

XIV. ECONOMETRIC CASE STUDIES ON HUMAN RESOURCES AND ORGANIZATIONAL PERFORMANCE

Motivating Employee-Owners in ESOP Firms: Human Resource Policies and Company Performance¹

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Abstract

What enables some employee ownership firms to overcome the free-rider problem and motivate employees to improve performance? This study analyzes the role of human resource policies in the performance of employee stock ownership plan (ESOP) firms, using employee survey data from 13 companies. Between-firm com-

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parisons of 11 ESOP firms show that an index of human resource policies, nominally controlled by management, is related to employee reports of coworker performance and other good workplace outcomes. Within-firm comparisons in two firms show that workers who participate in employee involvement committees are more likely to exert peer pressure on shirking coworkers. We conclude that an understanding of how and when employee ownership works successfully requires a three-pronged analysis of (1) the incentives that ownership gives, (2) the participative mechanisms available to workers to act on those incentives, and (3) the corporate culture that battles against tendencies to free ride.

More than one-fifth of U.S. private-sector employees—24 million workers—own stock in their own companies. Over the past 25 years employee ownership and other compensation arrangements linking worker pay to company performance, including profit sharing, gain-sharing, and broad-based stock options, have increased substantially (Blasi et al. 2003; Freeman and Dube 2000). While, on average, employee ownership firms tend to match or exceed the performance of other similar firms (Kruse and Blasi 1997), there is considerable dispersion of outcomes among employee-owned firms, as evidenced by the bankruptcy of United Airlines (Mackin 2002) contrasted with the continued success of firms like SAIC.²

By tying pay to firm performance, employee ownership can help improve performance by reducing workplace principal-agent problems. But group incentive systems face the free-rider problem, highlighting the weak link between individual effort and rewards. Because standard economic analysis provides no way to resolve the free-rider problem, many researchers agree with Weitzman and Kruse that “something more may be needed—something akin to developing a corporate culture that emphasizes company spirit, promotes group cooperation, encourages social enforcement mechanisms, and so forth” (1990:100). A three-pronged combination of (1) incentives, which must be sufficiently meaningful to workers to motivate them, (2) participation, which must be sufficiently meaningful for workers to make critical decisions, and (3) a workplace environment or company ethos that overcomes, or at least reduces, the free-rider problem appears to be the key to improving performance through employee ownership.

More than 70 large-sample studies have been done on employee ownership in the past two decades (Kruse 2002). Studies of both firm performance and employee attitudes and behavior are split between neutral and favorable findings for employee ownership, with very few negative findings. Meta-analysis indicates that the average increase in productivity associated with employee stock ownership plan (ESOP) adoption is 4.5 percent. But

the wide band of outcomes around the average makes it clear that giving employees an ownership stake does not, in itself, ensure superior employee or firm performance.

This study links employee reports on how ownership plans actually affect their attitudes and behavior to objective company performance measures. Such an approach is rare in productivity studies, in part because employee surveys lack the quantitative output data necessary for a productivity analysis. Employees in worker-owned and participative firms report that their firms perform better than do employees in other firms (Freeman and Dube 2000), but the workers may not have an accurate assessment of their firm's actual performance. It is only by combining evidence from workers and firms—using matched employee-employer data files—that we are likely to make progress in understanding why some ownership plans work while others fail and thus explain the diversity of outcomes from companies with at least nominally similar ownership structures (though, absent a true experiment, there will always remain questions of selection bias and generalizability).

