The current issue and full text archive of this journal is available at
www.emeraldinsight.com/1463-5771.htm

Revisiting corporate reputation and firm performance link

Jooh Lee and James Jungbae Roh
Rohrer College of Business, Rowan University, Glassboro, New Jersey, USA

Abstract

Purpose – Corporate reputation is regarded as an intangible asset which differentiates a firm from others and attracts customers to repurchase and willingly pay a premium price for products. However, despite the perceptive association between reputation and financial performance, empirical studies report inconclusive results. The purpose of this study is to investigate this link more comprehensively using four different reputation attributes and firm characteristics in the context of high- vs low-tech companies.

Design/methodology/approach – This study operationalizes the corporate reputation as the four measures of Fortune's "America's Most Admired Companies" of 2008 and matched the companies with financial performance and firm characteristics measures from COMPUSTAT *Research Insight* for the period between 2001 and 2005. A total of 230 firms (108 in high-tech vs 122 in low-tech) over the same period were selected and stepwise multiple regression analysis probed the relationship between the corporate reputation and performance.

Findings – The key finding of this study is that such variables as corporate reputation are significantly and positively related with most indices of corporate performance measures while debt leverage affects profitability negatively. It was surprising to find that innovativeness turned out to have no impact on financial performance in both high- and low-tech firms. The positive association between social responsibility and firm performance appeared to be partially supported because it showed significant impact on market-based performance, but not on accounting-based performance.

Originality/value – This study confirms the resource-based view that a valuable, inimitable, and non-substitutable asset such as corporate reputation leads firms to enhance financial and market performance. However, the effect is contingent on firm characteristics such as firm size, R&D intensity, debt leverage ratio, and capital intensity. Corporate reputation appears to emerge as a critical dimension of benchmarking of a firm performance.

Keywords Corporate reputation, Firm performance, Market structure, High-tech industry, Performance management, Financial performance, United States of America

Paper type Research paper

Introduction

Reputation is a vital component of a company's value and a key measure of performance, functioning as a mechanism which decreases uncertainty for customers and increases marketing effectiveness, customer satisfaction, and customer base (Kotha *et al.*, 2001). Corporate reputation emerges as an intangible asset which differentiates a firm from others and attracts customers to repurchase and willingly pay higher price for products (Eberl and Schwaiger, 2005; Roberts and Dowling, 2002). High reputation serves as a cost saver for firms. Employees desire to work for firms with excellent reputations and the firms are able to recruit and retain a competent work force with less contracting and monitoring costs (Boyd *et al.*, 2010; Bergh *et al.*, 2010; Roberts and Dowling, 2002). Furthermore, a high reputation often lifts a firm to a virtuous cycle, known as halo effect. Reputable firms have an advantage to pursuing an even better reputation via production, branding, and environmental actions. While traditional measures of success

Benchmarking: An International Journal
Vol. 19 No. 4/5, 2012
pp. 649-664

1463-5771
DOI 10.1108/14635771211258061

remain important, non-financial factors such as distinction of quality in product and service, images and branding, social responsibility, leadership, and corporate citizenship have emerged as critical parts of benchmarking (Lai *et al.*, 2010). These non-financial factors account for a significant percentage of a company's value and pave the way for enduring salience in the turbulent business environment. Reputation also plays an integral role in developing and assessing the organization's favorability.

Despite the perceptive association between reputation and financial performance, however, empirical studies have reported inconclusive results surrounding the relationship (Table I). This study attributes such results to three reasons. First, the attributes of reputation encompass diverse aspects of firms. Though previous studies have delved into important dimensions of corporate reputation, explicating multi-facets of reputation proffers the prospect to understand a bigger picture of the link between reputation and performance. Second, corporate reputation has a multidimensional effect on firm performance. Most stakeholders are not only concerned with the financial benefit but also with high-quality intangible assets for sustained superior benchmarking performance. Their reaction directly realizes in the stock market. Sinc short- and long-term oriented performance measures tend to carry different emphases, reputation may be more reflected in one indicator than the other. Third, the context of industry matters. Reputation may count more seriously in high-end technology industry. Technology-oriented firms sustain their reputation through branding images and socio-economic and environmental sustainability and expend much research and development (R&D) and marketing investment.

However, not much attention has been paid to the strategic nexus between corporate reputation and firm performance using diverse performance measures across industry contexts. The main thrust of this study is to explore and determine the direction and magnitudes of the relationships between the key dimensions of corporate reputation and firm performance. Different from previous studies, this research identifies the relative significance of four corporate reputation attributes: overall reputation, quality of products and services, social responsibility, and innovativeness. In addition, this study looks into whether traditional relationships between market structure and performance can be suitably applied to other market environments.

Theory and hypotheses

Theoretical background

Resource-based view (RBV) serves as the underpinning theoretical base of this study. RBV suggests that an intangible asset creates competitive advantage and boosts the bottom line when it is scarce, inimitable, and non-substitutable (Barney, 2000). A firm's excellent reputation surfaces in the repeated and longitudinal comparison against its competitors. This competitive nature makes it uncommon for firms to earn a distinguished reputation. Reputation is hard to copy because of contingent, tacit and organization-specific know-how and practices in earning, maintaining, and improving corporate image; it is a wholesome and yet sophisticated reflection of a firm's activities. Also, reputation is non-substitutable because it is not something that firms can buy or sell but must cultivate and nurture. Such a rare, inimitable, and non-substitutable asset enables a firm to create a competitive advantage conducive to financial performance. Figure 1 shows the research framework that this study aims to address. The extensive body of research has documented the significant links between different components of corporate reputation

