

**EMPLOYEE INVOLVEMENT, PRODUCTIVITY,  
AND PROFITABILITY OF THE FIRM**

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## **I. Introduction**

The economic theory of the firm is an elaborate model of the firm's behavior within different market structures. The theory presents a set of decision rules that result in economic profit (value) maximization, but it disregards the human factor and organizational structure, as well as interaction between the two. Economists have not paid much attention to organizational issues since they believe in market control that ultimately eliminates inefficient firms, i.e., those that are not maximizing profits. Economists have considered organizational issues as mere pedantry and, hence, superfluous.

Dissatisfaction with this aspect of the theory has resulted in the development of organizational theory, an interdisciplinary approach devised by sociologists, psychologists, and economists in an effort to better understand organizational issues. The sociological branch focuses on the phenomenon of bureaucracy (large organizations). Psychologists, on the other hand, have focused on organizations experimentally with an eye on an "efficiency" criterion. For instance, psychologists have been interested in issues such as motivation and efficiency in organizations, authority and employee relations, rewards and organizational loyalty, and so forth (Herbert A. Simon [11]). Finally, economists themselves introduced nonpecuniary elements into the theory of the firm (Oliver E. Williamson [14]) that have culminated in the agency theory (Jensen and Meckling [7]).

Furthermore, the industrial strength of countries such as Japan and Germany has placed additional pressure on American corporate managers and economists to reevaluate business methods practiced in the U.S.A. For instance, Japanese success is attributed in part to the Japanese style of management and the internal structure of Japanese firms (Masahiko Aoki [1]). The German practice of labor participation in the management of firms, a process known as "codetermination," has also gained popularity in this country. The international evidence is convincing enough to force us to rethink and develop a behavioral profile of the firm that incorporates the human factor into the firm theory.

Accordingly, this study investigates the extent of employee involvement (EI) in U.S. companies to discover whether or not worker participation has any real value for corporations or if it is only an ephemeral fad.

## **II. Previous Research**

The slow growth of productivity in the U.S. has

motivated organizational theorists to come up with myriad recommendations to improve productivity. Among them is the proposition that labor participation in decision making and problem solving, as well as innovative compensation systems, might be positively correlated with measures of productivity.

In March 1989 the Brookings Institute organized a conference on this subject. Five papers were presented and the overall picture drawn by the experts was a promising one. Martin Weitzman and Douglas Kruse [13] developed a theoretical framework for profit sharing, codetermination, and productivity and reviewed fifteen studies that had reported positive and statistically significant relationships between these programs and the firm's productivity.

After reviewing the historical development of different pay systems, Daniel Mitchell, David Lewin, and Edward Lawler [9] used the Columbia Business Unit Data Set on human resource policies and practices of U.S. corporations in conjunction with Compustat file in a statistical analysis and found an enhanced measure of productivity among firms with profit sharing and active worker participation programs.

Michael Conte and Jan Svejnar [5] questioned the relationship between a firm's productivity and employee stock ownership plans (ESOP) and found the empirical evidence in support of this hypothesis to be weak. However, they concluded that firms with ESOP and active employee involvement could clearly improve their productivities. Finally, David Levine and Laura Tyson [8], as well as Masanori Hashimoto [6], reviewed evidence from other countries, especially Japan, and concluded that employee involvement within a proper corporate culture could generate right results.

As can be seen, these studies report improved productivity among firms with active worker participation, but do not scrutinize the impact of such programs on a firm's profitability and value. However, some recent studies have investigated the value-enhancing aspect of ESOP programs. In a study of 165 cases, Saeyoung Chang [3] reports the average abnormal return rate of 3.66% for the two-day period after the announcement of 165 ESOPs. In another study, Brickley and Hevert [2] consider the determinants of individual stock ownership and conclude that stock ownership motivates employees toward value-enhancing activities. Finally, Conte and Kruse [4] link the presence of ESOP and profit-sharing plans to company performance and conclude that the direct and indirect effects of these contingent pay plans are quite small. In addition, they argue that the supposition of a positive relationship

between ESOPs, profit-sharing plans or other alternative compensation systems, and company performance is at best ambiguous.