This paper uses survey data from 13 ESOP companies to examine the factors that affect the differential impact of employee ownership on productivity and work behavior. The surveys were conducted at different periods of time by Ownership Associates (OA), a consulting firm, and by our research team.³ The OA survey covers employees and managers in 11 ESOP companies over the period 1996–2002, asking employees about their views and attitudes toward various aspects of their workplace. Company managers filled out a survey on human resource policies, firm performance, and ESOP characteristics. The firms in this survey are relatively small, with an average of 396 employees. There are a total of 2,139 survey respondents from the 11 companies, giving a response rate for workers of 71 percent across all companies. The second dataset contains information on employees in two firms that the National Bureau of Economic Research's (NBER) Shared Capitalism research project surveyed in 2002. Here the focus is on individual variation in how workers respond to ownership and participation and to free-rider behavior on the part of coworkers. Although selection bias in the types of firms that adopt ESOPs and take part in our surveys is a legitimate concern, prior ESOP literature indicates that results are not much affected by selection corrections (Kruse and Blasi 1997). Moreover, by basing our analysis on comparisons within ESOP firms, we potentially avoid errors in interpretation due to selectivity. Also, a set of fairly similar firms with comparable ownership structure provides just the right sample to assess variation within the employee ownership structure.

Our samples are small and thus give results that should be viewed as suggestive. The National Opinion Research Center has completed a national sur-

vey using questions that we devised analogous to those in the current study. This survey has both a representative sample of workers and data that match workers with firms. Thus, this paper is a foray with limited data into an area that will offer new and nationally representative information in the near future.

Between-Company Comparisons on Performance and Human Resource Policies

A growing literature has documented that “innovative human resource practices can improve business productivity,” particularly when the firm combines complementary practices (Ichniowski et al. 1996:322; also see Appelbaum et al. 2000 and Becker et al. 2001). The OA data allow us to analyze the relationship between HR policies and performance, to see whether HR policies can help create a climate that overcomes the free-rider problem in employee ownership firms. As in Freeman and Dube (2000), we use employee-reported performance, but one advantage we have is data on objective company outcomes that can validate the employee reports. We construct three measures based on six items reflecting employee assessments of coworker performance (listed at the bottom of Table 1). These measures vary significantly between firms and (as reported in our longer paper) are positively correlated with industry-adjusted firm performance, particularly with profit margin (.582 to .630), 3-year employment growth (.481 to .621), and 3-year productivity growth (.328 to .373).

There is also substantial dispersion in company-reported HR policies among the 11 OA companies. For example, seven firms have employee task forces, five have employee involvement in new hires, and three have employee representation on the board of directors. Firms also reported on nine methods of sharing information with employees (e.g., newsletters, regular employee meetings, new employee orientations) and other policies such as non-ESOP pension plans, grievance procedures, labor-management training, employee surveys, and bonuses. Because the HR policies are highly correlated and there are more policies than companies in the OA survey, we added together seven of the policies to form an HR index (described at the bottom of Table 1), which has a mean of 3.55 and standard deviation of 1.97.

Are the HR variables linked to performance? Table 1 reports regressions of the three employee-reported performance measures on the HR index and on the use of two practices that did not fit in the index, individual bonuses, and a suggestion system. The results show that the HR index is positively related to worker-reported work effort and significantly different from 0 in five of the six regressions. Individual bonuses are positively related to the outcome variables, whereas suggestion systems are negatively related. We estimate that an increase of 1 standard deviation in the HR index increases the score on

TABLE 1
Predicting Employee-Reported Performance with HR Variables

Dependent Variable	"People at [OurCo] work hard"		Performance index 1 ^a		Performance index 2 ^a	
Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)
HR index ^b	0.109* (0.031)	0.117* (0.039)	0.407* (0.160)	0.449* (0.189)	0.613* (0.288)	0.550* (0.379)
Bonuses based on individual performance	0.596* (0.283)	0.571 (0.297)	2.048 (1.127)	1.913 (1.171)	6.172* (1.506)	6.732* (1.086)
Suggestion system	-0.348* (0.124)	-0.350* (0.143)	-2.048* (0.652)	-2.058* (0.701)	-3.663* (0.407)	-3.907* (0.377)
Performance-related reason for ESOP adoption	-0.127 (0.351)	-0.704 (1.067)	1.495 (1.389)			
Constant	5.078* (0.225)	5.146* (0.320)	18.953* (1.193)	19.333* (1.101)	27.504* (2.112)	26.556* (1.547)
R ²	0.04	0.041	0.074	0.078	0.138	0.141
N	2,139	2,139	2,139	2,139	1,686	1,686
Dependent variable mean	5.66	5.66	20.80	20.80	30.49	30.49
(standard deviation)	(1.37)	(1.37)	(4.43)	(4.43)	(6.49)	(6.49)

Note. Standard errors (in parentheses) adjusted for within-firm correlations among employees.