Author(s) (date)	Relationship (sign)[a]	Research methodology (sample)	Research framework: Dependent variable (performance)	Research framework: Independent variable (reputation variable)
Aupperle *et al.* (1985)	Neutral (n/a)	Survey and *t*-test (241 executives)	Return on assets (ROA)	Corporate social responsibility orientation
Worrell *et al.* (1991)	Negative (−)	Event study (194 announcements)	Security price reaction	Announcements of layoffs
Klassen and McLaughlin (1996)	Positive returns (+)	Event study (archival data analysis)	Stock price reaction	Announcements regarding environmental award or crisis
Teoh *et al.* (1999)	Neutral (n/a)	Event study	Stock price reaction	Involvement of the set of boycott-targeted US firms
McWilliams and Siegel (2000)	Neutral (n/a)	Regression (524 firms)	Financial performance (accounting profits)	Corporate social performance from Domini 400 social index
Kotha *et al.* (2001)	Positive (+)	Regression analysis (41 pure internet firms)	Market value, sales growth	Reputation building activities
Roberts and Dowling (2002)	Positive (+)	Regression (149 firms)	Market return and return on sales	Average reputation score from Fortune reputation data
Rose and Thomsen (2004)	Neutral (n/a)	Regression (62 Danish firms)	Market-to-book value of equity	Corporate images in ten criteria
Wagner and Schaltegger (2004)	Negative (−)	Survey and regression analysis (135 UK and 166 German firms)	Economic performance	Environmental strategy, environmental performance
Eberl and Schwaiger (2005)	Positive (+)	Regression (30 large German firms)	Net income after tax and depreciation	Organizational competence and sympathy
Inglis *et al.* (2006)	Neutral (n/a)	Regression (77 Australian companies)	ROA, return on equity (ROE), return on invested capital	Corporate image (composite scores of four dimensions)
Jacobs *et al.* (2010)	Inconsistent pattern (?)	Event study (363 environmental awards)	Stock market reaction	Environmental initiatives and environmental awards
Lai *et al.* (2010)	Positive (+)	Structural equations model (179 Taiwanese firms)	Brand equity and performance	Corporate social responsibility

Notes: [a] + denotes positive link between corporate reputation and firm performance; −, negative; n/a, none; ?, inconsistent pattern

Table I.
Corporate reputation and performance link

and company performance as shown in Table I. Previous studies defined reputation as excellence in social responsibility, corporate image, or organizational competence and examined the impact on firm performance separately. This study includes not only the overall score of corporate reputation but also four important aspects of reputation, namely, quality of products and services, social responsibility, and innovativeness. In addition, it

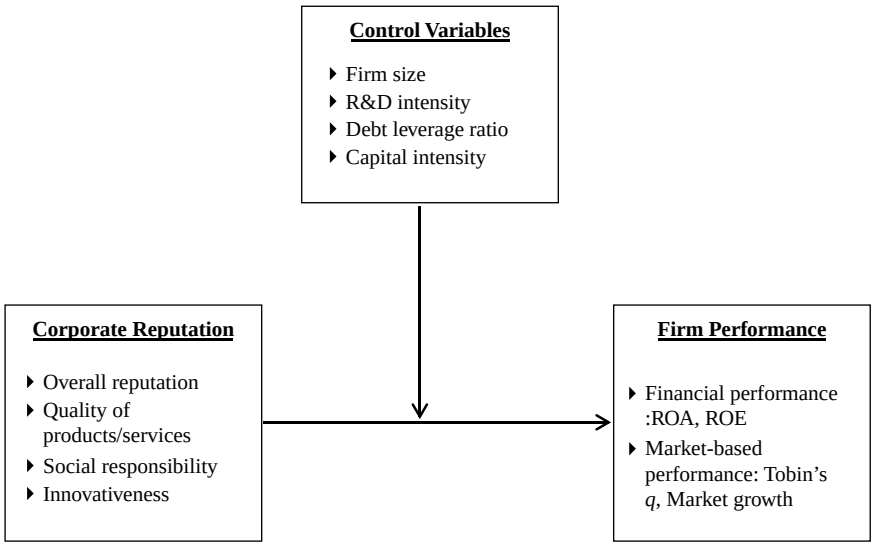

Figure 1.
Linkage between corporate social performance and corporate financial performance

looks into whether traditional relationships between market structure and performance can be suitably applied to other market environments. This study aims to extend Roberts and Dowling's work in 2002 and comprehensively examine the association between corporate reputation and firm performance.

Corporate reputation and performance

Corporate reputation is the overall estimation that gauges a company's net affective image perceived by customers, investors, employees, and the general public (Eberl and Schwaiger, 2005). A corporation's reputation is an intangible asset hard for competitors to imitate and can be successfully translated to competitive advantage. The annual publication of social responsibility reports by major firms speaks for the significance of reputation for their performance. Researchers have also found that corporate reputations is conducive to attracting superior employees and capital on favorable terms and conferring bargaining advantages in general over a range of stakeholder relations (Roberts and Dowling, 2002; Rose and Thomsen, 2004; Boyd *et al.*, 2010). These advantages convert reputation into financial performance (Barney, 2000). Using Fortune's "America's Most Admired Corporations" reports from 1994 to 1998, Roberts and Dowling's (2002) examined the relationship between corporate reputation and financial performance and found that firms with relatively good reputations are better able to sustain superior profit outcomes overtime. We use this research to set our hypothesis as:

H1. Overall corporate reputation is positively associated with firm performance across high- and low-tech industries.

