Corporate responsibility and financial performance: The role of intangible resources

Authors: Sandra A. Waddock, Josep A. Tribó, Jordi Surroca

THE ROLE OF INTANGIBLE RESOURCES IN EXPLAINING THE RELATIONSHIP BETWEEN CORPORATE RESPONSIBILITY AND FINANCIAL PERFORMANCE †

JORDI SURROCA
Universidad Carlos III de Madrid
Department of Business Administration
Calle Madrid, 126
Getafe (Madrid), Spain, 28903
Phone: (34) 91-624-8640
Fax: (34) 91-624-9607
e-mail: jsurroca@emp.uc3m.es

JOSEP A. TRIBÓ
Universidad Carlos III de Madrid
Department of Business Administration
Calle Madrid, 126
Getafe (Madrid), Spain, 28903
Phone: (34) 91-624-9321
Fax: (34) 91-624-9607
e-mail: joatribo@emp.uc3m.es

SANDRA WADDOCK *
Boston College
Carroll School of Management
Fulton 354C
Chestnut Hill, MA 02467
Phone: 617-552-0477
Fax: 617-552-0433
e-mail: waddock@bc.edu

This is the pre-peer reviewed version of the following article, Corporate Responsibility and Financial Performance: The Role of Intangible Resources, Josep Tribo, Jordi Surroca, and Sandra Waddock, *Strategic Management Journal*, 2010, 31 (5): 463-490, which has been published in final form at http://onlinelibrary.wiley.com/doi/10.1002/smj.820/abstract.
* Corresponding author

---

† The authors wish to thank Sustainable Investment Research International Company and Analistas Internacionales en Sostenibilidad (AIS™) for their helpful comments and for access to the SiRi Pro™ database. We would also like to thank Pascual Berrone, Luis Gomez-Mejia, Sam Graves, Isabel Gutiérrez and the referees as well as participants at the Academy of Management Conference (Honolulu, 2005), the Strategic Management Society (Orlando, 2005), and the European Academy of Management (Munich, 2005) for valuable comments and suggestions on earlier drafts. Financial support of the Comunidad de Madrid (Grant # s-0505/tic/000230), Fundación Ramón Areces, and Ministry of Education and Science (Grant # SEJ2006-01731) is gratefully acknowledged. The usual disclaimers apply.

THE ROLE OF INTANGIBLE RESOURCES IN EXPLAINING THE RELATIONSHIP BETWEEN CORPORATE RESPONSIBILITY AND FINANCIAL PERFORMANCE

Abstract

This paper examines the effects of a firm's intangible resources in mediating the relationship between corporate responsibility and financial performance. We hypothesize that previous empirical findings of a positive relationship between social and financial performance may be spurious because they failed to account for the mediating effects of intangible resources. This study tests the hypothesis that there is no direct relationship between corporate responsibility and financial performance – merely an indirect relationship that relies on the mediating effect of a firm's intangible resources. We demonstrate our theoretical contention with the use of a database comprising 599 companies from 28 countries.

Keywords: corporate social responsibility; financial performance; intangible resources; stakeholder theory

Numerous studies have attempted to identify any relationship that may exist between corporate financial performance and so-called social performance. Although authors of two recent meta-analyses (Margolis and Walsh, 2003; Orlitzky *et al.*, 2003) have concluded that the existing empirical evidence supports a positive association between these performance measures, many researchers still claim that much research remains to be conducted before this relationship can be understood (Griffin and Mahon, 1997; Margolis and Walsh, 2003; McWilliams and Siegel, 2000, 2001; Orlitzky *et al.*, 2003; Rowley and Berman, 2000; Waddock and Graves, 1997a; Wood and Jones, 1995). Specifically, Margolis and Walsh (2003: 278) have stressed the importance of developing new models that incorporate omitted variables, test mediating mechanisms and contextual conditions, and establish causal relationships between social and financial measures of performance. This paper responds to these suggestions and proposes a model in which intangible resources, traditionally perceived to be a basis of a firm's competitive advantage (Barney, 1991; Dierickx and Cool, 1989; Wernerfelt, 1984), may be a missing link that could help explain the actual relationship between corporate financial performance (CFP) and what we term corporate responsibility performance (CRP).

CRP is conceptualized as being the broad array of strategies and operating practices that a company develops in its efforts to deal with and create relationships with its numerous stakeholders and the natural environment. The degree of (ir)responsibility is therefore manifested in any corporate action that creates an impact on stakeholders and the natural environment (Waddock, 2004). From this definition, the construct of CRP is broader than the construct of corporate social responsibility (CSR) or corporate social performance (CSP), which involves those voluntary/discretionary "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams and Siegel, 2001: 117). CRP reflects the idea that responsibilities are

integral to corporate actions, decisions, behaviors, and impacts; whereas the concept of CSR constitutes the discretionary responsibilities of business (Carroll, 1979).

Our study advances the understanding of the relationship between CRP and CFP in three ways: theoretically, empirically, and methodologically. On the theoretical side, we draw on the resource-based view of the firm (RBV) and stakeholder theory formulations by proposing that certain firm-based intangible resources identified in the extant literature, including innovative capacity as related to R&D (e.g., Tamar and Hashai, 2004), human capital (e.g., Hatch and Dyer, 2004; Pfeffer, 1994), corporate reputation (e.g., Fombrun and Shanley, 1990; Fombrun *et al.*, 2000), and organizational culture (e.g., Barney, 1986; Denison and Mishra, 1995), may be the missing elements in the existing explanations of the relationship between CRP and CFP.

There are two reasons why the resource-based view represents a powerful tool for refining analysis of the interrelationships across intangibles, CRP and CFP. 1) Mainstream RBV argues that certain intangible resources improve the competitive position of organizations, and hence, of CFP. Additionally, scholars in this research tradition have argued that intangibles such as innovation (e.g., Klassen and Whybark, 1999), human resources management practices (e.g., Russo and Harrison, 2005), corporate reputation (e.g., Bansal, 2005), and organizational culture (e.g., Jones *et al.*, 2007), also enhance a firm's responsibility performance. 2) The RBV recognizes that the relationship between intangibles and performance – whether financial or responsibility – may operate in the reverse direction. On the one hand, a company's past CFP may increase the slack resources available for investing in innovation activities (e.g., Helfat, 1997) and human resources management practices (e.g., Wright *et al.*, 2005). Furthermore, good financial performance signals the quality of the firm to investors and creditors, is integral to building a valuable reputation (e.g., Fombrun and Shanley, 1990), and contributes to the shaping of a firm's culture (e.g., Denison, 1990). On the other

hand, Sharma and Vredenburg (1998) argued that CRP may be an organizational resource that can help firms to develop new intangible resources that are manifested in their technology, human resources, reputation, and culture.

Overall this evidence suggests that CRP may generate intangibles which, in turn, may lead to improved CFP; and that CFP increases slack resources available to invest in intangibles that can have a positive effect on CRP. From these ideas, the main proposition of this paper is that intangible resources mediate the relationship between CRP and CFP, and that this mediation operates in both causal directions. There is no direct relationship between CRP and CFP, we propose; but there is an hypothesized *virtuous* circle connecting both performance measures through intangible resources: Investing in CRP improves intangibles that lead to superior levels of CFP, which, in turn, must be reinvested in intangibles in order to improve stakeholder satisfaction. Finally, we argue that this result holds once we restrict the study to one important contextual situation: high-growth sectors.

On the empirical side, we make use of an international database that widens the traditional focus on US companies. This database is provided by the Sustainable Investment Research International Company (SiRi), a group of social research organizations. It includes information about stakeholder-related performance with respect to employees, business ethics, communities, suppliers, governance (shareholders), customers, and environment. These data expand upon those of KLD Research and Analytics that have been used in numerous empirical papers (e.g., Hillman and Keim, 2001). Our final sample of 599 firms from 28 nations, represents various national institutional frameworks and provides robust results for the relationships among our performance measures.

From a methodological perspective, we use a novel approach to determine the existence of a direct link between CRP and CFP, following a two-stage strategy. First,

we strictly isolate the effects of a firm's intangible resources on both performance measures. Second, we estimate the connection between CRP and CFP, using instruments that are independent of the effect of a firm's resources. This econometric approach prevents endogeneity problems between the performance variables and allows us to test if there is really a direct connection from CFP to CRP and from CRP to CFP.

REVIEW OF THE LITERATURE

Although there has been significant research over the past 30 years on the link between corporate social performance (CSP) and CFP, and although there have been at least two meta-studies showing a modest and primarily positive relationship (Orlitzky *et al.*, 2003; Margolis and Walsh, 2003), many observers still claim that the relationship has not been demonstrated indisputably (Griffin and Mahon, 1997; but see in contrast Roman *et al.*, 1999). Possible explanations for this lack of consensus rely on the local content of the studies (they focus primarily on US firms), a problem that this study attempts to overcome by using an international database; as well as the existence of several drawbacks related to measurement issues (e.g., Griffin and Mahon, 1997), the omission of variables in empirical applications (e.g., McWilliams and Siegel, 2000), and a lack of clear direction of causality between social and financial performance (e.g., Waddock and Graves, 1997a). These drawbacks are discussed in more detail in the next lines. Although much of the research described in this section has been on CSP or CSR, the same issues and arguments apply to the concept of CRP, as CRP not only incorporates the discretionary responsibilities of business (CSP), but also describes how these responsibilities are integrated in any corporate action, decision, behavior, or impact.