The brief review of the previous research has obviated the need for a more comprehensive empirical study of employee involvement programs, different pay systems, and their simultaneous influence on firm's productivity and profitability. This is what the present research intends to accomplish.

### **III. Survey of Employee Involvement**

The information on the extent and ubiquity of employee involvement in corporate America is gathered via a short survey questionnaire (Appendix A) that was prepared and sent to the Fortune 500 industrial firms during the Spring of 1990. This questionnaire was adopted from a much larger instrument prepared during the Summer of 1987 by the U.S. General Accounting Office (GAO) in a similar study of employee involvement among the Fortune 500 industrial firms, Fortune 500 service companies, and 19 federal agencies (GAO/GGD-88-82).

Out of 500 questionnaires mailed to the Fortune 500 industrial firms, the author received 64 complete responses and 14 refusals to participate in the study for a variety of reasons. The 64 responses established a 13% response rate. The median size of an organization in the sample was 10,000 employees. On the average, 59% of the employees were production workers and 45% of production workers were unionized. 17% of the respondents indicated the presence of some form of agreement with labor unions to support employee involvement activities.

Section II of the questionnaire dealt with different forms of employee involvement and compensation systems. 52 firms (81%) reported the establishment of work-teams in their organizations. To reward employee involvement, 38 firms (59%) had profit and gain sharing programs, 56 firms (88%) had merit pay and individual incentive programs, and 24 firms (38%) had employee stock ownership plans (ESOP). Furthermore, 4 firms (6%) had a labor representative on the board of directors, and 3 firms (5%) had a no-layoff policy.

Section III of the questionnaire investigated reasons for and impact of employee involvement programs. Among the respondents, 44 firms (69%) had no formal corporate policy on employee involvement. Improved productivity was identified by 44 firms (69%) as the main reason for employee involvement programs. Moreover, 46 firms (72%) believed that productivity had improved as a result of such programs, and 31 firms (48%) believed that profitability had also

improved.

#### IV. Data and Methodology

The necessary data for this study were gathered from two different sources. As discussed, primary data were acquired by means of a questionnaire that was mailed to Fortune 500 industrial firms, out of which 64 complete responses were received. Secondary financial data on 58 of these companies were collected from Compustat file. This yields a sample of 58 firms for statistical analysis.

From primary data three indices are built. The first one is a measure of direct employee involvement. Question 5 of Section II of the questionnaire offered nine different forms of direct employee involvement to the respondents. As a result, an equally weighted index of employee involvement, with possible values between 0 and 9, is created for each firm depending on the number of available forms of employee involvement in the firm. The second index is an equally weighted index of the pay system (question 6 of Section II of the questionnaire) with possible values between 0 and 7. Finally, an equally weighted index of fringe benefits, with possible values between 0 and 14, is prepared from question 7 of Section II of the questionnaire.

In order to test the relationship between the firm's productivity, profitability, and measures of employee involvement, the following regressions are run:

$$(1) \quad \text{SPE} = \alpha_0 + \alpha_1 \text{DEI} + \alpha_2 \text{IPS} + \alpha_3 \text{FRNG} + \alpha_4 \text{Assets} + e$$

$$(2) \quad \text{ROA} = \beta_0 + \beta_1 \text{SPE} + \beta_2 \text{DEI} + \beta_3 \text{IPS} + \beta_4 \text{FRNG} + \beta_5 \text{Assets} + e$$

$$(3) \quad \text{ROE} = \gamma_0 + \gamma_1 \text{SPE} + \gamma_2 \text{DEI} + \gamma_3 \text{IPS} + \gamma_4 \text{FRNG} + \gamma_5 \text{Assets} + e$$

where

SPE = logarithm of sales per employee

DEI = index of direct employee involvement

IPS = index of pay system

FRNG = index of fringe benefits

ROA = return on assets

Assets = logarithm of firm's total assets

e = random error term with zero mean and constant variance

Based on the existing empirical results, the coefficients,  $\alpha_1$  and  $\alpha_2$  must be positive and statistically significant to establish a positive relationship between

measures of employee involvement and the firm's productivity (measured by sales per employee).