Quality of products/services and performance

Quality is the basis of competition; connected to other dimensions of strategy such as cost, speed, and flexibility (Rust *et al.*, 2002). It is an advantage that leads to profitability in two ways. First, the high quality of products and services minimize non-value

activities associated with reworking, waste, and product failure. Spending the least amount of resources in such activities helps the firm to focus on value-adding activities and increase the overall level of productivity. Second, the excellent quality of products and services attracts the customer's attention and creates loyalty. Customers are willing to pay a higher premium for excellent products/services. Thus, we hypothesize:

H2. Quality of product and services is positively associated with firm performance across high- and low-tech industries.

Corporate social responsibility and performance

Empirical studies of the relationship between corporate social responsibility (CSR) and financial performance comprise largely two types. The first uses the event study methodology to assess the short-run financial impact (abnormal returns) when firms engage in either socially responsible or irresponsible acts. The results of these studies have been mixed. Lai *et al.* (2010) reported a positive relationship, while Teoh *et al.* (1999) found no relationship. The second type of study examines the relationship between some measure of corporate social performance and measures of long-term financial performance by using accounting or financial measures of profitability. The studies have also reported mixed results (Aupperle *et al.*, 1985; McWilliams and Siegel, 2000; Kotha *et al.*, 2001; Rose and Thomsen, 2004; Wagner and Schaltegger, 2004).

A firm that attempts to decrease its implicit costs by socially irresponsible behavior – by, for example, neglecting to take measures against pollution – will eventually incur higher explicit costs. Socially responsible companies have a lower risk of negative events occurring. It is less likely for them to pay heavy fines for excessive polluting, to incur costly lawsuits against them, or to experience socially negative events detrimental to their business. Thus, we hypothesize:

H3. Social responsibility is positively associated with firm performance across high- and low-tech industries.

Innovativeness and performance

Innovation provides organizations with a means to create a sustainable competitive advantage that is imperative in today's turbulent environment. Different scholars have stated that innovation is a mechanism by which organizations can draw upon core competencies and convert them into tangible outcomes (Zhou and Wu, 2010). As one of critical dimension of reputation, innovation has surfaced as a distinguishing factor that allows a company to gain advantage and customer loyalty (Hull and Rothenberg, 2008). Kim and Mauborgne (2005) argued that innovative thinking in process and strategy can make the fierce competition irrelevant and pave the way for a sustainable edge over competitors. Superior leadership can lead to innovation and result in enhanced performance. Thus, we hypothesize:

H4. Innovation is positively associated with firm performance across high- and low-tech industries.

Firm characteristics and performance

Corporate characteristic factors such as firm size, R&D intensity, capital intensity, and debt leverage are generally used to control the extraneous effects. The following variables were considered for control:

- *Firm size.* It is viewed as one of the most validated determinants of a firm's profits due to its effect on competitive market power. Despite diverse views on the relationship between firm size and profitability, empirical research has shown consistently a positive relationship in the link.
- *R&D.* Numerous studies explored a relationship between R&D expenditures and profitability, and some studies emphasized its relative significance on performance (O'Mahony *et al.*, 2009). Chauvin and Hirschey (1993) showed R&D spending indirectly influences a corporate reputation. R&D expenditures result in new products and technologies that help firms develop and sustain competitive advantage, acquire additional market share, and penetrate into new markets. Using 11,000 firm-years from 1997 to 2006, Mudambi and Swift (2011) reported R&D expenditure closely correlate with firm growth.
- *Capital intensity.* It refers to the dominance of financial investment in technology, machines, and equipment as a means of reducing the cost of labor in operations. It represents a firm's long-term commitment to building technological base and upgrading productive capacity. Capital expenditure can dilute short-term resources, but will pay off in the long run. Thus, this study expects a positive association between capital expenditure and corporate profitability.
- *Debt leverage.* It captures the financial risk as the debt to equity ratio. While signaling commitment to expansion, it places burdens on a firm's assets due to heavy cost of capital. Several studies reported a negative association between debt leverage and profitability (Zahra and Fescina, 1991). Following this evidence, this study proposes the following hypotheses:

H5. Firm size and R&D intensity and capital intensity are positively associated with firm performance across high- and low-tech industries.

H6. Debt leverage is negatively associated with firm performance across high- and low-tech industries.

Empirical design and research methods

Samples and data collection

The initial sample was comprised of 380 firms listed in the Fortune's "America's Most Admired Companies" (2006). Financial firms (SIC 6,000-6,999) and government and special service-related firms (SIC 9,000-9,999) were eliminated to focus the sample on investigating the impact of corporate reputation on performance: high- vs low-tech industries. The data were then matched with the economic financial performance and other control variables from COMPUSTAT's *Research Insight* for the period between 2001 and 2005. Some firms had to be eliminated due to missing values. Finally, 230 firms (108 in high- vs 122 in low-tech) over the same period were chosen on the basis of comprehensive data availability and tested for this study. Table II presents a breakdown of the various industries represented by the firms in the sample. In particular, the primary two-digit SIC code identifies industry classification: high- vs low-tech (Table II). The commonality of industries served as the basis of the grouping (Shim *et al.*, 2009). Given that the variables studied in this research will fluctuate from

