

The Relationship Between Corporate Social Performance, and Organizational Size, Financial Performance, and Environmental Performance: An Empirical Examination

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ABSTRACT. The purpose of this study is to examine the relationship between the corporate social performance of an organization and three variables: the size of the organization, the financial performance of the organization, and the environmental performance of the organization. By empirically testing data from 1987 to 1992, the results of the study show that a firm's corporate social performance is indeed impacted by the size of the firm, the level of profitability of the firm, and the amount of pollution emissions released by the firm.

Introduction

An area that has received an increased focus of attention is the corporate social performance (CSP) of organizations (i.e. Carroll, 1979; Wartick and Cochran, 1985; Wood, 1991a; Wood, 1991b). Previous work has focused primarily on the relationship between CSP and financial performance (i.e. Anderson and Frankle, 1980; Ingram and Frazier, 1983; McGuire, Sundgren and Schneeweiss, 1988). This study builds on this existing research base by examining

the relationship between corporate social performance and three organizational variables: organizational size, financial performance and environmental performance.

Theoretical background

Corporate social performance

Wood (1991a) describes Corporate Social Performance (CSP) as being comprised of three major components. The first component is the level of corporate social responsibility which is based on legitimacy within society, public responsibility within the organization, and managerial discretion by each individual within the organization. The second component is the processes of corporate social responsiveness which includes environmental assessment, stakeholder management and issues management. The third component refers to the outcomes of corporate behavior and includes social impacts, social programs, and social policies. As a result, CSP is a critical factor to consider for all organizations since CSP components such as: "(s)ocial issues, environmental pressures, stakeholder concerns are sure to affect corporate decision making and behavior far into the future" (Wood, 1991b, p. 400).

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Corporate social performance and financial performance

Previous research on the relationship between CSP and financial performance has provided conflicting results. A positive relationship has been identified in a number of studies (i.e. Bowman, 1978; Fry and Hock, 1976; Preston, 1978; Anderson and Frankle, 1980; Belkaoui, 1976). This research supports the view that the cost of having a high level of corporate social responsibility is more than offset by the increased benefits in employee morale and productivity (Soloman and Hansen, 1985). However, additional studies have found a negative relationship (i.e. Ingram and Frazier, 1983; Freedman and Jaggi, 1982). This research supports the view that the costs of being socially responsible forces the firm into an unfavorable financial position versus firms that are not socially responsive (Aupperle et al., 1985).

One explanation why these studies may have yielded inconsistent results could be the method in which the social performance variable has been measured (Ullmann, 1985). However, a number of recent studies (i.e. McGuire, Sundgren and Schneeweiss, 1988; Fombrun and Shanley, 1990; Thomas and Simerly, 1994) have been consistent in the use of the same variable to measure corporate social performance. This measurement variable is the *Fortune* Corporate Reputation Index.

The use of the corporate reputation index as a measurement of CSP

In a number of recent studies, the firm's corporate reputation has been used as a measurement of CSP (i.e. McGuire et al., 1988; Fombrun and Shanley, 1990; Thomas and Simerly, 1994). The firm's corporate reputation is based on *Fortune's* Corporate Reputation Index. Using the Corporate Reputation Index, both McGuire et al. (1988) and Fombrun and Shanley (1990) found a positive relationship between CSP and financial performance.

However, Fryxell and Wang (1994) warn that there will be a strong relationship between the Corporate Reputation Index and the firm's

financial performance since, they argue, the Corporate Reputation Index is heavily weighted based on the financial position of the firm. Therefore, a fundamental question that needs to be addressed is whether the Corporate Reputation Index is a valid measurement of a firm's corporate social performance. By examining the relationship between CSP and three organizational variables, including the firm's environmental performance, the results of this study will provide empirical support as to whether the Corporate Reputation Index does indeed represent the firm's environmental commitment.

Corporate size and corporate social performance

Based on past research, it is expected that the size of the firm will play a role in the firm's CSP (i.e. Dierkes and Coppock, 1978; Trotman and Bradley, 1981). Larger firms receive a high level of attention from the general public, which may, in turn, "encourage" the firms to have a higher level of CSP. In their study, Fombrun and Shanley (1990) found that larger firms had a higher value of their Corporate Reputation Index. As a result, it is expected that larger firms would have a higher level of CSP.