The Measurement Problem

Early research on the CRP-CFP link was plagued by measurement problems, because few good measures existed for the multidimensional construct of CRP (e.g.,

Aupperle *et al.*, 1985; Griffin and Mahon, 1997). This problem frequently resulted in what Wood and Jones (1995) termed "stakeholder mismatching", as researchers tended to pick a single item (e.g., an environmental measure or number of mentions of corporate social responsibility in an annual report) as a proxy for CRP. Recent advances in data, particularly the use of the KLD database, have provided broader and more encompassing measures of CRP and have been used in many current studies (e.g., Berman *et al.*, 1999; Hillmam and Keim, 2001; Rowley and Berman, 2000; McWilliams and Siegel, 2000; Turban and Greening, 1997; Waddock and Graves, 1997a, b). Although these data are far from perfect (Graafland *et al.*, 2004; Griffin and Mahon, 1997; Rowley and Berman, 2000), they, like the data used in the present study, represent a multidimensional and stakeholder-defined assessment of CRP that provides a better fit for the reality of corporate performance. The methodology section provides greater detail about the data used in this study.

Misspecification of models

The meta-analyses of Orlitzky *et al.* (2003) and Margolis and Walsh (2003) may provide a key to past results. These studies indicate that the wide range of contradictory results found in the literature may be attributable to "missing elements" that mediate or moderate the connection between CRP and CFP (see also Rowley and Berman, 2000), such as research and development (R&D) and advertising (McWilliams and Siegel, 2000), the stakeholders' moral values (Schuler and Cording, 2006), measures of corporate strategy (Berman *et al.*, 1999; Ullman, 1985), or some quadratic terms that explain a curvilinear relationship masquerading as neutrality when these terms are omitted (McWilliams and Siegel, 2001; Barnett and Salomon, 2006).

The RBV of the firm argues that a competitive advantage requires company-specific assets that are rare, valuable for customers, difficult to imitate, and not readily

substitutable (Barney, 1991). As Sanchez, Chaminade, and Olea (2000) argued, the only resources that meet these four criteria are intangibles. Accordingly, as we further develop, we posit that "the missing elements" are intangible resources like R&D, human resources, reputation, and culture.

Direction of causality

Three views on the direction of causality between CRP and CFP have been contrasted and tested empirically in the literature: 1) the view arguing that stakeholder management (CSP or what we call CRP) positively influences financial performance; 2) the view that financial performance positively influences CRP and 3) the view in both directions, defining a *virtuous* circle in the positive direction (Waddock and Graves, 1997a).

The first research stream, related to instrumental theory (Donaldson and Preston, 1995; Jones, 1995), argues that *corporate responsibility performance* influences *financial performance*. The main argument is that good management implies positive relationships with key stakeholders, which, in turn, improve CFP (Freeman, 1984; Waddock and Graves, 1997a, b). The basic assumption behind this theory is that the CRP may be an organizational resource that leads to more effective use of resources (Orlitzky *et al.*, 2003), which has a positive impact on CFP. Hence, the strategic management of stakeholder relationships – an intangible asset – can be viewed as a means of improving financial performance by invoking the resource-based theory of the firm (Hillman and Keim, 2001). Berman *et al.* (1999) also find support for the position that good stakeholder relationships have a direct positive effect on CFP, a notion sometimes called the good management hypothesis (Waddock and Graves, 1997a, b).

The second strand of literature proposes that *financial performance* influences *corporate responsibility performance*. The central argument in this literature, sometimes

called the slack resources hypothesis (Waddock and Graves, 1997a, b), is that better CFP results in a surplus of resources that provides firms with the financial wherewithal to consider social issues and to do something about them (McGuire *et al.*, 1988; Kraft and Hage, 1990; and Preston *et al.*, 1991).

The third strand of the literature supports an argument that *responsibility and financial performances are synergistic* – that CRP is both a predictor and a consequence of CFP forming a *virtuous* circle (Waddock and Graves, 1997a, b). Financially healthy firms have the resources to make discretionary investments, thereby improving CRP, and such resources generate incentives to the resource-provider stakeholders, which is relevant for generating large returns.

In summary, this literature review provides three possible explanations for a positive social-financial performance linkage, adding ambiguity about the causal association that best explains any relationship that may exist between CFP and CRP. The Orlitzky *et al.* (2003) meta-analysis claims that the relationship seems to be bidirectional and simultaneous, supporting the *virtuous* circle hypothesis (Waddock and Graves, 1997a, b). This hypothesis will be the basic framing of our model. Furthermore, we adopt the Margolis and Walsh's (2003) suggestion that new studies of the CRP-CFP relationship should simultaneously address the question of omitted control variables and test mediating mechanisms among both performance variables. We take advantage of these recommendations to propose a model that analyzes the bidirectional relationship between these performance dimensions, incorporates omitted variables (intangible resources), and tests the mediation of these variables in the connection between performance measures.

HYPOTHESES

Our research model, summarized in Figure 1, is based on the premise that there may be a recursive (bidirectional) causal link between CRP and CFP (Orlitzky *et al.*, 2003), and that, as others have argued (e.g., Ullman, 1985), different variables may intervene in the responsibility-financial performance linkage. Berman *et al.* (1999) and Ullman (1985) noted that firm strategy may be the missing element between CRP and CFP; McWilliams and Siegel (2000) suggested the investments in research and development; and Orlitzky *et al.* (2003) proposed corporate reputation. Our claim, which we test empirically, is consistent and builds upon these arguments: Intangibles are the missing element that mediates the connection between social and financial outcomes in both directions. In this section, we articulate the arguments that justify such a contention.

Intangible resources

According to the resource-based view of the firm (RBV), differences in firm performance are primarily the consequence of differences in a firm's endowment of resources, especially intangible resources, as they are difficult to acquire or develop, to replicate and accumulate, and to be imitated by competitors (Barney, 1991; Dierickx and Cool, 1989; Wernerfelt, 1984). Among possible intangible resources, the firm's technology, human capital, and reputation are considered to be the three of greatest strategic importance (Gomez-Mejía and Balkin, 2002). Other scholars, like Barney (1986) and Grant (1991), have also included human resource-based intangibles such as culture in this group of strategic resources.

Some authors (e.g., Selznick, 1996) have extended the natural domain of the RBV, which focuses on the satisfaction of shareholders, to incorporate such conceptualizations of corporate performance as corporate sustainable development (e.g., Bansal, 2005) or environmental performance (e.g., Kassinis and Vafeas, 2006; Klassen and Whybark, 1999). Hart (1995) and Litz (1996) have also expanded the RBV by

exploring its integration within the conceptual framework of social responsibility. With this extension, the RBV offers researchers a framework for analyzing the relationships between CRP and CFP through a firm's resources (Russo and Fouts, 1997). However, the potential mediating role of intangibles has been largely overlooked in the literature analyzing the connection between social and financial performance.

The mediating role of intangibles in the instrumental approach

As indicated, the instrumental stakeholder theory establishes conceptually that CRP can potentially be an organizational resource with a positive impact on CFP. Our claim, based on the RBV, is that by developing close relationships with primary stakeholders like customers, suppliers, employees, and communities, a firm can develop certain intangible resources – specifically, technology, human resources, reputation, and culture (Gardberg and Fombrun, 2006; Orlitzky *et al.*, 2003; Sharma and Vredenburg, 1998) – that better tap the human and innovation potential of the firm, gaining the much-sought-after competitive advantage that these intangibles provide (e.g., Orlitzky *et al.*, 2003; Sharma and Vredenburg, 1998). Thus, we argue below that specific intangible resources like technology, human resources, reputation, and culture mediate the relationship from CRP to CFP.

Innovation resources. Castelo and Lima (2006) argued that improved social performance may lead to more efficient and/or innovation processes that generate new market opportunities and/or new innovation products. For example, the prevention of pollution, which is a dimension of CRP, may stimulate process innovations, because the screening of the environment requires firms to improve their expertise on measuring the production process (King and Lennox, 2002). Later, the innovations aimed at preventing pollution may lead to a cost reduction and savings in resources, which will improve CFP (Russo and Fouts, 1997). Additionally, improvements in environmental performance

may lead to product innovation and to new market opportunities. For example, a certified environment-friendly firm (e.g., with an ISO 14001 certification) can enter new markets that supply environment-friendly products (Bansal and Hunter, 2003), for which customers will pay a premium, thereby improving its financial performance (Castelo and Lima, 2006; McWilliams and Siegel, 2001).

Human resources. Investing in socially responsible activities such as a clean and safe working environment, training opportunities, health and education benefits, and profit-sharing payment schemes, can have a positive impact on employees' motivation and morale, reducing absenteeism and staff turnover (Castelo and Lima, 2006) and stimulating the acquisition of firm-specific human capital by attracting and retaining highly skilled workers (Greening and Turban, 2000; Turban and Greening, 1997). Similarly, progressive human resource policies have been shown to relate positively to profitability (Pfeffer and Veiga, 1999; Pfeffer, 1994), leading, in turn, to productivity and CFP enhancement (Castelo and Lima, 2006).

Reputation. Socially responsible actions can improve brand image and firm reputation (Bramer and Pavelin, 2006; Orlitzky *et al.*, 2003). Firms with high levels of CRP build positive reputations with stakeholders (Fombrun and Shanley, 1990), which, in turn, attract better employees, improve labor commitment, allows negotiate better terms with suppliers and financial institutions and build customer loyalty (Fombrun *et al.*, 2000; Fombrun and Shanley, 1990; Greening and Turban, 2000; Turban and Greening, 1997). An increase in CFP will presumably result from all these benefits (Fombrun and Shanley, 1990; Roberts and Dowling, 2002).

Culture. CRP stimulates the development of a new organizational culture (Orlitzky *et al.*, 2003) because responsible actions have durable effects on behavior in the enterprise (Treviño, 1990). The adoption of policies and procedures for preventing pollution will be difficult if it is not accompanied by a change in the firm's culture

(Russo and Fouts, 1997) involving values and behavioral norms that affect all stakeholders, but particularly employees. Investments in certain responsible activities will lead to changes in values and norms related to treating workers ethically and shape the firm's culture (Déniz and De Saá, 2003; Turban and Greening, 1997). Such treatment can enhance workers' morale and productivity and stimulate the incorporation of highly qualified employees, which should have a positive impact of a firm's financial outcomes (e.g., Barney, 1986).