Industry	High-tech[a]	Low-tech	Total	SIC
Mining and drilling	4	12	16	1,000-1,499, 2,900-2,999
Construction	0	4	4	1,500-1,799
Food, drink and tobacco	0	12	12	0-999, 2,000-2,199
Textiles and apparel	0	4	4	2,200-2,399
Lumber and wood product	1	11	12	2,400-2,699
Drugs and chemicals	22	0	22	2,800-2,899
Rubber, plastic and leather	1	4	5	3,000-3,199
Prime and fabric metals	10	5	15	3,300-3,499
Machinery and computer	17	0	17	3,500-3,599
Electric and electronic equipments	15	0	15	3,600-3,699
Transportation equipment	15	0	15	3,700-3,799
Measurement instrument	14	0	14	3,800-3,899
Computer-related services	15	3	18	7,370-7,379
Transportation and leisure services	0	15	15	4,000-4,700, 7,000-7,099
Publishing and communication	0	15	15	2,700-2,799, 4,800-4,899
Wholesale, retailer, and food service	0	20	20	5,000-5,999
Other business service	0	17	17	4,900-4,999
Total	108	122	230	

Note: [a]High-tech counts are firms with more than 5 percent in R&D intensity (i.e. ratio of R&D expenditures to total sales)

Table II.
Number of firms in samples by type of industry: high- vs low-tech

year-to-year, five-year simple aggregated averages were used to balance out any irregularities that might bias the results.

Description of variables

Corporate reputation. Although there still exists some questions about the validity of the "Fortune reputation index" (Fryxell and Wang, 1994), it remains the most widely used measure of firm reputation (Lee and Hall, 2008; McGuire *et al.*, 1988). Four criteria were chosen for this study. The scores were then averaged to arrive at an overall reputation index for each firm, which then served as a proxy for overall corporate reputation. The other attributes such as quality of management, value as a long-term investment, financial soundness, ability to develop and keep talented people, used corporate asset were eliminated because they are highly correlated with overall average value of reputation index and/or other attributes.

Firm performance. Avoiding the use of a single performance measure, this study uses accounting- and market-based performance. For accounting-based performance, two measures were adopted:

(1) after-tax rate of return on total assets, measured as the average ratio of net profit after tax to total assets; and

(2) after-tax rate of return on shareholders' equity.

Tobin's Q and sales growth rate by sales reflect the investors' expectations about future profit. Tobin's Q does not require risk adjustment or normalization and it reflects investor's expectation about a firm's future-oriented performance measures (Miller, 2004). Sales growth, a five-year average growth rate in sales revenue, estimates the potential and sustainable power to survive in a competitive market environment.

Control variables. Since the strategic linkage between corporate reputation and firm performance can oscillate by other strategically important influences, it deemed necessary to control for potentially confounding variables as follows:

$$\text{Firm size} = \text{natural log value of total sales}$$

$$\text{R\&D intensity} = \frac{\text{R\&D expenditures}}{\text{total sales}}$$

$$\text{Capital intensity} = \frac{\text{total assets}}{\text{total sales}}$$

$$\text{Debt leverage} = \frac{\text{book value of total debt}}{\text{shareholder's equity}}$$

Analysis method

A Pearson correlation analysis and the multiple regression analysis methods investigate the proposed hypotheses. To control multicollinearity and industry effects, variance influence factor (VIFs) was examined and the data were divided into two samples (i.e. high- vs low-tech) if R&D expenditure was equivalent to 5 percent of sales during that period (Balkin *et al.*, 2000). The multiple regression analysis proceeded in two steps. First, the analysis included the control variables only and then the multiple regression analysis was run. At the second step, the four attributes of corporate reputation were added to the analysis. The change of R^2 and significance of the change were examined along with the coefficients.

Results and discussions

Descriptive statistics and correlation analysis

Table II presents the breakdown of companies researched by type of industry. Table III shows descriptive statistics. Firms in low-tech industry show a higher performance than that in high-tech industries regardless of different indices of performance measures except for Tobin's Q. With respect to the corporate reputation index, firms in a high-tech group seem to exhibit higher values than those in a low-tech group in the selected reputation attributes. A high-tech group exhibits significantly higher R&D intensity than a low-tech industry (13.1 vs 1.48 percent).

Table IV (A & B) presents correlations among all variables including control variables employed in this study to show the directional relationships and the extent to which exogenous variables are related to the firm economic performance. Overall corporate reputation is positively associated with firm performance regardless of types of performance measures and industry contexts. This supports the traditional notion that a firm's image or reputation is closely related to economic performance. However, social responsibility and quality of product/services are not uniformly related to firm performance in low-tech industries. Particularly, innovativeness is positively related to market-based performance measures in high-tech industries. Corporate reputation is more proactive to the enhancement of the firm's performance.

In addition, firm size is positively correlated with all performance measures regardless of different level of technology strengths, supporting the previous finding that the larger the firm, the more likely that firm will earn a higher reputation (Lee and Hall, 2008).

Variables	High-tech industries Mean	SD	Low-tech industries Mean	SD
Firm performance				
ROA	2.903	11.990	4.291	9.763
ROE	6.157	25.652	11.822	29.731
Tobin's Q	4.115	5.304	2.037	1.756
Sales growth	11.598	12.725	11.748	18.609
Corporate reputation indices				
Overall reputation score[b]	6.354	1.103	6.255	1.247
Quality of product/services	6.483	1.045	6.428	1.283
Social responsibility	6.120	1.292	6.058	1.125
Innovativeness	6.165	1.197	4.986	1.109
Control variables				
Firm size: ln (sales)	15.396	2.754	15.612	1.978
R&D intensity	13.065	5.659	1.475	3.040
Capital intensity	1.784	1.382	1.023	1.423
Debt leverage	36.061	40.199	41.308	22.348

Notes: [a]High-tech ($n = 108$) vs low-tech ($n = 122$); each variable consists of one item; [b]overall reputation score indicates score point on the scale of 10

Table III.
Descriptive statistics for variables: high- vs low-tech industries[a]

R&D intensity and capital intensity are positively correlated with the firm's economic performance in high-tech industries only. Capital intensity shows a negative impact on accounting-based performance, whereas debt leverage does not seem to be significantly related to any dimension of performance measures.