Corporate social performance and environmental performance

Based on the principles of corporate social responsibility (Wood, 1991a), it is expected that one of the critical components in the measurement of CSP will be based on the environmental performance of the organization. This is supported by research conducted by Poduska et al. (1992) and Reilly (1992). In examining the social responsibility at Eastman Kodak, Poduska et al. (1992) found that Kodak made a conscious effort to reduce the level of pollution emissions through technological innovations. Reilly (1992) also supports this relationship by examining the pollution reduction activities at Minnesota Mining and Manufacturing.

In this study, environmental performance of

the organization is represented by the level of pollution emissions released by the organization. Based on the CSP model and subsequent research, it is expected that organizations will have an obligation to implement actions that will benefit society (Wood, 1991a). As a result, it is predicted that there will be an inverse relationship between CSP and the level of pollution emissions.

Therefore, the hypothesis to be empirically tested in this study is:

Hypothesis 1: Corporate Social Performance of a firm will have a positive relationship with the size of the firm and the profitability of the firm and an inverse relationship with the level of pollution emissions released by the firm.

Methodology

Sample

This study is based on a sample of firms that meet the following criteria for each year from 1987 through 1992:

1. The firm was listed in the *Fortune* Corporate Reputation Index;
2. The firm was listed in the top 500 companies of pollution emissions in the United States Environmental Protection Agency's Toxic Release Inventory Report; and
3. Information was available about the firm's level of profitability and sales from the *Fortune* 500 listing.

This criteria resulted in the selection of 111 firms in 1987; 102 firms in 1988; 120 firms in 1989; 125 firms in 1990; 118 firms in 1991; and 121 firms in 1992.

Measures

Corporate Social Performance. Corporate Social Performance is based on the *Fortune* Corporate Reputation Index. Over 8000 executives and outside industry experts are asked to evaluate

organizations within their own industry on eight different variables on a scale from zero (poor) to ten (excellent). The eight attributes are: (1) quality of management, (2) quality of products or services, (3) innovativeness, (4) long-term investment value, (5) financial soundness, (6) ability to attract, develop, and keep talented people, (7) wise use of corporate assets, and (8) responsibility to the community and the environment. Based on the ranking of these eight variables, an overall reputation number is derived.

Since responsibility to the community and the environment is one of the eight attributes of the Corporate Reputation Index, the Corporate Reputation Index is used as a proxy measurement of CSP. The measurement of CSP based on the Corporate Reputation Index which has been used in previous research studies (i.e. McGurie et al., 1988; Fombrun and Shanley 1990; Wokutch and Spencer, 1987; Thomas and Simerly, 1994) supports the validity of the instrument.

In addition, the benefits of using the Corporate Reputation Index include the high number of respondents and high quality level of respondents to the survey. The respondents are familiar with the performance of the firms and the overall characteristics of the industry and, therefore, can make a well informed evaluation of the organization.

Size. Based on previous work by Fombrun and Shanley (1990) and Cowen, Ferreri and Parker (1987), the size of the organization is based on the annual sales of the firm.

Financial performance. The financial performance of the organization is based on the level of profitability (Cowen, Ferreri and Parker, 1987). To control for the variation in the size of the organization, the profitability of the firm is based on the yearly profits of the firm divided by the annual sales level of the firm.

Environmental performance. The environmental performance of the organization is based on the level of pollution emissions released by the firm. The level of pollution emissions is obtained from the EPA's Toxic Release Inventory Report which

generates a listing of the top 500 firms based on pollution emissions. The EPA sent the authors this summary for the years 1987 through 1992. This summary report was unavailable beginning in 1993. This report provides information on air releases, water releases, underground injections, land releases, and transfers from publicly owned treatment works and other transfer facilities. To control for the variation in the size of the organization, the emissions level of the firm is based on the annual pollution emissions of the firm, as reported on the Toxic Release Inventory Report, divided by the annual sales level of the firm.

