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The impact of corporate social responsibility on employee performance and cost

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Abstract

Purpose – The purpose of our paper is to empirically examine the conjectures, which prior literature suggests, that employees work more productively in socially responsible companies and employees are willing to work for less when they work for these companies.

Design/methodology/approach – This study uses ordinary least squares regression to examine the relationship between corporate social responsibility (CSR) and employee performance and between CSR and employee cost. Further, 2SLS is used to address the endogeneity issue.

Findings – The results indicate a positive relation between CSR and employee performance, suggesting that employees in socially responsible companies generate better operating performance than their peers in less socially responsible companies. Findings also reveal that socially responsible companies incur higher labor cost.

Research limitations/implications – First, the CSR ratings constructed by KLD Inc. are an approximate measure of CSR performance. Better CSR measures may yield stronger results. Additionally, the sample firms in our study are relatively large firms. Caution needs to be exercised when readers generalize these conclusions. Finally, this sample only consists of public firms. Whether these conclusions hold in private firms remains unknown. The above issues can be investigated in future studies.

Practical implications – The findings of our study should interest managers who contemplate engaging in socially responsible activities, investors and financial analysts who assess firm performance and policymakers who design and implement guidelines on CSR programs.

Originality/value – This is the first paper that directly tests the association between CSR and employee performance and cost. Thus, this study contributes to the CSR literature by offering evidence to show a positive effect of CSR on employee performance. It also contributes to the management accounting literature.

Keywords CSR, Employee, Corporate social responsibility, Employee performance, Employee cost

Paper type Research paper

1. Introduction

Corporate social responsibility (CSR) can be defined as “the voluntary integration of social and environmental concerns into business operations and into their interaction

with stakeholders” (European Commission, 2002). CSR has drawn much attention in recent years. Previous studies have concentrated on the link between CSR and a company’s financial performance. Abundant empirical evidence exists to support a significant positive relation between CSR and a company’s financial performance. That is, engaging in socially responsible activities can improve financial performance. However, little empirical research has focused on the impact of CSR on employees, an important group of stakeholders. Understanding the relation between CSR and employee performance is important because the success of a company largely depends on its employees. Our paper attempts to fill this gap in the literature.

Prior CSR studies (Porter and Kramer, 2006) argue that CSR can increase employee commitment and morale to their company and suggest:

- employees work harder in socially responsible companies; and
- employees are willing to work for less when they work for socially responsible companies.

To empirically examine the above two suggestions, we posit that CSR is positively related to employee performance (*H1*) and is negatively or positively related to employee cost (competing *H2a* & *H2b*). We argue that, even if employees are willing to work for less for socially responsible firms, their salaries and benefits are still driven by other factors such as the attitude of their employers toward them and the supply and demand for labor. It is rather difficult to predict a positive or negative relation between CSR and employee cost without empirical evidence. Thus, we use competing hypotheses (*H2a* and *H2b*) for *H2*.

Following prior studies (Sanchez and Benito-Hernandez, 2015; Stuebs and Sun, 2010), we use two alternative ratios (sales per employee and net income per employee) to capture employee performance and one ratio (employee cost per employee) to measure the employee cost[1]. Employee cost is a unique item in Compustat database because only a small proportion of companies report this item. To maximize the power of our analysis, we use two samples to test our two hypotheses. We obtain financial data for the period 1995 through 2013 from Compustat, and CSR data from the Kinder, Lydenberg and Domini’s database. Our sample for testing *H1* consists of 19,646 firm-year observations, while our sample for testing *H2* consists of only 1,126 firm-year observations due to the sparse population of employee cost data in Compustat.

Our regression analysis based on clustered standard errors reveals that CSR is positively related to our two measures of employee performance (sales per employee and net income per employee) at a significant level, indicating that actively participating in CSR activities can improve employee performance. In other words, employees work more productively in socially responsible companies. Thus, the findings lend support to the employee performance hypothesis (*H1*). For the employee cost hypotheses (*H2a* and *H2b*), we find a positive and significant relation between CSR and employee cost, suggesting that socially responsible companies pay higher salaries to their employees. This evidence supports *H2b* which states that employee cost is higher for socially responsible firms. This finding suggests that socially responsible firms attract talented employees who may possess higher education and better work skills than employees in peer firms. Consequently, socially responsible firms are willing to provide their employees with higher salaries to motivate and retain them.

Although we control for several variables that are potentially related to the dependent and explanatory variables, this procedure may not effectively address the endogeneity issue in our study. It is also possible that certain firm characteristics not included in our model may influence both CSR and employee performance and cost. To address this issue, we perform two additional tests. First, following [Jiraporn et al. \(2014\)](#), we perform a two-stage least squares (2SLS) regression analysis procedure which controls for both possible reverse causality and for the omitted variable bias. We obtain consistent results. That is, both *H1* and *H2b* are supported by the two-stage regression analysis. Second, we perform another test that examines the relationship between CSR in year t and employee performance and cost in year $(t + 1)$. Our findings are consistent. In particular, we find that CSR in year t is positively related to employee performance and cost in year $(t + 1)$ at a significant level, lending further support to *H1* and *H2b*.

This study makes several contributions. First, [Moser and Martin \(2012\)](#) call for CSR research in accounting from the perspective of stakeholder theory of CSR. However, few studies empirically examine the impact of CSR on employees. We provide empirical evidence to answer their call and to support theories in prior research. Our paper contributes to the CSR literature because, to our knowledge, this is the first paper that performs a direct test on the link between CSR and employee performance and cost. Our paper also contributes to the management accounting literature because employee performance and cost are also important topics in management accounting. Finally, from a practical perspective, the results will interest managers who contemplate engaging in socially responsible activities, investors and financial analysts who assess firm performance and policymakers who design and implement guidelines on CSR programs. An interesting conclusion drawn from our findings is that although socially responsible firms have higher employee cost (per employee) than peer firms, their employees perform more productively. Our findings may help explain why socially responsible firms have better financial performance.

The remainder of this paper is organized as follows. Section 2 presents prior literature review and hypotheses development. Section 3 describes the research design, including measurement of the primary independent variable, empirical specification and sample descriptive statistics. Section 4 discusses the results, and Section 5 presents the additional tests. Section 6 concludes the paper.

2. Literature review and hypotheses development

CSR is defined as “the voluntary integration of social and environmental concerns into business operations and into their interaction with stakeholders” ([European Commission, 2002](#)). [Vilanova et al. \(2009\)](#) propose that the definition of CSR consists of five dimensions, including vision, community relations, workplace, accountability and marketplace. For example, vision includes CSR conceptual development, codes and values within the organization. Community relations include partnerships with different stakeholders such as customers, suppliers, etc. Workplace includes human rights and labor practices within the organization. Accountability includes the transparency in communication and financial reporting. Marketplace includes the relationship between CSR and core business processes such as sales, purchasing, etc. A socially responsible firm is more likely to do well in the above five dimensions.