Results of multiple regression analysis

Variables causing the financial halo are excluded from the model to avoid multicollinearity (Fryxell and Wang, 1994). After removing all potential variables highly correlated with other attributes of reputation index, the VIFs ranged below the threshold value of 10 (the highest VIF was 8.345), suggesting multicollinearity is not a serious threat (Hair *et al.*, 2005). Table V presents the regression results. As for the high-tech industry, all regression models are highly significant, and the set of the corporate reputation indices explain between 22 and 32 percent of the variance. For low-tech industries, the variables explained 20-24 percent of the variances.

Corporate reputations

As expected, most corporate reputation indices are uniformly linked to performance measures, particularly with respect to market-based performance ($p < 0.01$) in both high- and low-tech companies. This finding reinforces the traditional view that firms with relatively good reputation seem to be better able to sustain superior performance overtime regardless of different industry context (Roberts and Dowling, 1997; Inglis *et al.*, 2006; Lee and Hall, 2008). Contrary to overall reputation score, CSR is not uniformly associated with all performance measures. CSR is highly significant and positively associated with market-based performance for both types of industries at the 1 percent level. This finding appears to support previous studies (Tsoutsoura, 2004) which demonstrated that social responsibility positively affects the firm's profit by reducing the risk of negative events. It is less likely for socially responsible companies to

Table IV.
Correlation matrix among variables: high- vs low-tech industries

	1	2	3	4	5	6	7	8	9	10	11
(A) High-tech industries [a]											
1. ROA											
2. ROE	0.42****										
3. Tobin's Q	0.40****	0.18**									
4. Sales growth	0.16**	0.21***	0.15**								
5. Overall reputation index	0.24****	0.21***	0.25****	0.26****							
6. Quality of product/services	0.20**	0.17**	0.21***	0.15**	0.23****						
7. Social responsibility	0.22***	0.19**	0.21***	0.19**	0.40****	0.24****					
8. Innovativeness	0.04	0.02	0.18**	0.20***	0.17**	0.17**	0.13**				
9. Firm size: ln (sales)	0.31****	0.21****	0.35****	0.21***	0.28****	0.32****	0.20***	0.18**			
10. R&D intensity	0.18**	0.10**	0.31****	0.18**	0.38****	0.38****	0.33****	0.24****	−0.15**		
11. Capital intensity	−0.15**	−0.17**	0.15**	0.15**	−0.03	0.21***	−0.14**	−0.05	0.22***	0.14**	
12. Debt leverage	−0.10	−0.09	−0.10	−0.88	−0.23***	−0.24***	−0.25***	−0.11*	0.15**	−0.08	0.15**
(B) Low-tech industries [b]											
1. ROA											
2. ROE	0.50****										
3. Tobin's Q	0.30***	0.14**									
4. Sales growth	0.16**	0.20***	0.26**								
5. Overall reputation index	0.20***	0.20***	0.20***	0.20***							
6. Quality of product/services	0.19***	0.16**	0.18**	0.16**	0.38****						
7. Social responsibility	0.14**	0.05	0.16**	0.16**	0.40****	0.32****					
8. Innovativeness	0.09	0.04	0.10	0.09	0.41****	0.29****	0.30****				
9. Firm size: ln (sales)	0.37****	0.19***	0.31****	0.15**	0.28****	0.28****	0.17**	0.17**			
10. R&D intensity	0.13*	0.10	0.12*	0.10	−0.09	0.08	0.09	0.09	0.05		
11. Capital intensity	−0.09	−0.08	0.09	0.10	0.12*	0.07	−0.13**	−0.05	0.15**	0.12*	
12. Debt leverage	−0.10	0.03	−0.11	−0.56	−0.28****	−0.24****	−0.21***	−0.15**	−0.10	0.00	0.16**

Notes: Significance at: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$, and ****$p < 0.001$ levels; [a,b]$n = 230$ (108 in high-tech vs 122 in low-tech industries)