Results

The yearly descriptive statistics are shown in Table I. As can be seen from the results presented in Table I, there is significant variation of all the variables in the study. In the six years examined in this study (1987 to 1992), the sales of the firms in the sample varied from \$123.4 million to \$132.7 billion. The Corporate Reputation Index of the companies varied from 3.24 to 9.02. The level of emissions also varied significantly from 5186.3 to 14396995. There was also a high level of variation in profitability (-59.49 to 57.96).

The correlation between CSP and the other three variables is shown in Table II. As highlighted in Table II, there is a significant positive correlation between CSP and profitability for all six years of the study. In addition, there is a significant inverse relationship between CSP and pollution emissions in 1987 and a significant positive relationship between CSP and sales in 1988, 1989, and 1990. Furthermore, there is a significant positive relationship between level of pollution emissions and profitability from 1987 through 1991. There is also an inverse relationship between sales and profitability and pollution emissions in 1987.

The results of the regression analysis are shown in Table III. The data in Table III support Hypothesis 1. The data in the 1987 and the 1990 sample support the relationship of all the variables presented in the hypothesis. In the years

1988, 1991 and 1992, the regression analysis demonstrated the positive relationship between CSP and sales and profitability, and the 1989 sample highlighted the positive relationship between profitability and CSP.

Discussion

The results of this study show that for two of the six years of the study (1987, 1990), a firm's size, financial performance, and environmental performance do impact the firm's level of CSP. Firms that are larger in size, have higher levels of profitability and lower levels of pollution emissions have higher levels of CSP. In addition, three of the four remaining years (1988, 1991, 1992) showed the positive relationship between CSP and sales and profitability. As a result, this study extends previous research on CSP. The results show that CSP is a multi-faceted construct which is impacted by various organizational variables. The results show that corporate social performance is indeed a complex construct. For firms to be acknowledged as leaders in corporate social responsibility, they need to focus not only on their financial performance, but also on their environmental performance. Although a significant relationship was only present in two of the six years of the study for all three variables examined, it does confirm that pollution emissions are important when considering the relationship between CSP and organizational variables.

The results of the study also support the belief that a strong relationship exists between profitability and corporate social performance. This study supports the view that profitability of the firm allows and/or encourages managers to implement programs that increase the level of corporate social responsibility.

In addition, the results show that larger firms recognize the need to be leaders in their commitment to corporate social performance. The leadership role may be due not only to the firm's access to additional resources used to implement corporate social performance programs, but also to the increased influence of additional stakeholders (i.e. environmental groups, government

TABLE I
Descriptive statistics

Panel 1: 1987 Results ($n = 111$)				
	Mean	Std Dev	Minimum	Maximum
S87	10662	15591	123.4	101782
P87	6.30	4.61	-12.82	20.10
EMS87	1389876	2511325	27964	14396995
REP87	6.50	0.96	3.24	9.0
Panel 2: 1988 Results ($n = 102$)				
	Mean	Std Dev	Minimum	Maximum
S88	11789	18454	529.8	121085
P88	5.66	9.19	-59.49	20.32
EMS88	625178	1381953	16941	9373648
REP88	6.50	0.87	3.88	8.87
Panel 3: 1989 Results ($n = 120$)				
	Mean	Std Dev	Minimum	Maximum
S89	11304	17061	597.5	126974
P89	5.57	4.62	-10.92	22.5
EMS89	358697	927845	6163.92	8695437
REP89	6.57	0.86	3.86	8.90
Panel 4: 1990 Results ($n = 125$)				
	Mean	Std Dev	Minimum	Maximum
S90	12598	19509	594.8	126017
P90	4.48	5.49	-10.55	22.77
EMS90	299687	816258	5186.33	6193903
REP90	6.34	0.97	3.57	8.86
Panel 5: 1991 Results ($n = 118$)				
	Mean	Std Dev	Minimum	Maximum
S91	12998	19244	983.6	123780
P91	3.85	8.76	-26.66	57.96
EMS91	495276	1409281	18064	10045919
REP91	6.33	0.96	3.70	9.02
Panel 6: 1992 Results ($n = 121$)				
	Mean	Std Dev	Minimum	Maximum
S92	12791	20123	624.4	132775
P92	0.93	7.79	-23.89	20.25
EMS92	442706	1126479	14430	9382278
REP92	6.38	0.92	3.58	8.74

Index:

SXX = yearly sales in millions of dollars.