Most CSR studies focus on investigating the relation between CSR and financial performance of firms. Many studies ([Beurden and Gossling, 2008](#); [Cochran and Wood, 1984](#);

Griffin and Mahon, 1997; McGuire *et al.*, 1988; Roman *et al.*, 1999; Waddock and Graves, 1997) form a consensus that a positive relation exists between CSR and financial performance, suggesting that firms that care about their social responsibilities may perform well in today's society.

Some studies examine the impact of CSR on stakeholders, such as customers and employees. For example, Luo and Bhattacharya (2006) find that CSR activities increase customer satisfaction, and customer satisfaction also plays an important role in the relationship between CSR and firm market value. Many other studies focus on the impact of CSR on various aspects of employees. McWilliams and Siegel (2001) suggest that employees are one major stakeholder group demanding CSR. Turban and Greening (1997) survey senior-level students and find that CSR performance can increase the firm's reputation and attractiveness as an employer. Albinger and Freeman (2000) find that CSR performance is positively related to employer attractiveness only for job seekers with a high level of job choice. Their sample consists of 79 highly qualified students, 91 less-qualified students and 30 actual job seekers. Similarly, Greening and Turban (2000) find that prospective job applicants are more likely to pursue jobs from socially responsible firms than from firms not exhibiting CSR. Maignan and Ferrell (2001) survey 120 French managers and document that CSR has a positive impact on employee commitment. Luce *et al.* (2001) document that CSR can increase employer attractiveness. Backhaus *et al.* (2002) find that environment, community relations and diversity have the largest influence on employer attractiveness compared to other CSR components. The influence is strongest among minorities and women. Using a list of firms on the "Best Companies to Work for in America", Edmans (2011) finds that CSR activities can increase employee commitment and satisfaction. Peterson (2004) surveys 278 business professionals and finds CSR is positively related to employee commitment. Koh and Boo (2001) find that employees' commitment levels decrease rapidly once they realize that their firm is only focusing on chasing greater profitability and not following appropriate ethical and legal requirements. The above studies suggest that CSR can have a positive influence on employees, especially their commitment to companies.

Theoretical work (Porter and Kramer, 2006) also suggests that many business programs like CSR programs can increase employee commitment and morale. Stronger employee commitment may encourage positive work attitude that can lead to greater employee productivity. Hence, if companies take responsibility for their impact on stakeholders and actively engage in CSR activities, they can attract or motivate employees who are more likely to work effectively and efficiently compared to employees of firms with less CSR. Given the above discussion, we propose the following employee performance hypothesis:

H1. There is a positive relation between CSR and employee performance.

According to Roberts and Dowling (2002), a firm with good reputation may result in lower labor (employee) costs because of employee attraction. However, this hypothesis has not been tested. In the same spirit, we conjecture that socially responsible firms can be attractive to employees who may be willing to accept lower salaries for employment opportunities with these firms. In other words, it is possible that employees in socially responsible firms are willing to work for less compensation because they share the notion that their job satisfaction does not merely depend on their own profitability or

monetary gains. If that is the case, we expect that the employee cost (per employee) may be lower in socially responsible firms.

On the other hand, socially responsible firms may be willing to provide employees higher compensation because these firms care more about their employees than do peer firms. In addition, socially responsible firms can attract skilled employees who possess higher education and more experience than their peers. Consequently, these skilled employees may demand higher remuneration because of the competition for the limited supply of skilled human capital in the labor market. Therefore, it is plausible that socially responsible firms are more likely than their peers to compensate their employees better to attract and retain them. In that case, we expect that the employee cost (per employee) is higher in CSR firms. Based on the above arguments, we propose the following competing hypotheses related to employee cost:

H2a. There is a negative relation between CSR and employee cost.

H2b. There is a positive relation between CSR and employee cost.

3. Research design

3.1 Measurement of the primary independent variable – CSR

Kinder, Lydenberg and Domini (KLD), a Boston-based consulting firm, has been actively providing rating data on corporate social responsibility since 1991. While many investment managers rely on KLD data when performing social screening, the KLD data are also frequently used in academic literature. It is “the largest multidimensional corporate social performance database available to the public and is used extensively in research on corporate social performance” (Deckop *et al.*, 2006, p. 334). KLD accumulates CSR information for more firms than do other CSR data sources. It has become “the *de facto* corporate social performance research standard at the moment” (Waddock, 2003, p. 369).

KLD provides rating data for approximately eighty variables in seven qualitative areas for each selected firm. The seven areas include community, corporate governance, diversity, employee relations, environment, human rights and product. For each qualitative variable, positive ratings indicate strengths and negative ratings indicate concerns. For example, the environment area contains six strength items (beneficial products, pollution prevention, recycling, clean energy, property plant and equipment and other strengths) and six concern items (hazardous waste, regulatory problems, ozone-depleting chemicals, substantial emissions, agriculture chemicals and other concerns). A complete list of strengths and concerns of CSR variables is provided in Appendix 1.

Consistent with prior research (Chen *et al.*, 2008; Cho *et al.*, 2006; Deckop *et al.*, 2006; Dhaliwal *et al.*, 2011, 2012; Graves and Waddock, 1994; Griffin and Mahon, 1997; Johnson and Greening, 1999; Kim *et al.*, 2012; Nelling and Webb, 2009; Ruf *et al.*, 2001; Shropshire and Hillman, 2007; Waddock and Graves, 1997), we subtract total concerns from total strengths and assign equal weight to each area in calculating a CSR score. Prior studies on CSR (Bergstresser and Philippon, 2006; Klein, 2002) suggest that corporate governance is perceived as a special component of CSR because corporate governance can affect the firm’s performance. Thus, we construct a CSR score (CSR) by excluding the corporate governance component[2]. The CSR index score is computed as follows:

$$\begin{aligned} \text{CSR} = & (\text{Total strengths of Community} - \text{Total concerns of Community}) \\ & + (\text{Total strengths of Diversity} - \text{Total concerns of Diversity}) \\ & + (\text{Total strengths of Employee Relations} - \text{Total concerns of Employee} \\ & \text{Relations}) + (\text{Total strengths of Environment} - \text{Total concerns of} \\ & \text{Environment}) + (\text{Total strengths of Human Rights} - \text{Total concerns of} \\ & \text{Human Rights}) + (\text{Total strengths of Product} - \text{Total concerns of Product}) \end{aligned}$$

3.2 Empirical specification

Petersen (2009) states that the residuals of a given firm may be correlated across years (firm effect), and the residuals of a given year may be correlated across different firms (time effect) in studies using panel data sets. To better control for the firm and time effects, Petersen (2009) suggests the use of clustered standard errors. Following Petersen (2009), we apply clustered standard errors in all regression analyses. We use the following ordinary least squares models to examine the effect of CSR on employee performance and cost:

$$\begin{aligned} \text{EMPPERF} = & \beta_0 + \beta_1 * \text{CSR} + \beta_2 * \text{SIZE} + \beta_3 * \text{ROA} + \beta_4 * \text{LEV} + \beta_5 * \text{MTB} \\ & + \beta_6 * \text{ASSETAGE} + \beta_7 * \text{ADVINT} + \beta_8 * \text{RDINT} + \varepsilon \end{aligned} \quad (1)$$

$$\begin{aligned} \text{EMPCST} = & \beta_0 + \beta_1 * \text{CSR} + \beta_2 * \text{SIZE} + \beta_3 * \text{ROA} + \beta_4 * \text{LEV} + \beta_5 * \text{MTB} \\ & + \beta_6 * \text{ASSETAGE} + \beta_7 * \text{ADVINT} + \beta_8 * \text{RDINT} + \beta_9 * \text{LABINT} \\ & + \beta_{10} * \text{SALARY} + \varepsilon \end{aligned} \quad (2)$$