Variables	ROA		ROE		Tobin's Q		Sales growth	
(A) High-tech industries								
Intercept	−46.860	(7.618)***	−72.136	(19.715)***	−3.278	(1.243)**	2.358	(0.123)***
Overall reputation score	7.017	(1.680)***	11.108	(4.348)	12.7	(4.231)***	6.325	(3.012)**
Quality of product/servcies	2.964	(1.548) +	3.145	(2.000)*	2.216	(1.085)**	2.315	(1.073)**
Social responsibility	0.717	(1.247)	1.335	(3.221)	2.735	(1.328)**	1.235	(0.512)**
Innovativeness	−0.008	(0.134)	0.208	(0.346)	0.285	(0.235)	−0.035	(0.028)
Firm size: ln (sales)	1.677	(0.485)***	2.138	(0.257)**	3.012	(1.485)**	1.367	(0.435)**
R&D intensity	0.551	(0.226)**	1.551	(0.585)**	2.023	(0.758)**	1.385	(0.632)*
Capital intensity	−0.982	(0.775)	−2.229	(2.001)	1.352	(0.894)	1.487	(0.687)*
Debt leverage	−0.064	(0.025)**	−0.135	(0.066)*	−0.154	(0.069)*	−0.148	(0.098)
Adjusted R^2		0.2270		0.2456		0.3214		0.2583
F-ratio		7.5486***		8.4574***		10.424***		8.4876***
(B) Low-tech industries								
Intercept	−37.440	(7.727)***	−78.542	(24.88)***	−5.527	(2.546)**	2.343	(0.105)***
Overall reputation score	6.279	(1.587)***	19.816	(5.112)***	10.25	(4.895)**	4.875	(2.134)**
Quality of product/servcies	3.470	(1.645)*	10.998	(5.297)*	5.326	(2.985)*	2.879	(1.498)*
Social responsibility	2.073	(1.401)	2.346	(1.508)	2.695	(1.354)**	3.151	(1.523)**
Innovativeness	0.195	(1.579)	2.600	(5.086)	1.036	(0.678)	1.232	(0.687)
Firm size: ln (sales)	2.461	(0.420)***	6.629	(1.353)***	4.325	(2.312)**	2.312	(0.987)**
R&D intensity	0.327	(0.276)	0.587	(0.891)	0.625	(0.658)	0.725	(0.820)
Capital intensity	−0.892	(0.623)	−0.786	(0.486)	−1.036	(0.632)	1.025	(0.703)
Debt leverage	0.003	(0.035)	0.156	(0.117)	0.321	(0.287)	0.035	(0.026)
Adjusted R^2		0.2097		0.2145		0.2415		0.2434
F-ratio		8.4523***		7.8562***		8.9542***		8.5864***

Notes: Significance at: *$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$ levels; [a]for overall sample, $n = 230$; cell entries are unstandardized regression coefficients; standard errors are in parentheses; + indicates that there is positive relationship between the reputation and performance

Table V.
Results of ordinary least squares multiple regression analysis: high- vs low-tech industries[a]

pay heavy fines, be involved in costly lawsuits, or to experience socially negative events that would be destructive to their reputation. We believe that there may be different reasons for this lack of significance in different performance measures. The absence of a significant relationship between CSR and short-term financial performance might be caused by other intervening variables, such as explicit costs that may directly affect short-term financial profit.

In addition to CSR, quality of product and/or services is significantly associated with most performance measures across industries at the 5 percent level. In fact, the quality of products and services is paramount to a company's success because it demonstrates the amount of effort expended on products and services. Therefore, quality should become a strategic priority if a company intends to thrive in a competitive market, regardless of scope or context of industry. Furthermore, quality initiatives in product and services should also be undertaken to help business organizations meet financial goals by developing better quality products and providing better services to customers in both high- and low-tech industries. Contrary to our expectations, innovation does not have a significant effect on firm performance in either high- or low-tech industries. Such results contrast with previous studies that demonstrated significant relationship between innovation and high-tech firms' profits (Huang and Rice, 2009). The interesting point is that regardless of the different industry contexts, the effect of social responsibility on market-based performance is robust.

Other strategic firm characteristics

As expected, firm size was highly significant ($p < 0.001$) and positively associated with most performance measures in both high- and low-tech industries, while R&D intensity was significantly associated with performance measures in high-tech industries only in a uniformed manner. In particular, our finding supports the general notion that R&D intensity can be used to foster competitive capabilities for sustainable business success in a high-tech firm (Lee and Hall, 2008). A high investment in R&D in high-tech industries reflects a company's willingness to forgo current operations or revenues in an effort to improve future return and market growth. Over the long-run, R&D spending tends to be strongly and positively related to firm profitability and market growth. Capital intensity was not found to be significantly associated with any performance measure in both company groups (except with market growth). Debt leverage was significantly but negatively associated with most performance measures (except market growth) in high-tech companies only, while it was not significantly associated with any performance measures in low-tech industries. Thus, relatively large amounts of leverage tend to curb a firm's financial profit and market capabilities, implying that more leverage leads to greater risks, particularly in high-tech industries.

Conclusion, implications, and limitations

The study explores the nature of corporate reputation as the predictor of the firm's economic performance and proposes a multidimensional aspect of corporate reputation and other traditional measures of success and relates it to firm profitability in high- and low-tech firms. This study purposed to scrutinize whether corporate reputation and performance can be suitably applied to different levels of technology firms in the market using broader corporate attributes and performance measures. The findings suggest that the strategic relationships between corporate reputations and firm performance

hold significant in both high- and low-tech industry groups. The link turned out to be substantial in the case of financial performance. The overall corporate reputation turns out to be uniformly significant in increasing firm performance across high- and low-tech companies. The effect of other reputation factors such as quality of product/services, social responsibility, and innovativeness on firm performance exhibits mixed results. Quality of products/services appears to be a significant determinant of most performance measures regardless of different dimensions across industries, whereas social responsibility seems to be significant with respect to market-based performance only. The empirical results of this study are summarized in Table VI.

This results lead to the following implications. First, the findings support the RBV in that corporate reputation serves as a critical intangible asset for firms that enhances the bottom line of the company. The previous empirical studies have reported results surrounding the relationship, and using various measurement of corporate reputation, this study shows that the RBV holds true in its impact on firm performance. Second, the impact of corporate reputation on firm performance is contingent on firm characteristics. The results indicate that considerable uniform relationships exist between some independent variables and financial performance in both high- and low-tech industries. These findings suggest that overall corporate reputation index, quality of product/service, firm size, and R&D intensity emerge significantly and positively related to a firm's performance across different indices of firm economic performance measures. However, CSR, innovativeness, capital intensity, and debt leverage do not appear to uniformly influence performance. Capital intensity had no serious impact on any performance measure and debt leverage had negative bearings on most performance measures. Thus, managers should take the various contexts into consideration when attempting to exert the maximum benefit from increasing reputation.