PXX = yearly profits/yearly sales.

EMSXX = yearly pollution emissions/yearly sales.

REPPX = yearly Fortune Corporate Reputation Index Number.

TABLE II
Correlation analysis results

Panel 1: 1987 ($n = 111$)			
	REP87	S87	P87
S87	0.15293 0.1114		
P87	0.39218 0.0001	-0.15846 0.0967	
EMS87	-0.22306 0.0186	-0.18927 0.0466	0.20588 0.0302
Panel 2: 1988 ($n = 102$)			
	REP88	S88	P88
S88	0.17154 0.0847		
P88	0.47964 0.0001	0.00799 0.9365	
EMS88	0.00678 0.9461	-153333 0.1239	0.19007 0.0557
Panel 3: 1989 ($n = 120$)			
	REP89	S89	P89
S89	0.18696 0.0409		
P89	0.40401 0.0001	-0.05995 0.5154	
EMS89	-0.06639 0.4713	-0.12224 0.1835	0.19482 0.0330
Panel 4: 1990 ($n = 125$)			
	REP90	S90	P90
S90	0.19198 0.0320		
P90	0.54999 0.0001	-0.05291 0.5579	
EMS90	-0.03764 0.6769	-0.13975 0.1201	0.25748 0.0037
Panel 5: 1991 ($n = 118$)			
	REP91	S91	P91
S91	0.11948 0.1975		
P91	0.43468 0.0001	-0.10937 0.2384	
EMS91	0.04555 0.6243	-0.14140 0.1267	0.37548 0.0001

Table II (Continued)

Panel 6: 1992 (<i>n</i> = 121)			
	REP92	S92	P92
S92	0.10412 0.2558		
P92	0.38932 0.0001	-0.14246 0.1191	
EMS92	-0.00050 0.9956	-0.13616 0.1365	0.10119 0.2694

Index:

SXX = yearly sales in millions of dollars

PXX = yearly profits/yearly sales

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REPXX = yearly Fortune Corporate Reputation Index Number

regulations) rather than a primary focus on stockholders.

In addition, this study extends the research using *Fortune's* Corporate Reputation Index. The results show that the Corporate Reputation Index is a valid indicator of the firm's overall corporate social performance. The significant relationship between CSP and the three organizational variables, which include pollution emissions, demonstrates that the Corporate Reputation Index does represent the environmental pro-activeness of organizations.

Limitations and suggestions for future research

There are a number of limitations in this study that can be addressed in future research. A primary limitation is the use of pollution emissions to measure environmental performance in all sizes of firms. The use of pollution emissions ignores the measurement of environmental performance of firms in relatively low polluting industries. Therefore, this study is biased toward heavy manufacturing firms and limits the generalizability of the results.

In addition, the use of pollution emissions will not capture extraordinary environmental impacts, such as major oil spills and toxic gas releases. However, the focus of this study is to examine

the consistency of the relationship presented over a six year time period. The focus of this study was not to examine the short term measurement of this relationship based on one time unique extraordinary circumstances. Despite these limitations, the authors believe that pollution emissions are a valid proxy to measure the level of environmental performance of an organization. However, the authors suggest that future research should examine other variables which could be used as a proxy for environmental performance.

Another limitation of this study is the bias toward large organizations due to the selection criteria of the firms. Future studies could examine the relationship presented in this study to see if it is also applicable to smaller firms which may be included in the Toxic Release Inventory Report, but not included in the *Fortune* company listing.