As mentioned, 48% of the respondents believed that the profitability of their firms had improved because of the employee involvement programs. To test the validity of this claim regression (2) is run. If this claim is valid, then  $\beta_1$  and  $\beta_2$  must be positive and statistically significant.

In addition, this study proposes to go beyond these tests in order to establish causal relationships. Path analysis is used (Nie, Hull, Jenkins, Steinbrenner, Bent [10]) for this purpose. Path analysis is a popular statistical model in social sciences that allows the analysts to test explicit causal assumptions in the analysis of data.

**Figure 1**  
**Path Analysis Model**

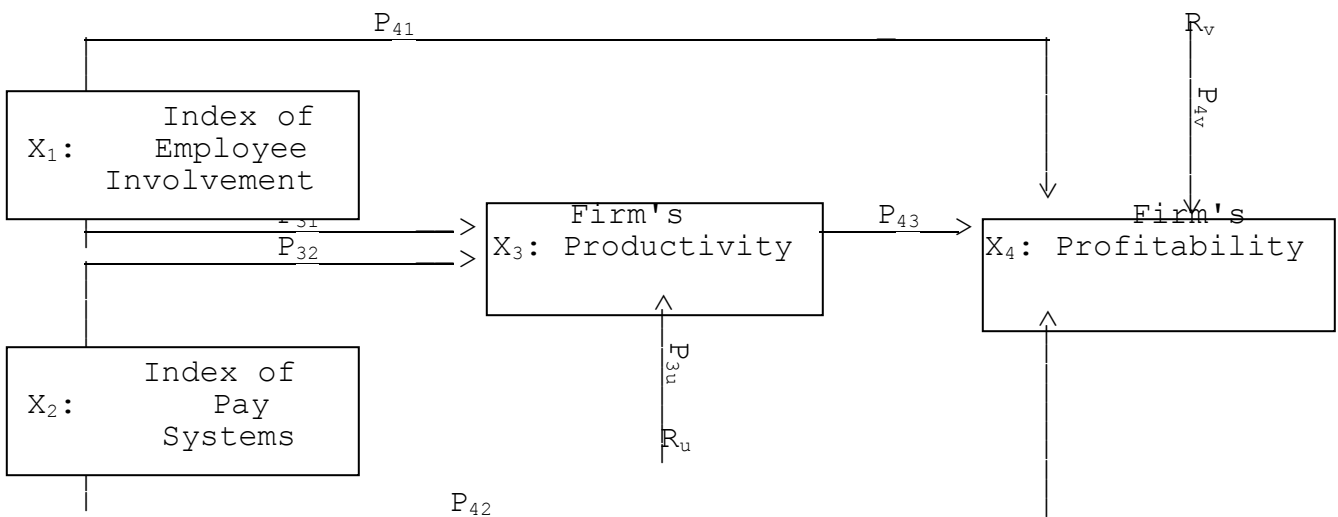


Figure 1 demonstrates the model. The model assumes that the index of employee involvement and the index of pay systems (exogenous variables) have direct impact on the firm's profitability and indirect effect on the firm's profitability via the firm's productivity (endogenous variables).  $P_{ij}$ 's are known as path coefficients and they can be used to convert the above diagram to a system of equations as follows:

$$(4) \quad X_3 = P_{31} X_1 + P_{32} X_2 + P_{3u} R_u;$$

$$(5) \quad X_4 = P_{41} X_1 + P_{42} X_2 + P_{43} X_3 + P_{4v} R_v.$$

$P_{41}$  and  $P_{42}$  measure direct influence of employee involvement and the index of pay systems on the firm's profitability while  $P_{31}$ ,  $P_{32}$ , and  $P_{43}$  enable one to measure the indirect influence of these variables on the firm's profitability via the firm's productivity.  $R_u$  and  $R_v$  are all other variables that affect the firm's productivity and profitability and are not specified in the model. Note also that these equations are linear in the  $P_{ij}$ 's and have no constant terms. This is permissible if one uses standardized variables.