The findings of the study will be of importance because it not only identifies the significance of diverse dimensions of reputation attributes but also helps to determine the appropriateness of a competitive benchmarking strategy in a given industry context. The results yield to a novel strategic insight on the linkage between corporate reputation and firm performance in business research. Contrary to the previous studies

Performance	Overall reputation	Quality of product/ services	Social responsibility	Innovativeness	Firm size	R&D intensity	Capital intensity	Debt leverage
High-tech industries								
ROA	****	*			****	***		***
ROE	***	**			***	***		**
Tobin's Q	****	***	***		***	***		**
Sales growth	****	***	***		***	**	**	
Low-tech industries								
ROA	****	**			****			
ROE	****	**			****			
Tobin's Q	***	**	***		***			
Sales growth	***	**	***		***			

Note: Significance at: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$, and $^{****}p < 0.001$

Table VI.
Summary of association between firm performance h and corporate reputations

that demonstrated simple link of an unidimensional aspect of reputation and firm performance, this study explored the simultaneous strategic paradigm between multidimensional reputation indices and a broad view of the firm performance after controlling for the moderating effects of possibly confounding factors. The results inform researchers and practitioners that corporate reputation is a strategic link that exerts a significant impact on the bottom line of firms. Benchmarking the levels of quality, corporate image, and innovativeness enables firms to improve the congruence of diverse aspects of corporate reputations and thus firms should take corporate reputation into consideration in an effort to improve their bottom line.

There continues to be considerable debate over the nature of the relationship between corporate reputation and firm performance, considering other potential moderating factors. Thus, the results of this study should be interpreted with caution. The study methodology assesses the short-run corporate reputation, which covers a one-year period only. Further research needs to clarify the controversial findings by expanding the size of sample as data becomes available and increasing the number of more current years of data examined. Furthermore, future study needs to verify the lagged relationship between market structure and profitability. In addition, the selected industries might be compared with the same industries abroad to determine if the same findings emerge. This study has just opened the door to additional research efforts that serve to acknowledge the strategic significance of corporate reputation for the company's benchmarking performance. Follow-up studies should reexamine and enrich the comprehensive reputation-performance link in diverse contexts (e.g. manufacturing vs non-manufacturing) and verify if the same findings hold true across a broader industry and country spectrum.

References

Aupperle, K.E., Carroll, A.B. and Hatfield, J.D. (1985), "An empirical examination of the relationship between corporate social responsibility and profitability", *The Academy of Management Journal*, Vol. 28 No. 2, pp. 446-63.

Balkin, D.B., Markman, G.D. and Gomez-Mejia, L.R. (2000), "Is CEO pay in high-technology firms related to innovation?", *The Academy of Management Journal*, Vol. 43 No. 6, pp. 1118-29.

Barney, J.B. (2000), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.

Bergh, D.D., Ketchen, D. and Boyd, B.K. (2010), "New frontiers of the reputation-performance relationship: insights from multiple theories", *Journal of Management*, Vol. 36 No. 3, pp. 620-32.

Boyd, B.K., Bergh, D.D. and Ketchen, D.J. (2010), "Reconsidering the reputation-performance relationship: a resource-based view", *Journal of Management*, Vol. 36 No. 3, pp. 588-609.

Chauvin, K.W. and Hirschey, M. (1993), "Advertising, R&D expenditures and the market value of the firm", *Financial Management*, Vol. 22 No. 4, pp. 128-41.

Eberl, M. and Schwaiger, M. (2005), "Corporate reputation: disentangling the effects on financial performance", *European Journal of Marketing*, Vol. 39 Nos 7/8, pp. 838-54.

Fryxell, G.E. and Wang, J. (1994), "The Fortune corporate 'reputation' index: reputation for what?", *Journal of Management*, Vol. 20 No. 1, pp. 1-14.

Hair, J.F., Black, B., Babin, B., Anderson, R.E. and Tatham, R.L. (2005), *Multivariate Data Analysis*, 6th ed., Prentice-Hall, Upper Saddle River, NJ.

Huang, F. and Rice, J. (2009), "The role of absorptive capacity in facilitating 'open innovation' outcomes: a study of Australian SMEs in the manufacturing sector", *International Journal of Innovation Management*, Vol. 3 No. 2, pp. 201-20.

Hull, C.E. and Rothenberg, S. (2008), "Firm performance: the interactions of corporate social performance with innovation and industry differentiation", *Strategic Management Journal*, Vol. 29 No. 7, pp. 781-9.

Inglis, R., Morley, C. and Sammut, P. (2006), "Corporate reputation and organisational performance: an Australian study", *Managerial Auditing Journal*, Vol. 21 No. 9, pp. 934-47.

Jacobs, B.W., Singhal, V.R. and Subramanian, R. (2010), "An empirical investigation of environmental performance and the market value of the firm", *Journal of Operations Management*, Vol. 28 No. 5, pp. 430-41.

Kim, W.C. and Mauborgne, R. (2005), *Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant*, Harvard Business Press, Boston, MA.

Klassen, R.D. and McLaughlin, C.P. (1996), "The impact of environmental management on firm performance", *Management Science*, Vol. 42 No. 8, pp. 1199-214.