All variables are defined in Appendix 2. The variable of interest is CSR. Following Sanchez and Benito-Hernandez (2015) and Stuebs and Sun (2010), we use two commonly used ratios, sales per employee (EMPPERF1) and net income per employee (EMPPERF2), to measure employee performance, and use employee cost per employee (EMPCST) to measure employee cost. The formulas to construct each measure are as follows:

$$\begin{aligned} \text{Employee Performance (EMPPERF1)} = & \\ & \frac{\text{Sales (SALE; Compustat Item \#12)}}{\text{Number of Employees (EMP; Compustat Item \#29)}} \end{aligned}$$

$$\begin{aligned} \text{Employee Performance (EMPPERF2)} = & \\ & \frac{\text{Net Income (NI; Compustat Item \#18)} + \text{Employee Costs (XLR; Compustat Item \#42)}}{\text{Number of Employees (EMP; Compustate Item \#29)}} \end{aligned}$$

$$\text{Employee Cost (EMPCST)} = \frac{\text{Employee Costs (XLR; Compustat Item \#42)}}{\text{Number of Employees (EMP; Compustat Item \#29)}}$$

For example, Delta Air Lines, Inc. reported sales (SALE) as \$18,966 million, net income (NI) as \$1,612 million, employee costs (XLR) as \$4,189 million and number of employees as 55,044 in 2007. To calculate EMPPERF1, we divide sales by the number of employees to get \$344.6 thousand per employee. For EMPPERF2, we first add net income to employee costs and then divide by the number of employees to get \$105.4 thousand per

employee. For EMPNST, we divide employee costs by the number of employees to get a cost of \$76.1 thousand per employee.

To test the employee performance hypothesis (*H1*), we analyze the coefficient (β_1) on CSR in Model (1). To the extent that employees are more productive in socially responsible firms, we expect a positive and significant coefficient on CSR. To test the employee cost hypothesis (*H2*), we analyze the coefficient (β_1) on CSR in Model (2). If *H2a* is valid, we expect a negative and significant β_1 . If *H2b* is valid, then we expect a positive and significant β_1 . In addition to the variable of interest, we also control for factors that are found associated with employee variables and CSR performance in prior research. Specifically, following Jiraporn *et al.* (2014), we control for firm size (natural log of total assets), firm performance (ROA), risk (LEV) and growth (MTB). Cochran and Wood (1984) suggest that CSR performance is related to the age of long-term assets. That is, socially responsible firms have newer assets. Thus, we include the age of long-term assets (ASSETAGE). Prior studies (Kim *et al.*, 2012; McWilliams and Siegel, 2001; Padgett and Galan, 2010) suggest that advertising intensity and R&D intensity may play an important role in CSR activities. Thus, we include advertising intensity (ADVINT) and R&D intensity (RDINT) in the regression models. In Model 2, we include labor intensity (LABINT) because employee performance may vary depending on labor intensity across industries[3]. For example, employee performance (e.g. sales per employee) is lower in labor-intensive industries (e.g. restaurants) and is higher in high-tech industries. Last, we include average salaries by state in the USA (SALARY) in Model 2 because the average salaries in some states are higher than those in other states.

3.3 Sample selection and descriptive statistics

We begin our sample selection process by collecting all firms' CSR data contained in KLD including the seven major areas, for the period of 1995-2013. Next, we use Compustat to obtain financial statement data, which include employee costs, number of employees, sales, net income, total assets, long-term liabilities, book value, number of common shares outstanding, share price at fiscal-year end, total net value of property, plant and equipment, total gross value of property, plant and equipment, advertising expenses and R&D expenses. We merge the two samples. To maximize the power of our analysis, we use separate samples derived from the merged data set to test each of our two hypotheses. Our sample for testing *H1* consists of 19,646 firm-year observations, while our sample for testing *H2* consists of 1,126 firm-year observations due to the sparse population of labor cost data.

Tables I-III reports the descriptive statistics of sample firms for our test of *H1*. Table I reports the mean, standard deviation, 25th percentile, median and 75th percentile of the following variables: EMPPERF1, EMPPERF2, CSR, ASSETS, ROA, LEV, MTB, ASSETAGE, ADVINT and RDINT. For example, the mean values of EMPPERF1 and EMPPERF2 are 342.55 and 15.93, respectively. The mean value of CSR is -0.17. The mean value of ROA is 0.04, and the mean value of MTB is 3.37. The average age of long-term assets is 0.49. Table II reports the distribution of firm-year observations by year. For example, there are 308 firm-year observations in 2000 and 1,625 firm-year observations in 2010. Table III reports the distribution of firm-year observations by the first two digits of the SIC code. The most heavily represented industry is Business Services (12.45 per cent, SIC code 73), followed by

Electronic and Other Electronic Equipment (9.66 per cent, SIC code 36) and Chemicals (7.92 per cent, SIC code 28).

Table IV provides the correlation matrices of selected variables for our test of *H1*. Those variables include EMPPERF1, EMPPERF2, CSR, ASSETS, ROA, LEV, MTB, ASSETAGE, ADVINT and RDINT. For each pair of variables, the Pearson and Spearman correlation coefficients and related *p*-values are provided. Both Pearson and Spearman correlations report a significant and positive relation between CSR and

Variable	<i>N</i>	Mean	SD	25 P	Median	75 P
EMPPERF1	19,646	\$342.55	\$292.15	\$169.70	\$255.24	\$401.56
EMPPERF2	19,646	\$15.93	\$52.38	\$2.40	\$11.35	\$28.66
CSR	19,646	-0.17	1.67	-1.00	0.00	1.00
ASSETS	19,646	\$3,911.26	\$16,540.51	\$357.32	\$937.72	\$2,729.75
ROA	19,646	0.04	0.12	0.01	0.05	0.09
LEV	19,646	0.18	0.21	0.00	0.14	0.29
MTB	19,646	3.37	57.42	1.50	2.34	3.82
ASSETAGE	19,646	0.49	0.16	0.38	0.48	0.60
ADVINT	19,646	0.01	0.03	0.00	0.00	0.01
RDINT	19,646	0.05	0.12	0.00	0.01	0.06

Note: See Appendix 2 for variable definitions

Table I.
Descriptive statistics
of sample firms for
H1: sample
descriptive statistics
(1995-2013)