^aPerformance index 1 sums reported agreement with the statements "People at [OurCo] work hard," "People at [OurCo] care about meeting our customers' needs," "People at this company are willing to make sacrifices to help co-workers," and "Employees at [OurCo] are very committed to the company and its future." Performance index 2 includes these and two more items (reverse-scored) "As long as their jobs are secure, company performance is unimportant to people at [OurCo]" and "[OurCo] employees work less when supervisors are not watching." All items are measured on a 1–7 scale, with 1 = strongly disagree and 7 = strongly agree.

^bThe HR index adds 1 point each for (1) above median on employee involvement index, (2) above median on information index, (3) above median on percent of pay contributed to ESOP, (4) pension other than 401(k), (5) grievance procedure, (6) labor-management training, and (7) employee surveys. The alpha score is .85.

*Significantly different from zero at $p < .05$.

“People at [OurCo] work hard” by about .2, and increases the scores on performance indices 1 and 2 by about .8 and 1.2, respectively. These represent increases of about 15–20 percent of a standard deviation in the performance measures.

In the even-numbered columns, we include a variable for whether the firm introduced the ESOP because of economic performance concerns, which helps address questions of selection bias. Inclusion of this variable makes little difference in the coefficients on the HR variables, though it does slightly weaken the link between performance index 2 and the HR index.

Additional analysis of employee survey data shows that the HR index is positively and significantly linked to perceptions of fairness, coworker relations, good supervision, and worker input and influence. It is not, however, linked to a sense of ownership. Although this could indicate that ownership is irrelevant to actual work performance, we find a strong positive correlation between the sense of ownership and our three outcome measures, both by itself and with the inclusion of the nearly independent HR index. Thus, it appears that feeling of ownership is judged by employees’ actual financial stake in their company, as indicated by positive correlations with percent of company shares owned by the ESOP and ESOP value per employee. A sense of ownership must be backed up by practical implications for the individual employee.

Within-Company Comparisons on Worker Effort and Peer Pressure

In 2002, the NBER Shared Capitalism research project undertook a set of surveys of firms with particular employee ownership structures. At this point, we have data available from two ESOP firms in the 250–500-employee category, with an average response rate from workers of 54 percent. One firm is 100 percent employee owned, and the other is one-third owned by employees. We concentrate on how employee participation on employee involvement (EI) committees and involvement in group decision-making affects responses to free-riding behavior. The key question on our survey relating to employee response to free-riding behavior is:

If you were to see a fellow employee not working as hard or well as he or she should, how likely would you be to:

- Talk directly to the employee
- Speak to your supervisor or management
- Do nothing.

The responses were given on a four-point scale: (1) not at all likely, (2) not very likely, (3) somewhat likely, and (4) very likely. We break down these answers by whether employees participate in EI committees (done by 58 percent in company A and 29 percent in company B) and whether they have received formal training from their employer in the past year (received by 60 percent in company A and 17 percent in company B).

The evidence in Table 2 shows that workers on EI committees are far more likely to talk directly to the employee and much less likely to do nothing than workers who are not on such committees. For example, the mean score for the response of “talk directly” for workers is 0.72 higher among EI participants compared to nonparticipants in company A and 0.50 higher in company B. The results are consistent with the notion that the participation of workers on EI committees leads them to intervene more than other workers when they see someone not doing their job and, most important, to intervene directly to a greater extent than going to a supervisor. The EI participants are also more likely to say they are “willing to work harder than I have to in order to help the company I work for succeed.”

To what extent can we interpret these differences as being causally related to workers’ participation in EI as opposed to some unobserved individual characteristic? One way in which we probe for causality is through a difference-in-differences approach, by comparing the differences based on EI to those based on another aspect of the individual’s work life, namely, the receipt of training. As shown at the bottom of Table 2, the differences in responses to the question about how workers would react to someone not doing their job by whether the worker received training are smaller and statistically weaker than those for EI, supporting the idea that EI is playing an important role. In addition, comparisons based on other survey measures also show smaller differences than those for EI.