To estimate  $P_{ij}$ 's one could regress each endogenous variable on exogenous variables and the coefficients of such regressions are the same as  $P_{ij}$ 's. The advantage of this approach is to break the total influence of each exogenous variable into direct and indirect influences on each endogenous variable through the decomposition of each bivariate coefficient of correlation ( $\Gamma_{ij}$ ) as follows:

$$(6) \quad \Gamma_{ij} = \text{direct causal effect} + \text{indirect causal effect}$$

$$(7) \quad \Gamma_{41} = P_{41} + P_{31} \cdot P_{43}$$

$$(8) \quad \Gamma_{42} = P_{42} + P_{32} \cdot P_{43}$$

$$(9) \quad \Gamma_{43} = P_{43}.$$

This decomposition could also be used as a measure of goodness of fit. If the models are good, then the sum of direct and indirect causal effects must be approximately equal to the coefficient of correlation.

## V. Results

Table 1 presents regression results for the models stated as equations 1-3. The tests of hypotheses are equivalent to significant tests on coefficients of DEI and IPS.

**TABLE 1**

## Dependent Variables

Independent Variables	SPE	ROA	ROE
DEI	-0.13414 (-1.56)	-0.006368 (-0.96)	0.02453 (0.66)
IPS	0.0437 (0.35)	0.014153 (1.47)	-0.04788 (-0.89)
FRNG	-0.11028 (-1.33)	-0.006621 (-1.03)	0.00803 (0.22)
Assets	0.5620* (5.43)	0.02533* (3.16)	0.07027 (1.57)
R <sup>2</sup>	40.7%	24.9%	9.2%
S	1.071	0.08283	0.4633

- \* Significant at 0.05 level
- \* (t-values are in parentheses)

The first two regressions reveal that direct employee involvement is negatively associated with the firm's productivity and profitability. The coefficient of IPS is positive, which indicates that the index of pay systems is positively associated with the firm's productivity and profitability. It is interesting to notice that the index of fringe benefits influences the firm's productivity and profitability in a negative fashion. However, as the t-values indicate, the coefficients are statistically insignificant. The results of regressions (1) and (3), as shown by the signs of their coefficients, are not congruent and, hence, ROA will remain as the only measure of profitability for the rest of this paper.

To investigate this matter further the insignificant variables were dropped one by one in a backward fashion. The only model that yielded all significant results was regression (1). The results are shown below:

$$(10) \quad \text{SPE} = 1.6639 - 0.16268 \text{ DEI} + 0.57315 \text{ Assets}$$

$$\qquad\qquad\qquad \qquad\qquad\qquad (-2.00) \qquad\qquad\qquad (5.73)$$

$$\qquad\qquad\qquad R^2 = 38.7\%$$

As can be seen, the index of direct employee involvement negatively and significantly influences the



productivity of the firms. This is exactly the opposite of the hypothesized relationship supported by other researchers.

To expound this unusual result it was decided to decompose the indices of employee involvement and pay systems to the extent possible. As a result the following models are tested:

$$(11) \text{ SPE} = \alpha_0 + \alpha_1 \text{ Team} + \alpha_2 \text{ Mini} + \alpha_3 \text{ Board} \\ + \alpha_4 \text{ PS} + \alpha_5 \text{ GS} + \alpha_6 \text{ Merit} + \alpha_7 \text{ ESOP} \\ + \alpha_8 \text{ Life} + \alpha_9 \text{ Assets} + e$$

$$(12) \text{ ROA} = \beta_0 + \beta_1 \text{ Team} + \beta_2 \text{ Mini} + \beta_3 \text{ Board} \\ + \beta_4 \text{ PS} + \beta_5 \text{ GS} + \beta_6 \text{ Merit} + \beta_7 \text{ ESOP} \\ + \beta_8 \text{ Life} + \beta_9 \text{ Assets} + e$$

Where

Team = index of work-teams with possible values between 0 and 3 (question 5 Section II of the questionnaire)  
Mini = dummy variable; 1 if the firm has mini enterprise, 0 otherwise  
Board = dummy variable; 1 if labor represented on the board of directors, 0 otherwise  
PS = dummy variable; 1 if the firm has profit-sharing program, 0 otherwise  
GS = dummy variable; 1 if the firm has gains-sharing program, 0 otherwise  
Merit = dummy variable; 1 if the firm has merit pay, 0 otherwise  
ESOP = dummy variable; 1 if firm has ESOP program, 0 otherwise  
Life = dummy variable; 1 if the firm has a no-layoff policy, 0 otherwise

Table 2 shows the results of these new regressions.