Year	# of observations	% of sample	Cumulative (%)
1995	272	1.38	1.38
1996	289	1.47	2.86
1997	284	1.45	4.30
1998	290	1.48	5.78
1999	301	1.53	7.31
2000	308	1.57	8.88
2001	505	2.57	11.45
2002	537	2.73	14.18
2003	1,495	7.61	21.79
2004	1,557	7.93	29.72
2005	1,532	7.80	37.51
2006	1,518	7.73	45.24
2007	1,492	7.59	52.84
2008	1,507	7.67	60.51
2009	1,603	8.16	68.67
2010	1,625	8.27	76.94
2011	1,557	7.93	84.86
2012	1,591	8.10	92.96
2013	1,383	7.04	100.00
	19,646	100.00	

Note: See Appendix 2 for variable definitions

Table II.
Descriptive statistics
of sample firms for
H1: distribution of
firm-year
observations by year

RAF 14,3	Two-digit SIC	Industry description	# of observations	% of sample	Cumulative (%)
	01	Agricultural production—crops	49	0.25	0.25
	02	Agricultural production—livestock	8	0.04	0.29
	07	Agricultural services	11	0.06	0.35
270	10	Metal mining	69	0.35	0.70
	12	Coal mining	55	0.28	0.98
	13	Oil & gas extraction	542	2.76	3.74
	14	Mining & quarrying—nonmetallic minerals	60	0.31	4.04
	15	Building construction—gen contractors	109	0.55	4.60
	16	Heavy construction except building	118	0.60	5.20
	17	Construction-special trade contractors	65	0.33	5.53
	20	Food & kindred products MFRS	512	2.61	8.13
	21	Tobacco products MFRS	34	0.17	8.31
	22	Textile mill products MFRS	64	0.33	8.63
	23	Apparel & other finished products-MFRS	215	1.09	9.73
	24	Lumber & wood prods MFRS	152	0.77	10.50
	25	Furniture & fixtures MFRS	175	0.89	11.39
	26	Paper & allied products MFRS	312	1.59	12.98
	27	Printing publishing & allied industries	333	1.70	14.67
	28	Chemicals & allied products MFRS	1,556	7.92	22.59
	29	Petroleum refining & related INDS MFRS	78	0.40	22.99
	30	Rubber & miscellaneous plastics MFRS	202	1.03	24.02
	31	Leather & leather product MFRS	104	0.53	24.55
	32	Stone clay glass & Concrete prods MFRS	134	0.68	25.23
	33	Primary metal industries MFRS	334	1.70	26.93
	34	Fabricated metal products MFRS	329	1.67	28.61
	35	Industrial & commercial machinery MFRS	1,538	7.83	36.43
	36	Electronic & other electrical equip MFR	1,897	9.66	46.09
	37	Transportation equipment MFRS	627	3.19	49.28
	38	Measuring & analyzing instruments-MFRS	1,522	7.75	57.03
	39	Miscellaneous manufacturing INDS MFRS	204	1.04	58.07
	40	Railroad transportation	21	0.11	58.17
	41	Local/suburban transit & HWY passenger	10	0.05	58.23
	42	Motor freight transportation/warehouse	43	0.22	58.44
	44	Water transportation	79	0.40	58.85
	45	Transportation by air	142	0.72	59.57
	47	Transportation services	108	0.55	60.12
	48	Communications	623	3.17	63.29
	49	Electric gas & sanitary services	152	0.77	64.06
Table III.	50	Wholesale trade-durable goods	492	2.50	66.57
Descriptive statistics	51	Wholesale trade-nondurable goods	195	0.99	67.56
of sample firms for	52	Building materials & hardware	72	0.37	67.93
<i>HI</i> : distribution of	53	General merchandise stores	207	1.05	68.98
firm-year	54	Food stores	173	0.88	69.86
observations by	55	Automotive dealers & service stations	204	1.04	70.90
industry (1995-2013)					(continued)

Two-digit SIC	Industry description	# of observations	% of sample	Cumulative (%)
56	Apparel & accessory stores	394	2.01	72.91
57	Home furniture & furnishings stores	144	0.73	73.64
58	Eating & drinking places	264	1.34	74.98
59	Miscellaneous retail	487	2.48	77.46
60	Depository institutions	50	0.25	77.72
61	Nondepository credit institutions	60	0.31	78.02
62	Security & commodity brokers	101	0.51	78.54
63	Insurance carriers	181	0.92	79.46
64	Insurance agents brokers & service	57	0.29	79.75
65	Real estate	78	0.40	80.14
67	Holding & other investment offices	82	0.42	80.56
70	Hotels rooming houses & camps	37	0.19	80.75
72	Personal services	89	0.45	81.20
73	Business services	2,446	12.45	93.65
75	Auto repair services & parking	51	0.26	93.91
78	Motion pictures	99	0.50	94.42
79	Amusement & recreation services	204	1.04	95.45
80	Health services	303	1.54	97.00
81	Legal services	8	0.04	97.04
82	Educational services	125	0.64	97.67
83	Social services	26	0.13	97.81
87	Engineering & accounting & MGMT SVCS	402	2.05	99.85
99	Nonclassified establishments	29	0.15	100.00
	Total	19,646	100.00	

Note: See Appendix 2 for variable definitions

Table III.

employee performance (EMPPERF1 and EMPPERF2). The positive relations offer descriptive support to the employee performance (*H1*).

Tables V-VII reports the descriptive statistics of sample firms for our test of *H2*. Table V reports the mean, standard deviation, 25th percentile, median and 75th percentile of the following variables: EMPCST, CSR, ASSETS, ROA, LEV, MTB, ASSETAGE, ADVINT, RDINT and LABINT. For example, the mean value of EMPCST is 65.40. The mean value of CSR is -0.08 . Table VI reports the distribution of firm-year observations by year. For example, there are 16 firm-year observations in 2000 and 100 firm-year observations in 2010. Table VII reports the distribution of firm-year observations by the first two digits of the SIC code. The most heavily represented industry is Eating and Drinking (12.43 per cent, SIC code 58), followed by Transportation by Air (9.33 per cent, SIC code 45) and Health Services (7.46 per cent, SIC code 84).

Table VIII presents the correlation matrices of selected variables for our test of *H2*. The variables include EMPCST, CSR, ASSETS, ROA, LEV, MTB, ASSETAGE, ADVINT, RDINT, LABINT and SALARY. Both Pearson and Spearman correlations report a significant and positive relation between CSR and EMPCST. The positive relation offers descriptive support to *H2b* which states that socially responsible firms incur higher employee cost.