Considering the foregoing arguments, we can state the following hypothesis:

Hypothesis 1a. CRP will be positively related to the development of intangible resources, which in turn will affect CFP. In other words, intangible resources mediate the relationship from CRP to CFP.

The mediating role of intangibles in the slack resources approach

The slack resource approach suggests that better financial performance results in more available resources that may be allocated to responsibility activities. This relationship is expected to be mediated by firms' intangibles, as well.

Innovation resources. The external financing of technological activities is problematic, given the difficulties in the valuation of research and development (R&D) projects, which are subject to large information asymmetries. Furthermore, external financing increases the risk of revealing sensitive information about R&D activities, which can damage a firm's competitive advantage (Helfat, 1997). As a consequence, the availability of internal funds is expected to stimulate innovation (Nohira and Gulati, 1996). Later, through product innovation, process innovation, or both, a firm may improve its CRP (McWilliams and Siegel, 2001; Klassen and Whybark, 1999). Product innovation allows a firm to incorporate certain responsible attributes into its goods and services (i.e., products beneficial to the environment or human health, better working conditions or pay, greater reliability); whereas process innovation enables firms to

implement responsible production practices (McWilliams and Siegel, 2000, 2001) like better supply chain management favoring all the stakeholders along the supply chain.

Human resources. Wright *et al.* (2005) have suggested that financial performance may be an important determinant of human resources practices. High-performing firms possess slack resources that they may choose to share with their employees through several human resources practices like payment schemes and/or training programs, and/or progressive work organization, such as teams, quality circles, and other forms of empowerment activities. These practices encourage employee participation and loyalty as well as the adoption of firm-specific human capital, which in turn enhances job satisfaction (Déniz and De Saá, 2003) and, with that, CRP. For example, human resources practices like organizational design (Russo and Harrison, 2005) and the participation of insiders in the ownership of the firm (Kassinis and Vafeas, 2002) have been viewed as improving at least one dimension of CRP: environmental performance. Carmeli and Freund (2002) also found a positive relationship among several practices that stimulated human resources on the one hand and a proxy for CRP, the Fortune index of America's Most Admired Corporations Survey on the other.

Reputation. A strong reputation affects a firm's performance, but Fombrun and Shanley (1990) and Roberts and Dowling (2002) have also suggested that better financial performance may raise a firm's reputation with customers and investors. Furthermore, firms with a strong reputation seem to improve relations with their stakeholders (Orlitzky *et al.*, 2003). Because reputation is a valuable asset that signals a firm's commitment to fulfilling stakeholders' expectations, firms will strengthen that asset by promoting CRP (Fombrun and Shanley, 1990).

Culture. Denison (1990) has demonstrated that a firm's culture is the outcome of past successes and failures. After a period of good results, slack resources may be consumed in order to create a positive culture; whereas poor results may trigger layoffs

that may lead to a broken a corporate culture, resulting in a decrease in job satisfaction, work climate, trust, and commitment (p. 107). In addition, the fact that culture builds over time has consequences for stakeholders' satisfaction (Jones *et al.*, 2007). Specifically, a culture that treats people honestly and fairly and builds stakeholder interests into the company's goals, enhances the level of both employee satisfaction and customer loyalty, and is thus instrumental in improving corporate ecological and social responsiveness (Bansal and Roth, 2000; Carmeli, 2004; Hemingway and Maclagan, 2004; Wood, 1994).

In summary, the preceding discussion leads to the following hypothesis:

Hypothesis 1b. CFP will be positively related to the development of intangible resources, which in turn will affect CRP. In other words, intangible resources mediate the association from CFP to CRP.

Hypotheses 1a and 1b suggest that intangible resources mediate the relationship between CRP and CFP in both directions, as illustrated in Figure 1. Hence,

Hypothesis 1c. There is no direct relationship between CRP and CFP, but rather one mediated in both directions through intangible resources related to innovation, human capital, reputation, and culture.

The mediating role of intangibles in growth sectors

One of Margolis and Walsh's (2001) recommendations was to analyze the relationship between CRP and CFP under different contextual situations. To date, the unique contextual variable on which scholars have focused is the growth within an industry. This research has demonstrated that the direct effect of CRP on CFP is especially evident in high-growth industries (Goll and Rasheed, 2004; Greenley and Foxall, 1997; Russo and Fouts, 1997). These studies have not incorporated intangibles into research models, however. We now argue that the main prediction of our research model – the mediation of intangibles – also applies to high-growth sectors. Accordingly,

when controlling for intangibles, the hypothesized direct effect of CRP on CFP also disappears for firms in these sectors.

Growth sectors: mediation of intangibles in the instrumental approach. Russo and Fouts (1997) suggested that in order to receive an economic payoff from responsible activities, firms must develop intangible resources, and that these capabilities are easier to construct in high-growth industries because newer or quickly growing entities need to construct new systems in which such practices can more readily be embedded. In particular, these authors claimed that corporate social and environmental performance is more likely to generate a reputation for environmental stewardship, which will improve CFP in growth sectors. Firms in these sectors are building their reputations in a context of large information asymmetries, and their stakeholders will be more sensitive to signals of responsibility than stakeholders in mature sectors will be. Pfeffer (1994), Pfeffer and Veiga (1999) and Russo and Fouts (1997) also stressed the importance of adopting organizational structures facilitating participative human resources practices in order to achieve financial benefits from CRP activities. Firms must adapt their organizational structure to a less hierarchical, flexible, and less bureaucratic form, which is possible only in non-mature industries. These arguments suggest that in high-growth industries, CRP leads firms to develop the intangible resources needed to enhance CFP.

In addition, financial success in high-growth environments demands reliance on intangible resources like technical expertise and employee flexibility (Richard, 2000) to adequately respond to the increased complexity of the organization in a growth stage (Jawahar and McLaughlin, 2001). Overall, the preceding analysis suggests that Hypothesis 1a also holds for firms in high-growth industries.

Growth sectors: mediation of intangibles in the slack resources approach. Organizational slack allows firms to invest in new resources and capabilities. Potentially, however, there are alternative unproductive investments for slack resources,

like perks, and these undesirable options are more evident in mature industries (Jensen, 1986). Yet Chatman and Jehn (1994) have argued that slack resources in high-growth sectors are necessary for creating innovations and adaptations for survival. Similarly, Aragón-Correa and Sharma (2003) have argued that slack resources in high-growth environments provide opportunities to innovate and to make other firm-specific investments necessary to generate a proactive approach for managing the business-natural environment interface. In sum, we expect positive effects of CFP on intangible resources in high-growth sectors.

Industry growth also influences the link between intangible resources and social and environmental performance. Aragón-Correa and Sharma (2003) have argued that in munificent (high-growth) environments, the likelihood that a firm will use its intangibles to develop a proactive environmental strategy is higher than it is under conditions of scarcity (low-growth sectors). Additionally, organizational resources like changes in structural complexity, non-formalization, and decentralization, which enhance stakeholders' satisfaction by giving them more discretion, are more likely to occur in firms in high-growth sectors (Russo and Fouts, 1997). This set of arguments suggests that available intangibles after a period of strong CFP are pivotal for improving CRP in higher-growth industries. Thus, combining both arguments, we can state:

> *Hypothesis 2. There is no direct relationship between CRP and CFP in high-growth sectors, but rather one that is mediated in both directions through intangible resources related to innovation, human capital, reputation, and culture.*

METHODS

Sample and Data

Our sample comprises 599 industrial firms included in at least one year in the 2002-2004 SiRi PRO^{TM} database. Among these companies, 356 firms have information

for all three years, and 497 firms have more than one year of information. These data are compiled by the Sustainable Investment Research International Company (SiRi) – the world's largest company specializing in the analysis of socially responsible investment based in Europe, North America, and Australia. SiRi comprises eleven independent research institutions, such as KLD Research and Analytics in the USA; Pensions & Investment Research Consultants in UK; and Centre Info in Switzerland; which are coordinated from the SiRi's headquarter, located at Friburg, Switzerland.[1] For each company, there is a detailed, 20-to-30 page profile based on a common methodology across countries. The profile contains 199 items on the leading 600 international corporations.[2] Information to build these items is extracted from multiples sources, like financial accounts, company documentation, databases, media reports, interviews with stakeholders, and ongoing contact with managers.

SiRi translates this information into a comprehensive format – a rating – by implementing Likert-type scales and grouping these scales into eight research sections, with one additional section with general information about the company (location, number of employees, total turnover, etc.). The first research section provides a description of ethical/unethical corporate activities, such as political donations, corruption and bribery, and the existence of business ethics programs addressing these issues. The last section measures the degree of involvement in controversial business activities like gambling, alcohol, pornography, animal testing, and tobacco. Participating in any one of these controversial activities is a reason for a company's exclusion from the SiRi sustainability index. The remaining six sections cover various issues related to six stakeholder groups (community; customers; employees; corporate governance; suppliers;

[1] Visit www.siricompany.com for more information.

[2] Visit www.centreinfo.ch/doc/doc_site/SP-Novartis-06.pdf for an example of a detailed profile, and visit www.ais.com.es/ingles/productos/derivados.htm#1 for more information on SiRi Pro™.

and environment). For each stakeholder, the database addresses the level of a firm's involvement in four areas: the level of firm's transparency/disclosure, the existence of corporate policies and principles related to the stakeholder, the importance of management procedures, and the level of controversies with respect to this stakeholder. In each of these areas, there are information items that result in a Likert-type scale score. Importantly, each information item is weighted according to a methodology developed by SiRi. These weights are sector-specific and are developed annually: For each sector, SiRi's analysts determine the firm's potential negative impact on each stakeholder and assign weight in proportion to this potential. Firms in the same sector have the same weighting scheme, which differs from the system used by firms in other sectors. The "environment" is weighted more heavily for energy companies than it is for companies in the financial services industry, for instance. The final score provided by SiRi is the sum of each of the scores of the 199 items averaged by its corresponding weight and is rated on a scale from 0 (worst) to 100 (best).