Summary

The purpose of this study was to examine the relationship between the corporate social performance (CSP) of an organization and three variables: the size of the organization, the financial performance of the organization, and the environmental performance of the organization. By empirically testing data from 1987 to 1992, the results of the study show that firm size, finan-

TABLE III
Regression analysis results

Panel 1: 1987

Source	DF	Sum of Squares	Mean Square	F Value	Prob > F
Model	3	28.10759	9.36920	13.778	0.0001
Error	107	72.76155	0.068001		
Total	110	100.86914			

R Square = 0.2787

Adjusted R Square = 0.2584

Variable	DF	Parameter Estimate	Standard Error	T for Ho: Parameter = 0	Prob > T
Intercept	1	5.911502	0.15486903	38.171	0.0001
S87	1	0.000017	0.000006	2.055	0.0423
P87	1	0.099607	0.0017580	5.666	0.0001
EMS87	1	-0.00000011	0.000000	-3.398	0.0010

Panel 2: 1988

Source	DF	Sum of Squares	Mean Square	F Value	Prob > F
Model	3	20.16139	6.72046	11.586	0.0001
Error	98	56.84653	0.58007		
Total	101	77.00793			

R Square = 0.2618

Adjusted R Square = 0.2392

Variable	DF	Parameter Estimate	Standard Error	T for Ho: Parameter = 0	Prob > T
Intercept	1	6.177282	0.106402	58.056	0.0001
S88	1	0.000007	0.000004	1.799	0.0752
P88	1	0.046597	0.008410	5.541	0.0001
EMS88	1	-3.927157E-8	0.000000	-0.694	0.4892

Panel 3: 1989

Source	DF	Sum of Squares	Mean Square	F Value	Prob > F
Model	3	19.80151	6.60050	11.134	0.0001
Error	116	68.77015	0.59285		
Total	119	88.57166			

R Square = 0.2236

Adjusted R Square = 0.2035

Variable	DF	Parameter Estimate	Standard Error	T for Ho: Parameter = 0	Prob > T
Intercept	1	6.0451	0.123156	49.085	0.0001
S89	1	0.0000100	0.000004	2.397	1.0181
P89	1	0.082336	0.015590	5.281	0.0001
EMS89	1	-0.0000001	0.000000	-1.526	0.1297

Table III (Continued)

Panel 4: 1990

Source	DF	Sum of Squares	Mean Square	F Value	Prob > F
Model	3	43.56269	14.52090	24.349	0.0001
Error	121	72.15953	0.59636		
Total	124	115.72222			

R Square = 0.3764

Adjusted R Square = 0.3610

Variable	DF	Parameter Estimate	Standard Error	T for Ho: Parameter = 0	Prob > T
Intercept	1	5.800674	0.1028680	56.389	0.0001
S90	1	0.000010	0.0000036	2.770	0.0065
P90	1	0.106152	0.0130791	8.116	0.0001
EMS90	1	-0.0000002	0.0000001	-2.200	0.0297

Panel 5: 1991

Source	DF	Sum of Squares	Mean Square	F Value	Prob > F
Model	3	24.60510	8.20170	11.294	0.0001
Error	114	82.78313	0.72617		
Total	117	107.38823			

R Square = 0.2291

Adjusted R Square = 0.2088

Variable	DF	Parameter Estimate	Standard Error	T for Ho: Parameter = 0	Prob > T
Intercept	1	6.063533	0.1055127	57.467	0.0001
S91	1	0.000008	0.0000041	1.886	0.0618
P91	1	0.054285	0.0097211	5.584	0.0001
EMS91	1	-8.061886E-8	-1.329	0.1864	

Panel 6: 1992

Source	DF	Sum of Squares	Mean Square	F Value	Prob > F
Model	3	18.34049	6.11350	8.444	0.0001
Error	117	84.71031	0.72402		
Total	120	103.05080			

R Square = 0.1780

Adjusted R Square = 0.1569

Variable	DF	Parameter Estimate	Standard Error	T for Ho: Parameter = 0	Prob > T
Intercept	1	6.249765	0.100076	62.450	0.0001
S92	1	0.000007383	0.000004	1.879	0.0628
P92	1	0.049257	0.010105	4.875	0.0001
EMS92	1	-1.6939E-8	0.000000	-0.243	0.8088

Index:

SXX = yearly sales in millions of dollars.

PXX = yearly profits/yearly sales.

EMSXX = yearly pollution emissions/yearly sales.

cial performance and environmental performance do impact the level of corporate social performance.

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