**TABLE 2**

## Dependent Variables

Independent Variables	SPE	ROA
Team	-0.3939* (-2.56)	-0.01470 (-1.20)
Mini	-0.1469 (-0.35)	-0.01035 (-0.30)
Board	0.0226 ( 0.04)	-0.02151 (-0.44)
PS	0.2407 ( 0.78)	0.01330 ( 0.54)
GS	0.3928 (-1.16)	-0.00679 (-0.25)
Merit	-0.2280 (-0.55)	0.03352 ( 1.01)
ESOP	0.4153 ( 1.36)	0.00892 ( 1.36)
Life	0.1433 ( 0.30)	0.03992 ( 1.05)
Assets	0.5854* ( 5.76)	0.026321* ( 3.24)
R <sup>2</sup>	46.6%	27.6%

\* significant at 0.05 level

Interestingly enough, regression (11) shows that the presence of work-teams in companies influences the productivity of the firms negatively and significantly. The backward elimination procedure was also used on these regressions. The final model is shown below:

$$(13) \quad \text{SPE} = 1.73 - 0.351 \text{ Team} + 0.569 \text{ Assets}$$

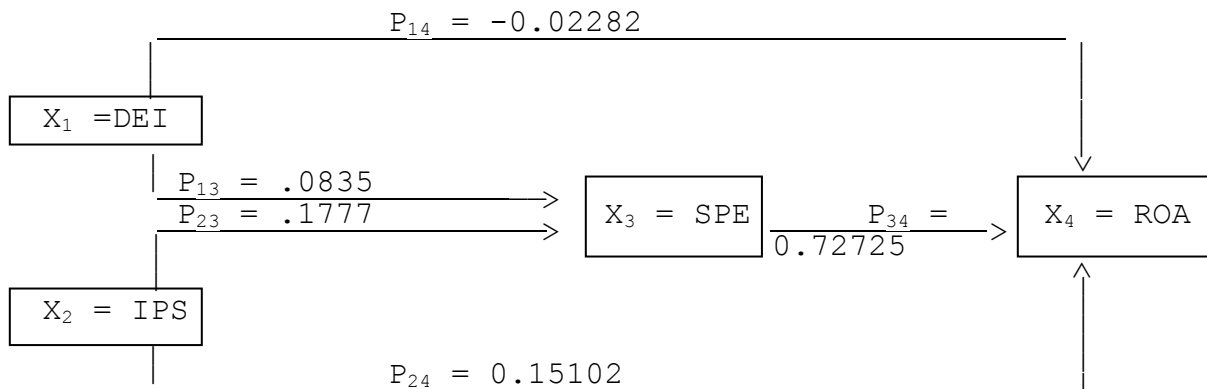
$$\qquad \qquad \qquad (-2.48) \qquad \qquad (6.16)$$

$$R^2 = 40.9\%$$

This model reinforces the previous conclusion. It appears that the introduction of work-teams is not a panacea for slow growth of productivity among the firms in the present sample.

Finally, path analysis was used to measure the direct and indirect impact of employee involvement and different pay systems on productivity and profitability of the firm simultaneously. The results are shown below:

**Figure 2**



The model in Figure 2 can be presented as:

$$(14) \text{ SPE} = 0.0835 \text{ DEI} + 0.1777 \text{ IPS};$$

(0.60)                      (1.28)

$$(15) \text{ ROA} = -0.02282 \text{ DEI} + 0.15102 \text{ IPS} + 0.72725 \text{ SPE}.$$

(-0.25)                      (1.62)                      (8.22)

As can be seen, productivity and profitability of the firm are positively and significantly linked to each other. DEI has a direct and negative influence on ROA, and an indirect but positive influence via SPE. IPS has a positive direct and indirect influence on ROA. This will enable us to decompose the correlation coefficients between any two variables. The results are shown in Table 3.