We complement these data on corporate responsibility with financial data from 2001-2005 extracted from COMPUSTAT Global Vantage. This information allowed us to construct an incomplete panel data set for 599 companies of 28 different countries.

Measures

Corporate responsibility performance **(CRP).** SiRi PRO^{TM} rating is used in the present research to measure CRP. In addition to providing a final overall rating, the database provides a score for each stakeholder. This score, with values between 0 and 100, is the weighted sum of all information items corresponding to a given stakeholder, normalizing the weights by the sum of all the weights for that stakeholder. Consistent with previous studies (e.g., Hillman and Keim, 2001), we considered five stakeholder groups: employees, customers, suppliers, community, and environment. We, therefore

measure *corporate responsibility performance* as the weighted sum of scores of these five stakeholder groups, using the corresponding SiRi weights averaged by sector and country. Note that these dimensions are similar to those of the KLD data, which have often been used for research (Turban and Greening, 1997).

Although the SiRi and KLD databases both include a multidimensional appraisal of firm responsibility performance, we believe that the SiRi measure of CRP provides answers to the aggregation problems underlined by Graafland *et al.* (2004), Griffin and Mahon (1997), and Rowley and Berman (2000). The problems they identified are threefold: 1) Individual dimensions of CRP are sometimes uncorrelated, which makes the aggregation of dimensions unrepresentative of a latent variable. Our data do not present this problem, given that, for example, the Pearson's correlations for 2003 among the five stakeholders' scores ranged from 0.34 to 0.73, all significant at $p < .001$. 2) Companies in different sectors are subject to different circumstances, so would be likely to treat their stakeholders differentially. As explained, our measure tackles this problem because it uses sector-specific weights to correct for the different contexts of companies. 3) Another source of criticism is the treatment of ordinal measures of CRP, such as the KLD index, as cardinal. Graafland *et al.* (2004) have suggested a solution to this problem that relies on the judgment of a third party (NGOs in their case) to weight all dimensions of CRP, and then compute the weighting average of these dimension scores to generate a value of CRP. This is precisely the methodology applied to SiRi's CRP measure with weights that rely on the judgment of experts. The outcome is an index close to a cardinal measure, as it can take any value between 0 and 100.

***Corporate financial performance* (CFP).** We use Tobin's *q*, defined as firm market value per dollar of replacement costs of tangible assets. We proxied the *q* by dividing the sum of firm equity value, book value of long-term debt, and net current

liabilities by book value of inventories and property, plant and equipment (see Chung and Pruitt 1995). This approximation has been used by Dowell *et al.* (2000) and King and Lenox (2002), who emphasized the advantages of Tobin's q over accounting measures, primarily stressing its ability to capture the value of long-term investments such as those in intangible resources (Dowell *et al.*, 2000).

Intangible resources. For a firm's intangible resources, we used measures of innovation resources, stock of human capital, reputation and organizational culture.

Innovation. The *innovation resources* measure is the widely used ratio of R&D expenses to firm's total number of employees. This measure is "less sensitive to the spurious effects of business cycles, accounting manipulations, and asset sales than R&D spending as a proportion of sales" (Baysinger *et al.*, 1991: 207). This ratio has been found to be positively related to patents and product innovations (Hitt *et al.*, 1997).

Human capital. Coff (1997) suggested that a firm may achieve sustainable competitive advantage from human assets if it is able to develop the strategies of retention, rent sharing, organizational design, and information. In turn, these strategies are supported by several human resources practices: measurement of job satisfaction, training programs, profit-sharing programs, employee participation, and the introduction of indicators to seek information about employees. We therefore measure human capital using 7 items provided by SiRi that approximate these practices – items that measure: 1) the degree of employee satisfaction in comparison with the industry average, 2) the commitment of a firm for achieving employee satisfaction through frequency of conducting satisfaction surveys and delegation of these surveys to an external party, 3) the extent to which the company offers its employees training programs for improving their task efficiency, 4) the existence and importance of employee share ownership plans, 5) the percentage of total workforce to which profit sharing plans are in place, 6) the existence of participative management programs and the importance of these programs

(percentage of workers affected by the program), and 7) the existence of employment indicators related to training, illness, accidents, fines/penalties, and diversity, and the total workforce affected by these indicators. SiRi analysts rated all these items in a 5-point Likert scale. Cronbach's alpha for this composite measure is 0.7118.

Reputation. High brand recognition, a price premium, and high level of repeat buying are indicators of good *corporate reputation* (Grant, 1995). Satisfied customers will improve a firm's reputation by their loyalty and repeat purchases. Thus, the supply of high-quality products and/or information to customers as well as the avoidance of activities that customers deem unacceptable (Fombrun and Shanley, 1990) can be viewed as a proxy for firm reputation. Therefore, we approach corporate reputation with five items of SiRi database: 1) the existence and importance of a formal policy statement on quality or customer satisfaction, 2) the existence and importance of programs to improve quality or customer satisfaction, 3) the extent to which the firm supplies information on customer issues in its annual report, 4) the existence and importance of controversies about the safety of products and services (reverse scale), and 5) the importance of anti-competitive practices to misuse the firm's market position or to harm competition (reverse scale).[3] All these items are expressed in 3-point Likert scales, and the resulting Cronbach's alpha for corporate reputation is 0.7030.

Organizational culture is a system of core values that define the ways in which managers conduct business (Barney, 1986; Denison, 1990). In identifying these core values, preference has been given in the literature to those values related to the treatment

[3] Corporate reputation is a broad concept that embraces several dimensions, in addition to quality of products and customer satisfaction. For example, *Fortune's* reputational index, which has been widely used in previous research (e.g., Fombrun and Shanley, 1990), includes variables such as innovation, financial soundness, social responsibility, human resources management, and use of physical assets. As all these variables are incorporated into our model, we did not include them as proxies for reputation, in order to avoid the econometric problems of multicollinearity and endogeneity in the estimations.

of employees (Barney, 1986: 656). However, Jones *et al.* (2007) argue that the ethical roots of organizational cultures should also contemplate other stakeholder groups. Building on this, we approach a firm's culture in terms of central values of diversity and safety – and working conditions in general – as well as the ethical values on aggregate. More specifically, we measure organizational culture using seven items provided by the SiRi database – the existence and importance of: 1) a formal policy covering business ethics issues; 2) a formal employee policy statement on health and safety; 3) a formal policy statement on diversity/employment equity; 4) a formal policy statement on freedom of association/collective bargaining; 5) a formal policy statement on child/forced labor; 6) a formal policy statement on working hours; and 7) a formal policy statement on wages. Each of these items is rated in a 4-point Likert scale. Cronbach's alpha for this measure is 0.7033.

Tangible resources. The management and development of intangible resources is also conditioned by a firm's tangible assets. Thus, we control for tangible resources, such as physical assets, leverage, and financial resources, in order to isolate the specific effects of intangibles on both CRP and CFP performance variables.

Physical resources are measured through capital intensity, which is the ratio of total assets minus current assets divided by total assets (Russo and Fouts, 1997) that captures the proportion of "permanent assets". Russo and Fouts (1997) obtained a negative effect of this variable on CFP. This effect can be justified because physical assets hinder radical changes on several responsible policies that may boost CFP

We measure *financial resources* using the cash-flow-to-revenues ratio, which approximates the firm's liquidity (Griffin and Mahon, 1997). We hypothesize that the higher the firm's liquidity, the greater the opportunity to invest in new projects that may have a positive social and financial outcome. We complement this with a variable of external financing, *Leverage*, which is approached through the debt-to-equity ratio

defined as the accounting value of total debt to the accounting value of equity (Roberts, 1992; Waddock and Graves, 1997a). Roberts (1992: 602-603) suggested that the higher the value of this ratio, the greater the degree to which management will give salience (i.e., preferential attention) to one particular group of stakeholders – creditors – at the expense of other stakeholders. Consequently, we expect a negative effect of leverage on CRP. Additionally, the impact of leverage on CFP depends on whether or not the positive effect of the reduction in discretionary free-cash flows dominates the negative effect on the conflicts of interest between shareholders and debtholders (Jensen, 1986).

Control variables. In addition to tangible resources, we controlled for size, risk, industry, country, and year. Size is recognized as a determinant of social and financial performance (Ullman, 1985). We approach this variable by the logarithm of the number of employees (e.g., Waddock and Graves, 1997a). Risk and industry have been suggested as factors that affect both social and financial performances (e.g., Waddock and Graves, 1997a). Firm *risk* is measured with the firm's beta (e.g., Hillman and Keim, 2001) reported in Global Vantage. To control for industry, country and year, we calculate for each firm the mean value of the dependent performance variable for the corresponding sector (we adopted the 4-digit SIC code classification of Waddock and Graves, 1997a), country and year, excluding the focal firm from this calculation. [4]

Analysis

Our mediation hypotheses were tested using an adaptation of the method outlined by Baron and Kenny (1986). The technical details of our approach are shown in the Appendix. Originally, Baron and Kenny's method consists of the estimation of three regression models. In the case of our Hypothesis 1a, the first model to be estimated

[4] The different percentages by sector are comparable to the work of Waddock and Graves (1997a). Remarkably, the results found are robust once we exclude those sectors with the lower number of firms (14). Also, the results of Table 3 hold once we exclude the sector with the largest number of firms (122).

(Model 1A in the Appendix) regresses each of the intangibles (*innovation; human capital*; *reputation*, and *culture*) in terms of CRP, tangible resources, and controls. The second model (Model 2A in the Appendix) estimates CFP in terms of CRP and controls. The last equation to be estimated (Model 3A in the Appendix) is the complete model, which regresses the dependent variable on the main independent variable (CRP), the mediator (intangibles), and the rest of independent variables (tangible resources) and controls.