Table IV.
Correlations among
selected variables for
H1 (1995-2013)

Variables	EMPPERF1	EMPPERF2	CSR	ASSETS	ROA	LEV	MTB	ASSETAGE	ADVINT	RDINT
EMPPERF1		0.3554 <0.0001	0.0036 0.0618 0.0697	0.0734 <0.0001 0.0704	0.0609 <0.0001 0.6512	0.0287 <0.0001 -0.0697	-0.0078 0.2725 -0.0036	0.0598 <0.0001 0.0696	0.0141 0.0486 0.0134	-0.0484 <0.0001 -0.2533
EMPPERF2	0.4407		<0.0001	<0.0001 0.1428	<0.0001 0.0693	<0.0001 -0.0311	0.6189 0.0097	<0.0001 -0.0219	0.0596 0.0795	<0.0001 0.0320
CSR	0.0015 0.0083	0.0804 <0.0001		<0.0001	<0.0001 0.0200	<0.0001 0.0619	0.1751 -0.0003	0.0021 0.0675	<0.0001 0.0095	<0.0001 -0.0395
ASSETS	0.1153 0.0460	0.1621 <0.0001	0.2265 <0.0001		0.0051 0.0051	<0.0001 -0.1388	0.9656 -0.0080	<0.0001 0.0567	0.1846 0.0160	<0.0001 -0.3255
ROA	<0.0001 0.0149	<0.0001 -0.1004	<0.0001 0.0923	<0.0001 0.0506		<0.0001	0.2653 0.0009	<0.0001 0.1742	0.0248 0.0136	<0.0001 -0.1473
LEV	0.0371	<0.0001	0.3301	<0.0001	-0.2198	<0.0001	0.9051	<0.0001	0.0563	<0.0001
MTB	0.0131	0.2846	0.1162	0.0006	0.4048	-0.1045		-0.0071	0.0018	0.0238
ASSETAGE	0.0663	<0.0001	<0.0001	0.9386	<0.0001	<0.0001		0.3212	0.8022	0.0008
	0.0102	0.0484	-0.0184	0.2224	0.0107	0.2313	0.0259		-0.0142	-0.1700
ADVINT	0.1539	<0.0001	0.0098	<0.0001	0.1343	<0.0001	0.0003	-0.0204	0.0464	<0.0001
	-0.0462	-0.0373	0.0800	-0.0171	0.0409	-0.0450	0.0658			-0.0404
RDINT	<0.0001	<0.0001	<0.0001	0.0163	<0.0001	<0.0001	<0.0001	0.0043		<0.0001
	0.0832	0.0357	0.0777	-0.1670	-0.0701	-0.2931	0.1878	-0.2606	-0.0354	
	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Notes: For each cell above (below) the diagonal, the Pearson (Spearman) correlation is in the top row of the cell, and the p -value is in the bottom row of the cell; see Appendix 2 for variable definitions

4. Empirical results

Table IX reports findings for our test of *H1* proposing a positive relation between CSR and employee performance for our sample period. We use two employee performance measures in the regression analysis. Columns for EMPPERF1 and EMPPERF2 in Table IX present our findings based on each measure, respectively. The regression results based on clustered standard errors indicate that CSR is positively (4.1572; 0.9469) and significantly ($p = 0.0003$; $p < 0.0001$) related to EMPPERF1 and EMPPERF2, respectively. These findings suggest employees work more productively in

Variable	N	Mean	SD	25 P	Median	75 P
EMPCST	1,126	\$65.40	\$56.98	\$31.82	\$53.63	\$76.10
CSR	1,126	-0.08	1.77	-1.00	0.00	1.00
ASSETS	1,126	\$7,215.13	\$15,278.99	\$573.35	\$1,555.81	\$5,325.15
ROA	1,126	0.05	0.08	0.02	0.05	0.10
LEV	1,126	0.22	0.19	0.06	0.20	0.33
MTB	1,126	4.98	43.65	1.54	2.51	4.03
ASSETAGE	1,126	0.55	0.17	0.42	0.54	0.67
ADVINT	1,126	0.01	0.02	0.00	0.00	0.01
RDINT	1,126	0.01	0.03	0.00	0.00	0.00
LABINT	1,126	0.26	0.14	0.17	0.23	0.34

Note: See Appendix 2 for variable definitions

Table V.
Descriptive statistics
of sample firms for
H2: sample
descriptive statistics
(1995-2013)

Year	# of observations	% of sample	Cumulative (%)
1995	34	3.02	3.02
1996	38	3.37	6.39
1997	32	2.84	9.24
1998	26	2.31	11.55
1999	16	1.42	12.97
2000	16	1.42	14.39
2001	18	1.60	15.99
2002	28	2.49	18.47
2003	57	5.06	23.53
2004	75	6.66	30.20
2005	76	6.75	36.94
2006	82	7.28	44.23
2007	74	6.57	50.80
2008	82	7.28	58.08
2009	89	7.90	65.99
2010	100	8.88	74.87
2011	99	8.79	83.66
2012	102	9.06	92.72
2013	82	7.28	100.00
	1,126	100.00	

Note: See Appendix 2 for variable definitions

Table VI.
Descriptive statistics
of sample firms for
H2: distribution of
firm-year
observations by year

RAF 14,3	Two-digit SIC	Industry description	# of obs.	% of sample	Cumulative (%)
	12	Coal mining	7	0.62	0.62
	13	Oil & gas extraction	21	1.87	2.49
	16	Heavy construction except building	17	1.51	4.00
274	20	Food & kindred products MFRS	52	4.62	8.61
	22	Textile mill products MFRS	3	0.27	8.88
	24	Lumber & wood prods MFRS	11	0.98	9.86
	26	Paper & allied products MFRS	17	1.51	11.37
	27	Printing publishing & Allied industries	60	5.33	16.70
	28	Chemicals & allied products MFRS	46	4.09	20.78
	29	Petroleum refining & related INDS MFRS	2	0.18	20.96
	30	Rubber & miscellaneous plastics MFRS	11	0.98	21.94
	33	Primary metal industries MFRS	17	1.51	23.45
	35	Industrial & commercial machinery MFRS	27	2.40	25.84
	36	Electronic & other electrical equip MFR	15	1.33	27.18
	37	Transportation equipment MFRS	33	2.93	30.11
	38	Measuring & analyzing instruments-MFRS	15	1.33	31.44
	40	Railroad transportation	21	1.87	33.30
	41	Local/suburban transit & HWY passenger	1	0.09	33.39
	42	Motor freight transportation/warehouse	17	1.51	34.90
	44	Water transportation	5	0.44	35.35
	45	Transportation by air	105	9.33	44.67
	47	Transportation services	46	4.09	48.76
	48	Communications	11	0.98	49.73
	49	Electric gas & sanitary services	3	0.27	50.00
	50	Wholesale trade-durable goods	10	0.89	50.89
	51	Wholesale trade-nondurable goods	7	0.62	51.51
	54	Food stores	4	0.36	51.87
	55	Automotive dealers & service stations	16	1.42	53.29
	58	Eating & drinking places	140	12.43	65.72
	59	Miscellaneous retail	14	1.24	66.96
	60	Depository institutions	13	1.15	68.12
	61	Nondepository credit institutions	55	4.88	73.00
	62	Security & commodity brokers	38	3.37	76.38
	63	Insurance carriers	12	1.07	77.44
	64	Insurance agents brokers & service	15	1.33	78.77
	65	Real estate	2	0.18	78.95
	67	Holding & other investment offices	13	1.15	80.11
	73	Business services	82	7.28	87.39
	75	Auto repair services & parking	4	0.36	87.74
	78	Motion pictures	7	0.62	88.37
	79	Amusement & recreation services	8	0.71	89.08
	80	Health services	84	7.46	96.54
	82	Educational services	9	0.80	97.34
	87	Engineering & accounting & MGMT SVCS	29	2.58	99.91
	99	Nonclassified establishments	1	0.09	100.00
		Total	1,126	100.00	