**Table 3**

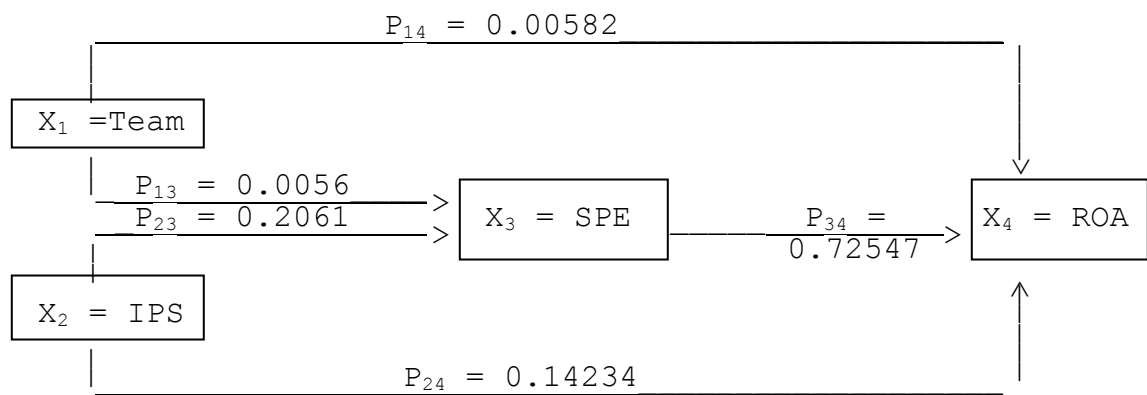
Decomposition of Bivariate Correlation

	(DEI, SPE)	(IPS, SPE)	(SPE, ROA)	(DEI, ROA)	(IPS, ROA)
A: Original Correlation= $\Gamma_{ij}$	0.146	0.207	0.755	0.136	0.294
B: Causal - Direct	0.083	0.177	0.727	-0.023	0.151
Causal - Indirect	0	0	0	0.061	0.129
<b>TOTAL Causal</b>	<b>0.083</b>	<b>0.177</b>	<b>0.727</b>	<b>0.038</b>	<b>0.28</b>
C: Noncausal = (A-B)	0.063	0.03	0.028	0.098	0.014

The results of path analysis and the decomposition of the coefficients of correlation clearly show that the index of pay system (IPS) positively influences both productivity and profitability of the firm. The residual (noncausal) correlations between IPS, SPE and ROA are quite small. DEI, on the other hand, has a negative influence on ROA and positive influence on SPE. The residual correlations between DEI, SPE, and ROA are relatively larger which reduce the explanatory power of this variable in the model.

Path analysis was repeated by substituting the variable Team for DEI. The results are shown as Figure 3.

**Figure 3**



The following equations present the results of this model as:

$$(16) \text{ SPE} = 0.0056 \text{ Team} + 0.2061 \text{ IPS};$$

(0.04)                      (1.55)

$$(17) \text{ ROA} = 0.00582 \text{ Team} + 0.14234 \text{ IPS} + 0.72547 \text{ SPE}.$$

(0.07)                      (1.59)                      (8.23)

In this case, variables Team and IPS have positive direct and indirect effects on ROA. However, as the t-values indicate, the variable IPS, although still insignificant, has more explanatory power. This conclusion can be reinforced by decomposition of the coefficients of correlation.

**Table 4**

## Decomposition of Bivariate Correlation

	<u>(TEAM, SPE)</u>	<u>(IPS, SPE)</u>	<u>(SPE, ROA)</u>	<u>(TEAM, ROA)</u>	<u>(IPS, ROA)</u>
A: Original Correlation= $\Gamma_{ij}$	0.042	0.207	0.755	0.061	0.294
B: Causal - Direct	0.005	0.206	0.725	0.005	0.142
Causal - Indirect	0	0	0	0.004	0.149
<b>TOTAL Causal</b>	<b>0.005</b>	<b>0.206</b>	<b>0.725</b>	<b>0.009</b>	<b>0.291</b>
C: Noncausal = (A-B)	0.037	0.001	0.03	0.052	0.003

The investigation of noncausal correlation shows that IPS is a much more powerful variable to explain variation in ROA.