Regarding our Hypothesis 1a, three conditions must hold in order to establish mediation: 1) CRP must affect intangibles in Model 1A, 2) CRP must affect CFP in Model 2A, and 3) intangibles must affect CFP in Model 3A. Then, perfect mediation holds if the coefficient of CRP, initially significant in Model 2A, turns out to be nonsignificant when intangible variables are included in the regression equation (Model 3A). Our estimating equations for testing Hypothesis 1b are formally equivalent to Models 1A, 2A and 3A but interchanging CFP and CRP in all three models. The resulting models are denoted by 1B, 2B, and 3B.

Our adaptation of the Baron and Kenny's method consists of refining the estimation of the complete models (Models 3A and 3B) by implementing a two-stage strategy. In the first stage, we construct instruments of the performance variables by detracting from these variables the effect due to intangibles. In the second stage, we estimate the complete models using such instruments in order to test the existence of direct effects between the performance variables (Models 3A* and 3B*). This estimation strategy has, in our opinion, the advantage of tackling problems of measurement error, multicollinearity, and endogeneity. The use of the residuals avoids an overestimation of the effect of the main independent variable, as we have extracted from each performance measure the effect due to intangibles. Also, by construction, the residuals of performance will have low correlation with the variables of intangibles, thus, preventing

multicollinearity problems. Additionally, we tackle the existence of a potential endogeneity problem between both performance measures by lagging the corresponding independent performance variable by one period (see, e.g., Waddock and Graves, 1997a) and by using differences in the estimations to eliminate all the observable heterogeneity that would bias the results (fixed-effect estimations). Finally, the use of residuals in the variables of performance also tackles the possible endogeneity of the variables of intangibles in explaining a firm's performance.

Finally, our Hypothesis 2 holds if the aforementioned conditions are satisfied for the subsample of higher-growth sectors, which are defined as those in which the average rate of increase in sales is larger than the overall yearly average for all sectors in the corresponding country (Russo and Fouts, 1997).

RESULTS

Table 1 reports means, standard deviations, and correlations among all variables used in the study. Examining the variance inflation factors (VIF), we have found no multicollinearity problems in the data, as VIF values are far from surpassing the critical threshold of 10. To control for industry influences, correlations are computed using industry-adjusted measures of each variable by subtracting industry averages from each firm's variable, calculated by excluding the focal firm. Analysis of the correlation matrix showed initial evidence of the positive relationship between CFP and CRP ($p < .05$). Also, in Table 1, we observe that financial performance is positively related to innovation resources ($p < .01$), reputation ($p < .01$), and culture ($p < .10$), whereas CRP is positively related to all intangibles (all at $p < .01$, except innovation at $p < .05$). These results, consistent with Orlitzky et al. (2003), suggest that there is a connection between CFP and CRP when we do not control for intangible resources. We have also found that the intangible resources are positively correlated with both dimensions of performance.

Insert Table 1 about here

Table 2 shows the results of a two-step regression analysis for the entire sample and Table 3 focuses on the subsample of firms in growth sectors.

Mediation of intangibles in the instrumental approach. In Models 1A (available upon request), we find that CRP positively influences innovation ($p < .05$), human capital ($p < .01$), and culture ($p < .05$). Furthermore, as shown in Table 2, CRP is positively and significantly related to CFP ($p < .05$). This latter relationship vanishes, however, when we include intangibles as additional explanatory variables and use the residual of CFP as an instrument. Specifically, Model 3A* demonstrates that innovation resources ($p < .01$), reputation ($p < .01$) and culture ($p < .10$) are positively and significantly related to a firm's financial performance, whereas CRP is not ($p > .10$). Taken together these results indicate that innovation, reputation, and culture mediate the relationship between CRP and CFP, providing support for Hypothesis 1a.

Mediation of intangibles in the slack resources approach. An examination of the results of Models 1B (available upon request) indicates that CFP has a positive effect on innovation ($p < .01$), human capital ($p < .05$), reputation ($p < .01$) and culture ($p < .05$). Results provided in Table 2 (Model 2B) indicate that CFP has a positive and significant impact on CRP ($p < .01$). When the supposed mediating variables (intangibles) are included in the regression equation (Model 3B*), we find that CFP has no effect on CRP ($p > .10$); whereas innovation resources ($p < .01$), human capital ($p < .01$), and culture ($p < .01$) enhance CRP. Combining these results, we argue that these intangible resources mediate the relationship from CFP to CRP, supporting Hypothesis 1b. These findings illustrate the fully mediating role that intangibles play in both directions. When they are included in the estimations, any statistically significant

relationship between CRP and CFP is no longer significant. These results yield support for our Hypothesis 1c.

Inspection of other variables (Models 3A* and 3B*) shows that financial performance increases with financial resources (e.g., Hillman and Keim, 2001), and decreases with physical resources (e.g. Russo and Fouts, 1997) and size (e.g., Hillman and Keim, 2001); whereas financial resources and size improve CRP (McGuire *et al.*, 1988).

Insert Table 2 about here

Mediation of intangibles in growth sectors. In unreported estimations (available upon request), we find that CRP is positively and significantly related to innovation resources ($p < .01$) and human capital ($p < .01$); whereas CFP explains innovation ($p < .05$) and reputation ($p < .01$). An examination of Table 3 shows that, once again, CFP and CRP appear to be significantly related in both directions when the intangibles are not included in the equation ($p < .05$ when CFP is the dependent variable in Model 2A, and $p < .01$ when CRP is the dependent variable in Model 2B). When intangibles are included, we find that innovation and reputation positively influence CFP (both at $p < .01$; Model 3A*). For CRP (Model 3B*), this relationship is explained in terms of innovation resources ($p < .05$) and human capital ($p < .01$). Importantly, with the inclusion of intangibles, the residual of CRP is not significantly related ($p > .10$) to CFP (Model 3A*). Furthermore, the residual of CFP has no significantly positive effect ($p > .10$) on CRP (Model 3B*). Hence, we find support for Hypothesis 2, as the lack of a direct relationship between the performance variables due to the mediation of intangibles holds for firms in growth sectors.

Insert Table 3 about here

DISCUSSION AND CONCLUSIONS

In this paper we have investigated the connection between corporate responsibility performance (CRP) and corporate financial performance (CFP), exploring the role that intangibles play in mediating that relationship. This is an important issue for both management researchers and practitioners. Although two recent meta-studies (Orlitzky *et al.*, 2003; Margolis and Walsh, 2003) have suggested that the CRP-CFP relationship is positive, many researchers still claim that further work is needed in this area in order to clarify the direction of causality, the omitted variables that intervene in the CRP-CFP linkage, or the way in which financial and responsibility performance should be operationalized. Hence, the debate is open and new models that give responses to these concerns are needed to investigate adequately the connection between CRP and CFP (Margolis and Walsh, 2001). This research provides an explanation of the CRP-CFP interface by analyzing the role of intangible resources.

Intangibles and Performance

We argue that past research has not adequately considered variables like a firm's intangible resources that intervene in the responsibility and financial performance linkage. Scholars who take a resource-based view have underlined the importance of intangibles as determinants of measures of performance and competitive advantage. In addition, theoretical and empirical arguments developed in this article suggest that (responsibility and financial) high-performing firms are more able than low-performing firms are to develop intangibles such as innovation, human capital, reputation, and culture. Based upon these arguments, we hypothesized that intangible resources mediate the relationship between CFP and CRP in both directions, giving rise to a *virtuous circle* that moves back and forth from CRP to CFP through investments in intangibles resources.

To test this hypothesis, we used a unique database. The SiRi Pro™ database allowed us to construct an index of corporate responsibility performance with clear advantages over other options. In particular, it provides a multidimensional appraisal of firm responsibility performance; and its weighting scheme makes SiRi's CRP scores close to cardinal measures facilitating comparisons among companies of different sectors. Concerning the econometric approach, we used a two-stage estimation that corrects for endogeneity concerns as well as for spurious correlations between both performance variables.

Proceeding in this way, we have found that CRP stimulates the development of intangible resources related to technology, human resources, reputation and culture, which leads, in turn, to improved financial outcomes. Our empirical evidence also supports the opposite conclusion – that better CFP leads firms to invest the available resources in intangibles that positively contribute to enhancing stakeholder satisfaction. We interpret these findings in terms of a *virtuous* circle, in which any increase in one type of performance is translated into an improvement on the other type of performance if and only if new intangibles are developed. Hence, there is no direct relationship between CRP and CFP – merely an indirect relationship mediated by a firm's intangible resources. Finally, we have found support for the mediation hypothesis in growth sectors, where some scholars (e.g., Russo and Fouts, 1997) expected a stronger direct linkage from CRP to CFP. This finding provides further robustness to our results.

Our model may provide plausible explanations for the wide range of results found in the previous literature. Some authors have attributed that dispersion of results to a mismatch between CRP measurement and CFP (Wood and Jones, 1995). We developed here an alternative explanation based on failures in the specification of research models. It is, therefore, likely that the positive connection between variations of CFP and CRP in previous studies may be spurious, and simply a result of variations in intangible

resources. Our model also explains neutral or negative relationships between CRP and CFP found in the literature. This may be the case when better performance does not contribute to developing intangible resources (neutral association) or, worse, when better performance destroys them (negative association). For example, avoiding controversial activities (e.g., alcohol, tobacco, or gambling) improves stakeholder satisfaction; however, they do not create new competences and may adversely affect the firm's ability to compete (Hillman and Keim, 2001). In such a case, as Hillman and Keim (2001) found, estimating the association between CRP and CFP without controlling for the mediating role of intangibles leads to a negative association.