Table VII.
Descriptive statistics
of sample firms for
H2: distribution of
firm-year
observations by
Industry (1995-2013)

Notes: See [Appendix 2](#) for variable definitions

	EMPCST	CSR	ASSETS	ROA	LEV	MTB	ASSETAGE	ADVINT	RDINT	LABINT	SALARY
EMPCST		0.0250 <i>0.0401</i>	0.0846 <i>0.0045</i>	-0.0591 <i>0.0474</i>	-0.1150 <i>0.0001</i>	-0.0322 <i>0.2808</i>	-0.1843 <i><0.0001</i>	-0.1823 <i><0.0001</i>	0.1212 <i><0.0001</i>	0.3111 <i><0.0001</i>	-0.0734 <i>0.0137</i>
CSR	0.0535 <i>0.0729</i>		0.2823 <i><0.0001</i>	0.0441 <i>0.1393</i>	-0.0312 <i>0.2953</i>	-0.0404 <i>0.1760</i>	-0.0075 <i>0.8004</i>	0.1790 <i><0.0001</i>	0.1060 <i>0.0004</i>	0.0127 <i>0.6710</i>	0.1570 <i><0.0001</i>
ASSETS	0.2481 <i><0.0001</i>	0.2828 <i><0.0001</i>		-0.0095 <i>0.7497</i>	0.0672 <i>0.0242</i>	-0.0117 <i>0.6960</i>	0.0367 <i>0.2188</i>	0.0186 <i>0.5324</i>	0.2709 <i><0.0001</i>	-0.1251 <i><0.0001</i>	-0.0114 <i>0.7032</i>
ROA	-0.1790 <i><0.0001</i>	0.0826 <i>0.0019</i>	-0.0891 <i>0.0028</i>		-0.1744 <i><0.0001</i>	0.0087 <i>0.7719</i>	-0.0663 <i>0.0261</i>	0.1815 <i><0.0001</i>	0.0591 <i>0.0473</i>	-0.0914 <i>0.0021</i>	-0.0231 <i>0.4392</i>
LEV	-0.0713 <i>0.0167</i>	-0.0080 <i>0.7892</i>	0.3334 <i><0.0001</i>	-0.3052 <i><0.0001</i>		0.0752 <i>0.0116</i>	0.2344 <i><0.0001</i>	0.0829 <i>0.0054</i>	-0.1187 <i><0.0001</i>	-0.1044 <i>0.0004</i>	-0.0939 <i>0.0016</i>
MTB	-0.1067 <i>0.0003</i>	0.1558 <i><0.0001</i>	0.0674 <i>0.0238</i>	0.5580 <i><0.0001</i>	-0.1227 <i><0.0001</i>		-0.0050 <i>0.8660</i>	0.0476 <i>0.1105</i>	-0.0039 <i>0.8958</i>	0.0220 <i>0.4602</i>	0.0319 <i>0.2843</i>
ASSETAGE	-0.2080 <i><0.0001</i>	-0.0132 <i>0.6577</i>	0.1853 <i><0.0001</i>	-0.1135 <i>0.0001</i>	0.2770 <i><0.0001</i>	-0.0465 <i>0.1190</i>		0.0455 <i>0.1270</i>	-0.1194 <i><0.0001</i>	-0.2117 <i><0.0001</i>	0.0700 <i>0.0188</i>
ADVINT	-0.3517 <i><0.0001</i>	0.0909 <i>0.0023</i>	-0.0693 <i>0.0200</i>	0.1810 <i><0.0001</i>	0.0655 <i>0.0279</i>	0.1976 <i><0.0001</i>	0.1658 <i><0.0001</i>		0.0229 <i>0.4418</i>	-0.0800 <i>0.0072</i>	-0.0681 <i>0.0223</i>
RDINT	0.1197 <i><0.0001</i>	0.0590 <i>0.0477</i>	0.3171 <i><0.0001</i>	0.0863 <i>0.0037</i>	-0.0506 <i>0.0900</i>	0.1696 <i><0.0001</i>	-0.1642 <i><0.0001</i>	-0.0202 <i>0.4992</i>		-0.0674 <i>0.0238</i>	0.0215 <i>0.4715</i>
LABINT	0.1260 <i><0.0001</i>	0.0144 <i>0.6304</i>	-0.1744 <i><0.0001</i>	-0.0933 <i>0.0017</i>	-0.1315 <i><0.0001</i>	-0.1007 <i>0.0007</i>	-0.1531 <i><0.0001</i>	-0.0693 <i>0.0200</i>	-0.1494 <i><0.0001</i>		0.0002 <i>0.0001</i>
SALARY	-0.1200 <i><0.0001</i>	0.1512 <i><0.0001</i>	0.0584 <i>0.0501</i>	0.0075 <i>0.8008</i>	-0.0490 <i>0.1003</i>	0.0418 <i>0.1611</i>	0.0534 <i>0.0732</i>	-0.0462 <i>0.1211</i>	0.0145 <i>0.6261</i>	-0.1079 <i>0.0003</i>	

Notes: For each cell above (below) the diagonal, the Pearson (Spearman) correlation is in the top row of the cell, and the p -value is in the bottom row of the cell; see Appendix 2 for variable definitions

Variable	EMPPERF1	EMPPERF2
Intercept	214.8867	-20.2001
<i>p</i> -value	<0.0001	<0.0001
CSR	4.1572***	0.9467***
<i>p</i> -value	0.0003	<0.0001
SIZE	13.4361***	2.6771***
<i>p</i> -value	<0.0001	<0.0001
ROA	138.5125***	274.4804***
<i>p</i> -value	<0.0001	<0.0001
LEV	-24.6121**	-4.8172
<i>p</i> -value	0.0153	0.2721
MTB	-0.0152	0.0027
<i>p</i> -value	0.4865	0.5482
ASSETAGE	67.0366***	7.1831***
<i>p</i> -value	<0.0001	0.0053
ADVINT	662.5351***	48.3661***
<i>p</i> -value	<0.0001	<0.0001
RDINT	29.8775*	-40.4918***
<i>p</i> -value	0.0773	<0.0001
Obs.	19,646	19,646
<i>R</i> ²	0.2649	0.4800
Industry	YES	YES
Year	YES	YES

Table IX.
CSR and employee
performance (*HI*)
(1995-2013)

Notes: Significant at: *10, **5 and ***1% levels, respectively; we use clustered standard errors in our regressions following Peterson (2009); see Appendix 2 for variable definitions

socially-responsible firms. Thus, the findings based on the two measures of employee performance support *H1*.