Conclusion

Economic theory suggests that by itself ownership is unlikely to greatly affect worker effort and performance. Ownership must be combined with employee involvement and other policies that give workers the power to act on ownership incentives and the disposition to resist the tendency to free ride. Our analysis of worker-reported effort across 11 ESOP firms and of workers within two ESOP firms supports these arguments. We find significant differences in worker assessment of work effort across ESOP firms, which indicate that, even in firms with substantial employee ownership, other factors influence outcomes. Relating worker-reported outcomes to their sense of ownership and an index of HR policies shows that ownership and HR policies are both pos-

TABLE 2
Within-Company Comparisons: Performance Measures by Employee Involvement and Training

Covered by Practice	Company A				Company B			
	Yes (1)	No (2)	Difference (3)	(p value) (4)	Yes (5)	No (6)	Difference (7)	(p value) (8)
A. By whether in employee involvement team, committee, or task force: If co-worker not working well, would: Talk directly to employee (1-4; 4 = very likely) Speak to supervisor or manager (1-4; 4 = very likely) Do nothing (1-4; 4 = very likely) Willing to work harder than I have to in order to help company succeed (1-5; 5 = strongly agree)	2.93	2.21	0.72	(0.000)*	2.59	2.09	0.50	(0.003)*
	2.93	2.21	0.72	(0.000)*	2.59	2.09	0.50	(0.003)*
	2.99	2.63	0.36	(0.005)*	2.75	2.40	0.35	(0.044)*
	1.74	2.22	-0.48	(0.000)*	2.13	2.56	-0.43	(0.018)*
	4.52	4.21	0.31	(0.003)*	4.40	4.18	0.22	(0.133)
N	117	84			59	142		

Covered by Practice	Company A				Company B			
	Yes (1)	No (2)	Difference (3)	(p value) (4)	Yes (5)	No (6)	Difference (7)	(p value) (8)
B. By whether received training in past 12 months: If co-worker not working well, would: Talk directly to employee (1-4; 4 = very likely)	2.77	2.42	0.35	(0.014)*	2.17	2.21	-0.04	(0.834)
Speak to supervisor or manager (1-4; 4 = very likely)	2.96	2.65	0.31	(0.020)	2.50	2.48	0.02	(0.925)
Do nothing (1-4; 4 = very likely)	1.85	2.06	-0.21	(0.138)	2.58	2.41	0.17	(0.407)
Willing to work harder than I have to in order to help company succeed (1-5; 5 = strongly agree)	4.43	4.33	0.10	(0.341)	4.24	4.24	0.00	(0.972)
N	119	79			37	161		

Note. Figures represent average scores on performance measures at left, broken down by scores on employee involvement or training.

* p < .05.

P values are from tests of no difference between those who are and are not covered by the practice.

itively linked to employee reports of workplace performance, which is itself related to company performance.

Our analysis of employee response to coworkers who perform poorly shows that workers on employee involvement committees or who otherwise report being involved in setting goals for their work group are more likely to talk directly with nonperforming workers and are less likely to do nothing. Conceptually, an understanding of how employee ownership works requires a three-pronged analysis of (1) the incentives that ownership gives; (2) the participative mechanisms available to workers to act on those incentives; and (3) incentives/corporate culture that counteracts tendencies to free ride. All firms, whether employee-owned or otherwise, have to combine these three elements to motivate workers to perform as best they can. Employee ownership provides a distinct solution to the incentive problem but must still deal with the participation and free-riding problems.

Notes

1. This paper is part of the National Bureau of Economic Research's Shared Capitalism Research Project, funded by the Russell Sage and Rockefeller Foundations.

2. For a description of SAIC, see <http://www.fed.org/resrclib/articles/entrep.htm>.

3. Ownership Associates, Inc., is a Cambridge, MA, consulting firm "providing strategic and technical advice to groups exploring employee ownership." See www.ownershipassociates.com.

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