Taken together, these results reinforce RBV theories of the firm, particularly, findings associated with intangible resources that can be applied to explain not only differentials in financial performance but also in CRP. Furthermore, we contributed to an explanation about the way intangibles are created and developed. Specifically, we found that corporate financial and responsibility performance are important determinants of such creation – that investing in responsible activities has important consequences for employee motivation and morale, and that it is instrumental in creating high-commitment and loyalty cultures. Also, by implementing environmentally-friendly initiatives, firms may discover sources of inefficiency, which can facilitate process innovation and/or update products.

In addition, this research enriches the literature on stakeholder theory. We posit that stakeholder management alone is not a means for achieving success in the marketplace; and conversely, better financial performance does not, in itself, lead to better social performance. It is the development of specific stakeholder-related intangible resources (e.g., innovation resources, human resources, and organizational resources such as reputation and culture) that is the key factor in improving both financial and responsibility performance. Improvement in CRP that is not connected

with the development of intangible resources has no effect on CFP. Conversely, spending slack resources available from good financial performance in responsible activities does not increases stakeholders' satisfaction unless the slack results in improved intangibles.

Implications

Our study has several important implications for practitioners and scholars alike. We suggest that managers should turn their attention to the efficient management of a firm's intangible resources, particularly its innovation, human capital, reputation, and culture, which, as RBV argues, are difficult for competitors to match. Then, the first prescription for managers to improve stakeholder satisfaction is to invest slack resources in responsible activities – specifically in those activities that improve a firm's intangibles resources. Programs to improve organization culture that generate greater loyalty and social capital among employees and human resources management practices that increase the attractiveness of a job and improve the satisfaction and morale of employees that will facilitate product and process innovation while providing greater external reputation are critical factors toward which investments should be placed. Notably, these are all are positive stakeholder-related activities. Many current corporate practices focus on downsizing to save money and enhance profits – and in the process they destroy employee loyalty and corporate culture, and negatively affect external reputation and internal innovations. This research suggests that the opposite strategy of enhancing investments in those factors would ultimately be more effective.

As a second prescription, managers must learn that markets value companies with high responsibility ratings if they accompany such activities with investments that develop technological, human, reputational, and cultural competences. Intangibles are, therefore, the key elements that allow the *virtuous* circle of value creation to work. There seem to be serious negative consequences from disinvestments in intangibles that affect a

wide array of critical stakeholders concerned about such variables as product innovation (customers), environmental and other process innovations (customers, some investors), corporate culture (employees) and overall reputation (investors and activists), which so characterize many companies today.

These results also have implications for incentive setting, given that directors' interests are not always oriented toward the adequate management of intangibles. Indeed, large slack resources allow managers to enjoy perks. Furthermore, generous social concessions to stakeholders may facilitate managerial entrenchment; hence, an adequate incentive scheme should avoid such problems while aligning the interests of managers with investments in company-specific intangibles, in order for the *virtuous* circle to work. Based on the results demonstrating that both responsibility and financial performances are linked to resource management, the prescription is therefore to link managerial compensation to both CFP and CRP. This proposal is not free of criticism, however. Implementing such a design requires good measures of responsibility performance in order to compensate adequately those managerial efforts favoring stakeholder-related activities (Tirole, 2001). We believe that measures like the SiRi score may soon tackle this problem.

For scholars, this study emphasizes the importance of including intangible strategic variables such as innovation, human resources, reputation, and culture in studies of corporate performance in order to evaluate correctly the linkages between responsibility and financial performance. Failure to control for these intangibles may explain some of the mixed findings that have occurred in the past. This study suggests that there is no direct relationship between both CRP and CFP – only an indirect relationship explained by their mutual connection to intangibles – but that overall attention to critical stakeholder issues related to innovation, employees, reputation, and

organization culture contrary to being the "soft stuff" with no effect on performance, are actually the keys to successful performance on both types of measures.

Limitations and Future Research

To qualify these conclusions, we must recognize some weaknesses in our study. First, although we believe that the SiRi database improves the measurement of CRP, it is not free from criticism. For example, the SiRi CRP index aggregates multiple social dimensions with no theoretical basis for assuming that they are correlated (Griffin and Mahon, 1997; Waddock and Graves, 1997a; Rowley and Berman, 2000). Another limitation is the way we have measured some of the intangible resources. For example, several scholars have measured culture through the Organizational Culture Profile (O'Reilly *et al.*, 1991), or innovation resources by means of patents, number of product/process innovations, or number of scientists – although recently Hitt *et al.* (1997) have demonstrated that R&D intensity is positively related to these other proxies. Furthermore, our research model has not considered the possibility that other type of variables could intervene in the associations among CRP, intangibles, and CFP. For example, it is possible that the general business environment (e.g., uncertainty, complexity, and munificence; Aragón-Correa and Sharma, 2003) moderates the causal links among our model variables. Finally, we have not explored the international content of our database. We may expect national differences, given the distinctive top management orientation and differences in institutional settings across countries. An exploration of these issues will be the subject of future research.

REFERENCES

Aragón-Correa JA, Sharma S. 2003. A contingent resource-based view of proactive corporate environmental strategy. *Academy of Management Review* **28**(1): 71-88.

Aupperle K, Carroll A, Hatfield J. 1985. An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal* **28**(2): 446-63.

Bansal P. 2005. Evolving sustainably: a longitudinal study of corporate sustainable development. *Strategic Management Journal* **26**(3): 197-218.

Bansal P, Hunter T. 2003. Strategic explanations for the early adoption of ISO 14001. *Journal of Business Ethics* **46**(3): 289-299.

Bansal P, Roth K. 2000. Why companies go green: a model of ecological responsiveness. *Academy of Management Journal* **43**(4): 717-736.

Barnett, ML, Salomon, RM. 2006. Beyond dichotomy: the curvilinear relationship between social responsibility and financial performance. *Strategic Management Journal* **27**: 1101-22.

Barney J. 1986. Organizational culture: can it be a source of sustained competitive advantage. *Academy of Management Review* **11**(3): 656-665.

Barney J. 1991. Firm resources and sustained competitive advantage. *Journal of Management* **17**(1): 771-792.

Baron R, Kenny D. 1986. The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology* **51**: 1173-1182.

Baysinger BD, Kosnik RD, Turk TA. 1991. Effects of board and ownership structure on corporate R&D strategy. *Academy of Management Journal* **34**(1): 205-214.

Berman S, Wicks A, Kotha S, Jones T. 1999. Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance. *Academy of Management Journal* **42**(5): 488-506.

Brammer SJ, Pavelin S. 2006. Corporate reputation and social performance: the importance of fit. *Journal of Management Studies* **43**(3): 435-455.

Carmeli A. 2004. The link between organizational elements, perceived external prestige and performance. *Corporate Reputation Review* **6**(4): 314-331.

Carmeli A, Freund A. 2002. The relationship between work and workplace attitudes and perceived external prestige. *Corporate Reputation Review* **5**(1): 51-68.

Carroll AB. 1979. A three-dimensional conceptual model of corporate social performance. *Academy of Management Review* **4**(1): 497-505.

Castelo M, Lima L. 2006. Corporate social responsibility and resource-based perspectives. *Journal of Business Ethics* **69**: 111-132.

Chatman JA, Jehn KA. 1994. Assessing the relationship between industry characteristics and organizational culture: how different can you be? *Academy of Management Journal* **37**(3): 522-553.

Chung, KH, and Pruitt, SW. 1995. A simple approximation of Tobin's q. *Financial Management* **23**(3): 70-79.

Coff RW. 1997. Human assets and management dilemmas: coping with hazards on the road to resource-based theory. *Academy of Management Review* **22**(2): 374-402.

Denison DR. 1990. Corporate culture and organizational effectiveness. J. Wiley and Sons: NY.

Denison DR, Mishra AK. 1995. Toward a theory of organizational culture and effectiveness. *Organization Science* **6**(2): 204-223.

Déniz M, De Sáa P. 2003. A resource-based view of corporate responsiveness toward employees. *Organization Studies* **24**(2): 299-319.

Dierickx I, Cool K. 1989. Asset stock accumulation and sustainability of competitive advantage. *Management Science* **35**: 1504-1511.

Donaldson TL, Preston LE. 1995. The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review* **20**(1): 65-91.

Dowell G, Hart S, Yeung B. 2000. Do Corporate Global Environmental Standards Create or Destroy Market Value? *Management science* **46**(8): 1059-1074.

Fombrun C, Gardberg N, Barnett M. 2000. Opportunity platforms and safety nets: corporate citizenship and reputational risk. *Business and Society Review* **105**(1): 85-106.

Fombrun C, Shanley M. 1990. What's in a name? Reputation building and corporate strategy. *Academy of Management Journal* **33**(2): 233-258.

Freeman RE. 1984. *Strategic management: a stakeholder approach*. Pitman: Boston, MA.

Gardberg NA, Fombrun CJ. 2006. Corporate citizenship: creating intangible assets across institutional environments. *Academy of Management Review* **31**(2): 329-346.

Goll I, Rasheed AA. 2004. The moderating effect of environmental munificence and dynamism on the relationship between discretionary social responsibility and firm performance. *Journal of Business Ethics* **49**: 41-54.

Gomez-Mejia LR, Balkin DB. 2002. *Management*. McGraw-Hill: New York, NY.

Graafland JJ, Eijffinger SCW, Smid H. 2004. Benchmarking of corporate social responsibility: methodological problems and robustness. *Journal of Business Ethics* **53**: 137-152.

Grant RM. 1991. The resource-based theory of competitive advantage. *California Management Review* **33**(3): 114-135.

Grant RM. 1995. *Contemporary strategic analysis: concepts, techniques, applications*. Blackwell: Cambridge, MA.

Greening DW, Turban DB. 2000. Corporate social performance as a competitive advantage in attracting a quality workforce. *Business and Society* **39**(3): 254-280.