Table X presents results of our test of *H2a* (*H2b*) that predicts a negative (positive) relation between CSR and employee cost (EMPCST). The findings from Table X shows that CSR is positively (1.7006) related to EMPCST at a significant level ($p = 0.0294$), supporting *H2b*. This evidence suggests that socially responsible firms pay higher salaries to employees as compared to their peer firms. These higher salaries may result from the demand from employees for higher compensation or from the willingness of socially responsible firms to pay more to their employees. We argue that the latter is more likely to be the driving force because firms with higher CSR performance tend to strive to satisfy all stakeholders including their employees.

5. Additional tests

Although we control for several variables that are possibly related to our dependent and explanatory variables, this procedure may not effectively address the endogeneity issue in our prior tests. For example, on one hand, firms with better CSR performance may attract skilled employees and motivate them to work more productively, resulting in higher employee performance. On the other hand, firms with better employee performance have more financial resources to invest in socially responsible activities, thus leading to higher CSR performance. It is unclear whether the direction of causality runs from CSR to employee performance (cost) or

Parameter	Estimate	<i>t</i> -value	Pr > <i>t</i>
Intercept	28.2468	2.00	0.0457
CSR	1.7006	2.18**	0.0294
SIZE	1.3164	1.21	0.2258
ROA	12.7046	0.85	0.3975
LEV	-22.1809	-3.01***	0.0027
MTB	-0.0045	-0.75	0.4563
ASSETAGE	5.0753	0.53	0.5929
ADVINT	-108.2690	-1.35	0.1760
RDINT	270.9666	2.06**	0.0396
LABINT	129.5043	8.34***	<0.0001
SALARY	0.0000	-0.08	0.9333
Obs.	1,126		
R^2	0.2649		
Industry	YES		
Year	YES		

Notes: Significant at: *10, **5 and ***1% levels, respectively; we use clustered standard errors in our regressions following Peterson (2009); see Appendix 2 for variable definitions.

Table X.
CSR and employee
cost (*H2*) (1995-2013)

vice versa. To address the endogeneity issue, we perform two additional tests to examine whether certain firm characteristics not included in our model may influence both CSR and employee performance and cost.

5.1 2SLS regression analysis

2SLS regression analysis requires identifying an instrumental variable which is highly correlated to a firm's CSR score but does not influence firm performance except through CSR. Following Jiraporn *et al.* (2014), we use the average CSR performance of the surrounding firms in the same first three-digit zip code. This variable is associated with the CSR score of a given firm, but does not relate to the employee performance (cost) of that firm. In the first stage of 2SLS regression analysis, we estimate CSR score using the average CSR score of the surrounding firms in the same first three-digit zip code. We include all of the control variables, as well as the industry and year dummy variables. In the second stage of 2SLS regression analysis, we use the instrumented values of CSR from the first stage as an independent variable in the regression. We also include the same control variables in the second stage regression.

Table XI reports the 2SLS regression analysis results for our test of *H1*: impact of CSR on employee performance. The first two result columns report findings of the first- and second-stage regressions for the relation between CSR and EMPPERF1. In the Stage 1 regression, the average CSR score is positively related (0.7670) to individual CSR score at a significant level ($p < 0.0001$). In Stage 2 regression, the coefficient of the instrumented CSR score is positively (4.1571) and highly significant ($p = 0.0005$), suggesting that employees in firms with higher CSR performance work more productively. The last two columns report results of the first- and second-stage regressions for the relation between CSR and EMPPERF2. In Stage 2 regression, the coefficient of the instrumented CSR score is positively (0.9467) and highly significant ($p < 0.0001$), suggesting that employees in socially

RAF 14,3		Stage 1 CSR	Stage 2 EMPPERF1	Stage 1 CSR	Stage 2 EMPPERF2
	Intercept	-1.5603	214.8867	-1.5603	-20.2001
	<i>p</i> -value	<0.0001	<0.0001	<0.0001	<0.0001
	Average CSR (first 3 zip)	0.7670***		0.7670***	
	<i>p</i> -value	<0.0001		<0.0001	
278	CSR (instrumented)		4.1571***		0.9467***
	<i>p</i> -value		0.0005		<0.0001
	SIZE	0.2761***	13.4361***	0.2761***	2.6771***
	<i>p</i> -value	<0.0001	<0.0001	<0.0001	<0.0001
	ROA	0.4606***	138.5125***	0.4606***	274.4804***
	<i>p</i> -value	<0.0001	<0.0001	<0.0001	<0.0001
	LEV	-0.4978***	-24.6121**	-0.4978***	-4.8173***
	<i>p</i> -value	<0.0001	0.0124	<0.0001	0.0012
	MTB	0.0000	-0.0152	0.0000	0.0027
	<i>p</i> -value	0.8889	0.6266	0.8889	0.5614
	ASSETAGE	-0.4867***	67.0366***	-0.4867***	7.1831***
	<i>p</i> -value	<0.0001	<0.0001	<0.0001	0.0002
	ADVINT	1.6170***	662.5351***	1.6170***	48.3661***
	<i>p</i> -value	<0.0001	<0.0001	<0.0001	<0.0001
	RDINT	0.3046***	29.8775	0.3046***	-40.4918***
	<i>p</i> -value	0.0067	0.1273	0.0067	<0.0001
	Obs.	19,646	19,646	19,646	19,646
	Adjusted <i>R</i> ²	0.2635	0.2622	0.2635	0.4781
	Industry	YES	YES	YES	YES
	Year	YES	YES	YES	YES

Table XI.
2SLS analysis of the effect of CSR on employee performance and cost (1995-2013): CSR on Employee Performance (*H1*)

Notes: Significant at: *10, **5 and ***1% levels, respectively; we use clustered standard errors in our regressions following Peterson (2009); see Appendix 2 for variable definitions

responsible firms demonstrate better work performance. Taken together, the results from 2SLS regression analysis in Table XI lend further support to *H1*.

Table XII reports the 2SLS regression analysis results for our test of *H2*: impact of CSR on employee cost. The result columns report findings of the first- and second-stage regressions. In the Stage 1 regression, the average CSR score (0.7708) is positively associated with individual CSR score at a significant level ($p < 0.0001$). In the Stage 2 regression, the coefficient of the instrumented CSR score is positive and significant (1.7006, $p < 0.05$), suggesting that firms with higher CSR performance pay higher salaries to employees relative to firms with lower CSR performance. Therefore, our findings from 2SLS regression analysis in Panel B provide additional support to *H2b*.

5.2 CSR and future employee performance and cost

We also perform another test to examine the relation between CSR and future employee performance and cost. Specifically, we examine the relation between CSR in year t and employee performance and cost in year $(t + 1)$. We perform this test for two reasons:

- (1) This test can help identify any potential endogeneity issues in our analysis.

