give rise to ambiguity change over time, management is unable to orchestrate the changes (Barney, 1986b; Grant, 1991; Nelson & Winter, 1982; Wright et al. 2001; Colbert 2004). "To the extent that a firm's competitive advantage is based on causally ambiguous resources, managers in that firm cannot know, with certainty, which of their resources actually generates that competitive advantage"(Barney & Arikan, 2001, p.173). As Becker & Gerhart (1996) maintain, "It is difficult to grasp the precise mechanisms by which the interplay of human resource practices and policies generate value. To imitate a complex system, it is necessary to understand how the elements interact…because the understanding of the system is an organizational capability that is spread across many (not just a few) people in the firm" (ibid, p.787). It is this inimitability and imperfect mobility (as the resources are firm specific) that is "the key to sustaining economic rent and it is one of the cornerstones of competitive advantage identified by Peteraf (1993)" (Colbert, 2004, p.348).

In the study at hand, the level of analysis is at the organizational level as the resource-based view of the firm, the resources and capabilities controlled by a firm are the primary unit of analysis. In organizational studies, the level of analysis refers to the structural level of a theoretical construct e.g., individual, organizational or industry levels (Rousseau, 1985). However, the Human Resource System or HR is conceptualized at a level of abstraction like HR principles, HR policies or HR practices (Wright, 1998). For example, an HR principle can be to build a 'borderless organization'. This can translate into an HR policy of movement across departmental and organization boundaries. In turn, this can give rise to HR practices like job rotation, cross-functional teams, or business units borrowing talent from one another to make products happen – as in the case of P&G (Fortune, 2004; Colbert 2004). Another HR principle can be to build the organization's learning capacity. This can translate to an HR policy of fostering knowledge exchange across organizational units. In turn, this can give rise to HR practices like learning forums and communities of practice – again, as in the case of P&G (Fortune, 2004; Colbert 2004).

Various bundles of human resource practices can have the effect of creating significant firm specific human capital investments (Barney & Arikan, 2001). HR's ability to generate and synthesize ambiguous and diverse data

about employees' knowledge, skills and abilities and interpreting this information within their organizational contexts will contribute to the formation of a firm's organizational capital (Lado & Wilson, 1994). This invaluable intangible resource is firm-specific, socially generated through interactions among the firm's members and embedded in the firm's unique history. The RBV "suggests that human resource systems can contribute to sustained competitive advantage" (ibid, p.699). Hence, HR management can use HR systems to transform the HR function from a purely cost-based administrative function to one that is focused on creating and redeploying a firm's unused productive services of latent resources (Penrose, 1959). These include the knowledge, skill and the behavioral dynamics of individuals and groups as the forces for creativity, innovation, firm growth and relative industry advantage (i.e., sources of competitive advantage).

Colbert (2004) suggests that with respect to the HR system many analogies can be drawn between complex adaptive systems (CAS) and the RBV. Both feature complex and adaptive systems that evolve irreversibly through time; their evolutionary steps cannot be easily retraced, are emergent or unpredictable, and path dependent. Therefore, drawing from CAS, the RBV is able to explain how an organization can develop and support the human resources it needs for competitive advantage (Delery, 1998; Colbert, 2004). "Growth and rent creation are driven by creative disequilibrium at both the firm and industry levels" (Colbert, 2004, p.348). It means that HR principles should focus on processes and, in turn, the policies, practices and behavioral effects induced by the HR practices will 'self-organize' (Prigogene & Stengers, 1984) according to the interplay of the intentions, choices and actions of the firm's stakeholders: the customers, suppliers, shareholders, employees, governments, competitors and the community. Hence, how HR principles "translate to HR policies and practices will depend on the historical experience of the organization and the nature and quality of the human relationships within the system" (Colbert, 2004, p.354).

Many companies today endeavor to follow industry best practices, believing that 'sameness' across firms will result in 'sameness' in the level of profitability. However, instead of achieving the same levels of profitability, the forces leading to 'sameness' across firms result in isomorphic effects in competing firms. RBV, on the other hand, believes that the forces of causal ambiguity and path dependence lead to differentiating effects in competing firms, based on the unique situation that each firm is in. For example, P&G's intangible resource, reputation, has been accrued over a long period of time and it has evolved based on the unique history and culture of the organization.

Concluding remarks

In conclusion, this study has shown that the intangible resources owned by a firm do contribute to the firm's sustainable competitive advantage. This important finding lends strong support for the value of a firm's intangible resources to be reflected in the firm's balance sheet in order to more accurately inform the firm's various stakeholders and the investment community of the firm's true worth.

In the relationship between brand value and ROA, 90% of the variability of a firm's ROA is attributed to the type of industry that a firm is in and only 10% of the variability of a firm's ROA is attributed to brand value. This indicates that the study of intangible resources in industry must be informed by a multidisciplinary theoretical framework that includes both the resource-based view (RBV) of strategy, as well as industrial organization economics (IO). Theories about economic rents and competitive advantage must be clearly delineated to facilitate understanding, yet studied together to reveal the complementarity of the concepts. This study has revealed that the way the industry that the firm is in is structured and the strategies that the firm has chosen to operate with in that industry have important moderating effects on the relationship between a firm's intangible resources and its profitability.

This study has also shown that drawing from CAS, the RBV is able to explain how an organization can develop and support the human resources it needs for competitive advantage (Delery, 1998; Colbert, 2004). The forces of causal ambiguity and path dependence will lead to differentiating effects in competing firms, based on the industry or situation each firm is in (Colbert, 2004). Armed with an appreciation of this new understanding, HR management can play a "key role in the articulation of strategic vision, in the formation of organizational capital, and in the enactment of beneficial firm-environment alignment….one that serves as an advocate of people-related business issues at the strategic apex of the organization" (Lado & Wilson, 1994, pp.708-709).

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