Greenley GE, Foxall GR. 1997. Multiple stakeholder orientation in UK companies and the implications for company performance. *Journal of Management Studies* **34**(2): 259-284.

Griffin JJ, Mahon JF. 1997. The corporate social performance and corporate financial performance debate. Twenty-five years of incomparable research. *Business and Society* **36**(1): 5-31.

Hart SL. 1995. A natural resource-based view of the firm. *Academy of Management Review* **20**(4): 986-1014.

Hatch, NW, Dyer, JH. 2004. Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal* **25**(12): 1155-1178.

Helfat C. 1997. Know-how and asset complementarity and dynamic capability accumulation: the case of R&D. *Strategic Management Journal* **18**: 339-360.

Hemingway CA, Maclagan PW. 2004. Managers' personal values as drivers of corporate social responsibility. *Journal of Business Ethics* **50**(1): 33-44.

Hillman AJ, Keim GD. 2001. Shareholder value, stakeholder management, and social issues: what's the bottom line? *Strategic Management Journal* **22**(2): 125-139.

Hitt MA, Hoskisson RE, Kim H. 1997. International diversification: effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal* **40**(4): 767-8.

Jawahar IM, McLaughlin GL. 2001. Toward a descriptive stakeholder theory: an organizational life cycle approach. *Academy of Management Review* **26**(3): 397-414.

Jensen MC. 1986. Agency costs of free cash flow, corporate finance, and ownership structure. *American Economic Review* **76**: 323-329.

Jones TM. 1995. Instrumental stakeholder theory: a synthesis of ethics and economics. *Academy of Management Review* **20**(2): 404-437.

Jones TM, Felps W, Bigley GA. 2007. Ethical theory and stakeholder-related decisions: the role of stakeholder culture. *Academy of Management Review* **32**(1): 137-155.

Kassinis G, Vafeas N. 2002. Corporate boards and outside stakeholders as determinants of environmental litigation. *Strategic Management Journal* **23**: 399-415.

King A, Lenox M. 2002. Exploring the locus of profitable pollution reduction. *Management Science* **48**(2): 289-299.

Klassen RD, Whybark DC. 1999. The impact of environmental technologies on manufacturing performance. *Academy of Management Journal* 42(6): 599-615.

Kraft K, Hage J. 1990. Strategy, social responsibility and implementation. *Journal of Business Ethics* **9**(1): 11-19.

Litz RA. 1996. A resource-based-view of the socially responsible firm: stakeholder interdependence, ethical awareness, and issue responsiveness as strategic assets. *Journal of Business Ethics* **15**(12): 1355-1363.

Margolis JD, Walsh JP. 2003. Misery loves companies: rethinking social initiatives by business. *Administrative Science Quarterly* **48**(2): 268-305.

McGuire JB, Sundgren A, Schneeweis T. 1988. Corporate social responsibility and firm financial performance. *Academy of Management Journal* **31**(4): 854–872.

McWilliams A, Siegel D. 2000. Corporate social responsibility and financial performance: correlation or misspecification? *Strategic Management Journal* **21**(5): 603-609.

McWilliams A, Siegel D. 2001. Corporate social responsibility: a theory of the firm perspective. *Academy of Management Review* **26**(1): 117-127.

Nohria N, Gulati R. 1996. Is slack good or bad for innovation? *Academy of Management Journal* **39**(5): 1245-1264.

O'Reilly CA, Chatman J, Caldwell DF. 1991. People and organizational culture: a profile comparison approach to assessing person-environment fit. *Academy of Management journal* **34**(3): 487-516.

Orlitzky M, Schmidt FL, Rynes SL. 2003. Corporate social and financial performance: a meta-analysis. *Organization Studies* **24**(3): 403-441.

Pfeffer J. 1994. *Competitive advantage through people: unleashing the power of the work force*. Harvard Business School Press: Boston, MA.

Pfeffer J, Veiga JF. 1999. Putting people first for organizational success. *Academy of Management Executive* **13**(2): 37-48.

Preston L, Sapienza H, Millar R. 1991. Stakeholders, stockholders, managers: who gain what from corporate governance? In *Socio-economics: toward a new synthesis*, Etzioni A, Lawrence P (eds). ME Sharpe: Armonk, London; 149-166.

Richard OC. 2000. Racial diversity, business strategy, and firm performance: a resource-based view. *Academy of Management Journal* **43**(2): 164-177.

Roberts PW, Dowling GR. 2002. Corporate reputation and sustained superior financial performance. *Strategic Management Journal* **23**: 1077-1093.

Roberts R. 1992. Determinants of corporate social responsibility disclosure: an application of stakeholder theory. *Accounting, Organizations and Society* **17**(6): 595-612.

Roman RM, Hayibor S, Agle BR. 1999. The relationship between social and financial performance. *Business and Society* **38**(1): 109-125.

Rowley T, Berman S. 2000. A brand new brand of corporate social performance. *Business and Society* **39**(4): 397-418.

Russo MV, Fouts PA. 1997. A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal* **40**(3): 534-559.

Russo MV, Harrison NS. 2005. Organizational design and environmental performance: clues from the electronics industry. *Academy of Management Journal* **48**(4): 582-593.

Sanchez P, Chaminade C, Olea M. 2000. Management of intangibles: an attempt to build theory. *Journal of Intellectual Capital* **1**(4): 312-327.

Schuler DA, Cording M. 2006. A corporate social performance–corporate financial performance behavioral model for consumers. *Academy of Management Review* **31**(3): 540-558.

Selznick P. 1996. Institutionalism "old" and "new". *Administrative Science Quarterly* **41**: 270-7.

Sharma S, Vredenburg H. 1998. Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal* **19**: 729-753.

Tamar A, Hashai, N. 2004. The competitive advantage and strategic configuration of knowledge-intensive, small- and medium-sized multinationals: a modified resource-based view. *Journal of International Management* **10**(4): 479-500.

Tirole J. 2001. Corporate governance. *Econometrica* **69**(1): 1-35.

Treviño LK. 1990. A cultural perspective on changing and developing organizational ethics. In *Research in Organizational Change and Development*, Pasmore WA, Woodman RW (eds.). UAI Press: Greenwich, CT; 195-230.

Turban DB, Greening DW. 1997. Corporate social performance and organizational attractiveness. *Academy of Management Journal* **40**(3): 658-672.

Ullman A. 1985. Data in search of a theory: a critical examination of the relationship among social performance, social disclosure and economic performance of U.S. firms. *Academy of Management Review* **10**(1/2): 540-557.

Waddock SA. 2004. Parallel universes: companies, academics, and the progress of corporate citizenship. *Business and Society Review* **109**(1): 5-42.

Waddock SA, Graves SB. 1997a. The corporate social performance-financial performance link. *Strategic Management Journal* **18**(4): 303-319.

Waddock SA, Graves SB. 1997b. Quality of management and quality of stakeholder relations. *Business & Society* **36**(3): 250-279.

Wernerfelt B. 1984. A resource-based view of the firm. *Strategic Management Journal* **5**: 171-180.

Wood DJ. 1994. *Business and society*. HarperCollins: New York.

Wood DJ, Jones RE. 1995. Stakeholder mismatching: a theoretical problem in empirical research on corporate social performance. *International Journal of Organizational Analysis* **3**(3): 229-267.

Wright PM, Gardner TM, Moynihan LM, Allen MR. 2005. The relationship between HR practices and firm performance: examining the causal order. *Personnel Psychology* **58**(2): 409-446.

Appendix

The method outlined by Baron and Kenny (1986) requires the estimation of the following three regression models:

$$\begin{aligned} Intangible_{it} = {} & \alpha^{1A} + \beta_{CRP}^{1A}\left(CRP\right)_{it} + \beta_{PR}^{1A}\left(physical\ resources\right)_{it} + \\ & + \beta_{L}^{1A}\left(leverage\right)_{it} + \beta_{FR}^{1A}\left(financial\ resources\right)_{it} + \beta_{S}^{1A}\left(size\right)_{it} + \\ & + \beta_{Risk}^{1A}\left(risk\right)_{it} + \beta_{mCFP}^{1A}\left(Mean[Intangible]\right)_{it} + \left(\eta^{1A}\right)_{i} + \left(\varepsilon^{1A}\right)_{it} \end{aligned} \quad \textbf{(Model 1A)}$$

$$\begin{aligned} CFP_{it} = {} & \alpha^{2A} + \beta_{CRP}^{2A}\left(CRP\right)_{it-1} + \beta_{PR}^{2A}\left(physical\ resources\right)_{it} + \\ & + \beta_{L}^{2A}\left(leverage\right)_{it} + \beta_{FR}^{2A}\left(financial\ resources\right)_{it} + \beta_{S}^{2A}\left(size\right)_{it} + \\ & + \beta_{Risk}^{2A}\left(risk\right)_{it} + \beta_{mCFP}^{2A}\left(Mean[CFP]\right)_{it} + \left(\eta^{2A}\right)_{i} + \left(\varepsilon^{2A}\right)_{it} \end{aligned} \quad \textbf{(Model 2A)}$$

$$\begin{aligned} CFP_{it} = {} & \alpha^{3A} + \beta_{CRP}^{3A}\left(CRP\right)_{it-1} + \beta_{I}^{3A}\left(innovation\right) + \beta_{HC}^{3A}\left(human\ capital\right)_{it} \\ & + \beta_{R}^{3A}\left(reputation\right)_{it} + \beta_{C}^{3A}\left(culture\right)_{it} + \beta_{PR}^{3A}\left(physical\ resources\right)_{it} \\ & + \beta_{L}^{3A}\left(leverage\right)_{it} + \beta_{FR}^{3A}\left(financial\ resources\right)_{it} + \beta_{S}^{3A}\left(size\right)_{it} + \\ & + \beta_{Risk}^{3A}\left(risk\right)_{it} + \beta_{mCFP}^{3A}\left(Mean[CFP]\right)_{it} + \left(\eta^{3A}\right)_{i} + \left(\varepsilon^{3A}\right)_{it} \end{aligned} \quad \textbf{(Model 3A)}$$

where $Mean[Intangible]$ and $Mean[CFP]$ are the means of each intangible resource and CFP, respectively, for the corresponding sector, year and country, and are calculated excluding the focal firm; η is the fixed-effect term that approaches the unobservable heterogeneity; and ε is a random-noise residual. Importantly, as suggested in previous literature (e.g., Waddock and Graves, 1997a), CRP is lagged one period in order to tackle endogeneity problems.