Variable	Stage 1 CSR	Stage 2 EMPCST	Impact of corporate social responsibility
Intercept	-3.2883	28.2468	279
<i>p</i> -value	0.0014	0.2813	
Average CSR (first 3 zip)	0.7708***		
<i>p</i> -value	<0.0001		
CSR (instrumented)		1.7006**	
<i>p</i> -value		0.0259	
SIZE	0.3239***	1.3164	
<i>p</i> -value	<0.0001	0.1619	
ROA	-0.0571	12.7046	
<i>p</i> -value	0.9182	0.3722	
LEV	-0.6823**	-22.1809***	
<i>p</i> -value	0.0107	0.0012	
MTB	-0.0011	-0.0045	
<i>p</i> -value	0.2906	0.8676	
ASSETAGE	-0.6784**	5.0753	
<i>p</i> -value	0.0389	0.5438	
ADVINT	13.2113***	-108.2690	
<i>p</i> -value	<0.0001	0.2024	
RDINT	13.0057***	270.9665***	
<i>p</i> -value	<0.0001	<0.0001	
LABINT	0.5157	129.5043***	
<i>p</i> -value	0.2209	<0.0001	
SALARY	0.0000	0.0000	
<i>p</i> -value	0.5729	0.9495	
Obs.	1,126	1,126	
Adjusted R^2	0.3519	0.5878	
Industry	YES	YES	
Year	YES	YES	

Table XII.
2SLS analysis of the
effect of CSR on
employee
performance and cost
(1995-2013): CSR on
Employee Cost ($H2$)

Notes: Significant at: *10, **5 and ***1% levels, respectively; we use clustered standard errors in our regressions following Peterson (2009); see Appendix 2 for variable definitions

- (2) Vilanova *et al.* (2009) argue that CSR is related to firm performance through a learning and innovation cycle.

Thus, there may be a time gap between implementation of CSR programs and employee performance.

Our analyses based on future employee performance and cost produce consistent evidence. Results are not tabulated here. Regressions based on clustered standard errors reveal a positive (4.2633) and significant ($p = 0.0002$) relation between CSR in year t and EMPPERF1 in year $(t + 1)$, and a positive (0.8230) and significant ($p < 0.0001$) relation between CSR in year t and EMPPERF2 in year $(t + 1)$. Using the average CSR score of the surrounding firms in the same three-digit zip code, this positive and significant relation between CSR in year t and EMPPERF1 and EMPPERF2 in year $(t + 1)$ still holds. These findings are in line with the results from our main test of $H1$. For $H2$, we

also find a positive and significant relation between CSR and future employee cost based on the two-stage regressions, lending further support to *H2b*.

6. Conclusion

In this paper, we examine the relation between CSR and employee performance and cost. We find significant and positive relations between CSR and employee performance and between CSR and employee cost. Our findings suggest that:

- employees in socially responsible firms exhibit better operating performance in terms of sales per employee and net income per employee; and
- socially responsible firms, on average, reward their employees with higher salaries.

The results should interest managers who contemplate engaging in CSR programs, investors and financial analysts who assess firm performance and policymakers who design and implement guidelines on CSR. An interesting result of our study is that although socially responsible firms, on average, have higher employee cost (per employee) than peer firms, they experience better financial performance in terms of employee productivity. Our findings may help explain why socially responsible firms experience better financial performance.

This study has several limitations. First, the CSR rating constructed by KLD Inc. is an approximate measure of CSR performance. Better CSR measures may yield stronger results. Second, the sample firms in our study are relatively large firms because KLD Inc. ranks the CSR performance of large firms. Caution needs to be exercised when readers generalize our conclusions. Finally, our sample only consists of public firms. Whether our conclusions hold for private firms remains unknown. The above issues can be investigated in future studies.

Notes

1. Employee cost is excluded from calculating net income.
2. We also use two alternative CSR measures. For example, some prior studies (Kim *et al.*, 2012) suggest that the data availability on human rights may be limited. In addition, the employee relations component may be associated with employee performance and cost. We construct a new CSR score by excluding employee relations and human rights. The results are consistent.
3. We do not include LABINT in Model 1 because labor cost data are sparsely populated in Compustat.

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Further reading

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Appendix 1

Impact of
corporate
social
responsibility

Category	Strengths	Concerns
Community	Generous giving Innovative giving Housing support Education support Peoples relations Non-US giving Voluntary programs Other strengths	Investment controversies Negative economic impact Indigenous people relations Tax disputes Other concerns
Corporate governance	Limited compensation Ownership strength Transparency strength Accountability strength Public policy strength Other strengths	High compensation Ownership concern Transparency concern Accountability concern Public policy concern Other concerns
Diversity	CEO Promotion Board of directors Work-life benefits Women and minority Employment of the disabled Gay and lesbian policies Other strengths	Controversies Non-representation Other concerns
Employee relations	Union relations No-layoff policy Cash profit sharing Employee involvement Retirement benefits Health and safety Other strengths	Union relations Health and safety concern Workforce reductions Retirement benefits concern Other concerns
Environment	Beneficial products Pollution prevention Recycling Clean energy Property, plant and equipment Other strengths	Hazardous waste Regulatory problems Ozone depleting chemicals Substantial emissions Agriculture chemicals Climate change Other concerns
Human rights	Positive record in South Africa Indigenous people relations Labor rights strength Other strengths	South Africa Northern Ireland Burma concern Mexico Labor right concern Indigenous people relations concern Other concerns
Products	Quality R&D, innovation Benefits to economically disadvantages Other strengths	Product safety concern Marketing-contracting concern Antitrust Other concerns

Table AI.
List of the CSR
strengths and
Concerns in KLD
database

Variable	Definition
<i>Dependent variables</i>	
EMPPERF1	Sales (SALE)/Total number of Employees (EMP)
EMPPERF2	Net Income (NI) + Employee Costs (XLR)/Total number of Employees (EMP)
EMPCOST	Employee Costs (XLR)/Total number of Employees (EMP)
<i>Variable of interests</i>	
CSR	Net score of CSR rating, measured as total strengths minus total concerns, based on 6 social rating categories of KLD ratings data: community, diversity, employee relations, environment, human rights and products
<i>Control variables</i>	
SIZE	Log of total assets (Compustat Item #6)
ROA	Net income scaled by total assets (return on assets)
LEV	Long-term debt scaled by total assets
MTB	Market to book equity ratio, measured as market value of equity/book value of equity
ASSETAGE	Net value of property, plant and equity (PPE)/Gross value of PPE
ADVINT	Advertising intensity, (advertising expenses/sales)
RDINT	R&D intensity, (R&D expenses/sales)
LABINT	Labor intensity, (employee costs/sales)
SALARY	Average salary by state
<i>Other variables</i>	
BV	Book value of equity (Compustat Item #60)
SALE	Total sales (Compustat Item #12)
NI	Net Income (Compustat Item #18)
EMP	Total number of employees (Compustat Item #29)
XLR	Total employee costs (Compustat Item #42)
XAD	Total advertising expenses (Compustat Item #45)
XRD	Total research and development expenses (Compustat Item #46)

Table AII.
Variable definition

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