Kotha, S., Rajgopal, S. and Rindova, V. (2001), "Reputation building and performance: an empirical analysis of the top-50 pure internet firms", *European Management Journal*, Vol. 19 No. 6, pp. 571-86.

Lai, C., Chiu, C.J., Yang, C.F. and Pai, D.C. (2010), "The effects of corporate social responsibility on brand performance: the mediating effect of industrial brand equity and corporate reputation", *Journal of Business Ethics*, Vol. 95 No. 3, pp. 457-69.

Lee, J. and Hall, E.H. (2008), "An empirical investigation of the 'halo' effect of financial performance on the relationships between corporate reputation and CEO compensation", *American Journal of Business Research*, Vol. 1 No. 1, pp. 93-110.

McGuire, J.B., Sundgren, A. and Schneeweis, T. (1988), "Corporate social responsibility and firm financial performance", *Academy of Management Journal*, Vol. 31 No. 4, pp. 854-72.

McWilliams, A. and Siegel, D. (2000), "Corporate social responsibility and financial performance: correlation or misspecification?", *Strategic Management Journal*, Vol. 21 No. 5, pp. 603-9.

Miller, D.J. (2004), "Firms' technological resources and the performance effects of diversification: a longitudinal study", *Strategic Management Journal*, Vol. 25 No. 11, pp. 1097-119.

Mudambi, R. and Swift, T. (2011), "Proactive R&D management and firm growth: a punctuated equilibrium model", *Research Policy*, Vol. 40 No. 3, pp. 429-40.

O'Mahony, M., Vecchi, M. and O'Mahony, M.A.M.V. (2009), "R&D, knowledge spillovers and company productivity performance", *Research Policy*, Vol. 38 No. 1, pp. 35-44.

Roberts, P.W. and Dowling, G.R. (1997), "The value of a firm's corporate reputation: how reputation helps attain and sustain superior profitability", *Corporate Reputation Review*, Vol. 1, pp. 72-5.

Roberts, P.W. and Dowling, G.R. (2002), "Corporate reputation and sustained superior financial performance", *Strategic Management Journal*, Vol. 23 No. 12, pp. 1077-93.

Rose, C. and Thomsen, S. (2004), "The impact of corporate reputation on performance: some Danish evidence", *European Management Journal*, Vol. 22 No. 2, pp. 201-10.

Rust, R.T., Moorman, C. and Dickson, P.R. (2002), "Getting return on quality: revenue expansion, cost reduction, or both?", *The Journal of Marketing*, Vol. 66 No. 4, pp. 7-24.

Shim, E.S., Lee, J. and Joo, I.K. (2009), "CEO compensation and US high-tech and low-tech firms' corporate performance", *Contemporary Management Research*, Vol. 5 No. 1, pp. 93-106.

Teoh, S.H., Welch, I. and Wazzan, C.P. (1999), "The effect of socially activist investment policies on the financial markets: evidence from the South African boycott", *Journal of Business*, Vol. 72 No. 1, pp. 35-89.

Tsoutsoura, M. (2004), *Corporate Social Responsibility and Financial Performance*, University of California, Berkeley, CA.

Wagner, M. and Schaltegger, S. (2004), "The effect of corporate environmental strategy choice and environmental performance on competitiveness and economic performance: an empirical study of EU manufacturing", *European Management Journal*, Vol. 22 No. 5, pp. 557-72.

Worrell, D.L., Davidson, W.N. III and Sharma, V.M. (1991), "Layoff announcements and stockholder wealth", *The Academy of Management Journal*, Vol. 34 No. 3, pp. 662-78.

Zahra, S.A. and Fescina, M. (1991), "Will leveraged buyouts kill US corporate research and development?", *The Executive*, Vol. 5 No. 4, pp. 7-21.

Zhou, K.Z. and Wu, F. (2010), "Technological capability, strategic flexibility, and product innovation", *Strategic Management Journal*, Vol. 31 No. 5, pp. 547-61.

Further reading

Aksoy, L., Cooil, B., Groening, C., Keiningham, T.L. and Yalcin, A. (2008), "The long-term stock market valuation of customer satisfaction", *Journal of Marketing*, Vol. 72, pp. 105-22.

Zhu, Q., Sarkis, J. and Lai, K. (2008), "Green supply chain management implications for 'closing the loop'", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 44 No. 1, pp. 1-18.

About the authors

Jooh Lee is Professor of Management and Entrepreneurship at Rowan University. He earned his Master's degree at Colorado State and his PhD at the University of Mississippi. He teaches courses in strategy and operations management. His main research areas of interest are cross-national studies on strategic management and performance productivity with special emphasis on strategy and performance, CEO compensation, productivity, technology (R&D) and corporate reputation. He has published more than 100 articles in journals and proceedings. His research focuses on the area of international business and economics with special emphasis on strategy and performance, CEO compensation, reputation, and information technology across countries.

James Jungbae Roh is Assistant Professor of Management and Entrepreneurship at Rowan University, USA. He received his PhD in Manufacturing Management, MBA in Management Information Systems and MA in Economics from the University of Toledo, and BA from Dongguk University, Seoul, Korea. His research interests center on the interface of supply chain strategy, sustainability, and technology management. His articles have been published or accepted in *Information and Management, International Journal of Production Research*, *International Journal of Production Economics*, *Journal of Enterprise Information Management*, *European Journal of Innovation Management*, *International Journal of Services and Operations Management*, and *Research in International Business and Finance*. James Jungbae Roh is the corresponding author and can be contacted at: roh@rowan.edu