To establish mediation (Hypothesis 1a), three conditions must hold:

1) $\beta_{CRP}^{1A} > 0$; 2) $\beta_{CRP}^{2A} > 0$; and 3) $\beta_{CRP}^{3A} = 0,\ while\ \beta_{I}^{3A} > 0, \beta_{HC}^{3A} > 0; \beta_{R}^{3A} > 0; \beta_{C}^{3A} > 0$.

Testing Hypothesis 1b if formally equivalent to the above strategy, but replacing CRP by CFP and $Mean[CRP]$ by $Mean[CFP]$.

In estimating mediation models like ours, Baron and Kenny (1986) mentioned that an econometric problem emerges with the estimates of the main independent variable and the mediator, as they are correlated by construction. This problem results in an overestimation of the effect of the main independent variable (CRP in Hypothesis 1a; CFP in Hypothesis 1b) and an underestimation of mediator variables in Models 3A and 3B. A possible solution suggested by these authors is some form of two-stage

estimation or structural modeling procedures (p. 1177). Adopting this idea, we followed a two-stage procedure for refining the estimation of Models 3A and 3B. In the first stage of our procedure, we estimate two equations that correspond to the specifications given in Models 3A and 3B, excluding the main independent variable

$$\begin{aligned} CFP_{it} = {} & \alpha^{4A} + \beta_{HC}^{4A}\left(human\ capital\right)_{it} + \beta_{R}^{4A}\left(reputation\right)_{it} + \beta_{C}^{4A}\left(culture\right)_{it} + \\ & \beta_{I}^{4A}\left(innovation\right) + \beta_{PR}^{4A}\left(physical\ resources\right)_{it} + \beta_{L}^{4A}\left(leverage\right)_{it} + \\ & \beta_{FR}^{4A}\left(financial\ resources\right)_{it} + \beta_{S}^{4A}\left(size\right)_{it} + \beta_{Risk}^{4A}\left(risk\right)_{it} + \\ & \beta_{mCFP}^{4A}\left(Mean[CFP]\right)_{it} + \left(\eta^{4A}\right)_{i} + \left(\varepsilon^{4A}\right)_{it} \end{aligned} \qquad \textbf{(Model 4A)}$$

$$\begin{aligned} CRP_{it} = {} & \alpha^{4B} + \beta_{HC}^{4B}\left(human\ capital\right)_{it} + \beta_{R}^{4B}\left(reputation\right)_{it} + \beta_{C}^{4B}\left(culture\right)_{it} + \\ & \beta_{I}^{4B}\left(innovation\right) + \beta_{PR}^{4B}\left(physical\ resources\right)_{it} + \beta_{L}^{4B}\left(leverage\right)_{it} + \\ & \beta_{FR}^{4B}\left(financial\ resources\right)_{it} + \beta_{S}^{4B}\left(size\right)_{it} + \beta_{Risk}^{4B}\left(risk\right)_{it} + \\ & \beta_{mCRP}^{4B}\left(Mean[CRP]\right)_{it} + \left(\eta^{4B}\right)_{i} + \left(\varepsilon^{4B}\right)_{it} \end{aligned} \qquad \textbf{(Model 4B)}$$

With such coefficients, we compute the following instruments as the part of the performance which is not explained by the intangible resources:

$$Residual\ CFP_{it} = CFP_{it} - \left[\beta_{I}^{4A}\left(innovation\right) + \beta_{HC}^{4A}\left(human\ capital\right)_{it} + \beta_{R}^{4A}\left(reputation\right)_{it} + \beta_{C}^{4A}\left(culture\right)_{it}\right]$$

$$Residual\ CRP_{it} = CRP_{it} - \left[\beta_{I}^{4B}\left(innovation\right) + \beta_{HC}^{4B}\left(human\ capital\right)_{it} + \beta_{R}^{4B}\left(reputation\right)_{it} + \beta_{C}^{4B}\left(culture\right)_{it}\right]$$

In the second stage, we replace CRP and CFP of Models 3A and 3B by their instruments: *Residual CFP* and *Residual CRP*, respectively. Resulting models are denoted by 3A* and 3B*. If we denote as β^{3A^*} and β^{3B^*}, the new coefficients estimated in the second-stage estimation of models 3A* and 3B*, our mediation Hypothesis 1a holds if the three conditions defined above are satisfied but using β^{3A^*} instead of β^{3A} in the third condition. Similarly, to prove the mediation of intangibles in the relationship from CFP to CRP, our Hypothesis 1b, the corresponding three conditions defined above must hold, using β^{3B^*} rather than β^{3B} in the third condition.

Table 1. Means, standard deviations, and Spearman correlations [a]

	Mean	S.D.	VIF	1	2	3	4	5	6	7	8	9	10
Corporate performance													
1. Financial performance	2.45	2.30											
2. Responsibility performance	44.99	12.71	1.26	0.07**									
Intangible resources													
3 Innovation resources	23.56	52.95	1.12	0.28***	0.08**								
4. Human capital	0.06	0.59	1.22	−0.05	0.49***	0.01							
5. Reputation	0.03	0.66	1.04	0.17***	0.09***	0.01	0.00						
6. Culture	1.71	1.05	1.09	0.06*	0.26***	−0.09***	0.03	0.05					
Tangible resources													
7. Physical resources	0.38	0.38	1.19	−0.28***	0.02	−0.08**	0.13***	0.04	0.02				
8. Leverage	21.18	17.52	1.19	−0.12***	−0.02	−0.21***	0.03	0.01	0.04	0.12***			
9. Financial resources	0.09	0.15	1.12	0.05***	0.11***	0.11***	0.12***	−0.11***	0.09**	−0.09***	−0.12***		
Controls													
10. Size	3.48	1.31	1.22	−0.11***	0.13***	−0.25***	0.06	−0.15***	0.02	−0.09***	0.07***	−0.03	
11. Beta	1.08	0.89	1.24	0.09***	−0.04	0.29***	−0.12***	−0.08**	−0.10***	−0.14***	0.01	−0.30***	−0.09***

[a] Obs. = 696. We have considered only firms for which we had information on intangible resources. To control for industry influences, correlations are calculated using industry-adjusted measures of each variable by subtracting industry averages calculated excluding the focal firm, from each firm's variable.

$^{*}p \leq 0.10$; $^{**}p \leq 0.05$; $^{***}p \leq 0.01$.

Table 2. Results of fixed-effects regression analyses: Full sample [a]

	Corporate Financial Performance		Corporate Responsibility Performance	
	MODEL 2A	MODEL 3A*	MODEL 2B	MODEL3B*
Corporate performance				
Financial performance			0.6103***	0.3028
Responsibility performance	0.0141**	0.0149		
Intangible resources				
Innovation resources		0.0294***		0.0862***
Human capital		0.0121		0.1777***
Reputation		0.0398***		−0.0311
Culture		0.0120*		0.0674***
Tangible resources				
Physical resources	−0.2099***	−0.3756***	−0.1299	−0.0811
Leverage	−0.0088	0.0177	0.0545	0.0208
Financial resources	0.0561***	0.0294***	0.0198	0.0438**
Controls				
Size	−0.1720***	−0.0902*	0.2731*	0.4419**
Beta	0.0106	0.0121	0.0270	0.0718
Country, year, and sector	0.0064**	0.0148***	0.1706***	0.2106***
Constant	0.0232***	0.1345***	−0.0324	0.0565
R^2 Within	0.1106	0.3842	0.1160	0.1984
F test	12.17***	22.12***	12.94***	8.78***
Number of observations	1191	696	1204	696

[a] Standardized regression coefficients are shown in the table.

*$p \leq 0.10$; **$p \leq 0.05$; ***$p \leq 0.01$.

Table 3. Results of fixed-effects regression analyses: Growth sectors [a]

	Corporate Financial Performance		Corporate Responsibility Performance	
	MODEL 2A	MODEL 3A*	MODEL 2B	MODEL3B*
Corporate performance				
Financial performance			0.8825***	0.5922
Responsibility performance	0.0206**	0.0024		
Intangible resources				
Innovation resources		0.0259***		0.0874**
Human capital		0.0055		0.1474***
Reputation		0.0297***		−0.0218
Culture		0.0019		0.0451
Tangible resources				
Physical resources	−0.1966**	−0.3353***	−0.0799	−0.1529
Leverage	−0.0159	−0.0108	0.0431	−0.1083
Financial resources	0.0167	0.0331***	−0.0197	0.0499
Controls				
Size	−0.0731	0.0183	0.4088	0.3919
Beta	0.0200*	0.0160	−0.1065	−0.0101
Country, year, and sector	0.0113***	0.0211***	0.2016***	0.2361***
Constant	0.0432***	0.0972***	−0.0125	0.0191
R^2 Within	0.1153	0.4036	0.1732	0.2494
F test	5.23***	9.48***	7.84***	4.65***
Number of observations	744	408	686	408

[a] Standardized regression coefficients are shown in the table. Industry growth is the double-digit annual increase in sales. Growth sectors are defined by comparing the industry growth to the average rate for the corresponding country and year.

*$p \leq 0.10$; **$p \leq 0.05$; ***$p \leq 0.01$.

Figure 1. Research Model