**XI. Conclusion**

Capitalism, as an economic system, is a network of behavioral relationships that are operated through and controlled by the market institution. Any change in the equilibrium outcome that is detected by the market will generate a chain of reactions that will ultimately establish a new equilibrium. The theory of the firm as a subset of the capitalist economic system has established a set of conditions for the use of scarce resources to produce an optimal outcome. The optimality condition in the theory of the firm requires profit (value) maximization.

Direct employee involvement, codetermination, life-time employment, and so forth, are a set of interventions in the system that might not be compatible with the capitalist system as it exists in the U.S. The statistical analysis of this study has clearly provided support for this claim. Even though these practices have been successful elsewhere, there is no guarantee that they work here.

As was shown, direct employee involvement programs, though they might have some positive influences on the productivity of the firm, are so costly that they ultimately reduce the profitability of the firm. Such programs might be valuable to employees of the firms; however, they are not attractive to shareholders. This is especially true for large corporations in which it will be very difficult, if not impossible, to prevent the free rider problem.

The study has also shown that if the purpose is to motivate employees to improve productivity and profitability, this can be done much more effectively through a compensation system (e.g., the merit pay) that is designed to reward individuals as opposed to groups. This conclusion is consistent with the microeconomic basis of an individual's behavior. An individual incentive plan certainly excludes the problem of free riders and might be designed to be consistent with the risk aversion attitude of the individual employee.

Finally, this study sheds light on the importance of employee involvement programs for U.S. firms. It should be mentioned that previous studies have emphasized the presence of a particular corporate culture, such as the one in Japan, which is necessary for the implementation and success of such programs. The absence of such an environment in corporate America makes the usefulness of employee involvement programs questionable.

## Appendix A

**I. BACKGROUND INFORMATION**

1. Approximately how many people are currently employed full time in the United States by our corporation? Total number =
  
2. Of the total number, approximately what percent fall into each of the following categories?
  - a. Production workers \_\_\_\_\_%
  - b. non-production workers \_\_\_\_\_%
  - c. Supervisors and managers \_\_\_\_\_%
  
3. Approximately what percent of your employees are represented by labor unions?
  - a. Production workers \_\_\_\_\_%
  - b. non-production workers \_\_\_\_\_%
  
4. Does your corporation have any contractual agreement(s) with your union(s) covering employee involvement activities (employee involvement is a process that provides employees with the opportunity to make decisions affecting their work and work environment)? Yes \_\_\_\_\_ No \_\_\_\_\_

**II. FORMS OF EMPLOYEE INVOLVEMENT**

5. Which of the following employee participation system(s) is(are) in existence in your corporation? Please identify the year in which the program went into effect.

**Year Started**

- a. Work-Teams:
  - Problem-Solving Teams  
(Quality Circle)
  - Self-Managing Teams  
(responsible for a whole product or service, and makes decisions about task assignments and work methods)
  - Special-Purpose Teams (Task Force)
  
- b. Mini-Enterprise Units (small unit that produces its own product or service and operates in a decentralized, partly autonomous fashion as a small business)
  
- c. Job enrichment programs (programs intended to increase worker performance and job satisfaction by increasing skill variety, autonomy, significance)



- and identity of the task, and performance feedback)
- d. MBO (Management by objective: process by which objectives are set by employees and refined by management)
  - e. Formal information-sharing program other than news letters
  - f. Employee representation on the board of directors
  - g. Other (specify)
6. Which of the following pay/reward system(s) is(are) in existence in your corporation? Please give percent of employees covered by each system and the year the system went into effect.
- |  | % | Year |
|--|---|------|
| a. All-salaried pay system   |   |      |
| b. Profit sharing (a plan that shares some % of company profit with employees)   |   |      |
| c. Gainsharing (a plan that shares some % of gains in performance-related activities for units of organization such as the Scanlon plan, the Rucker plan, and the Improshare plan) |   |      |
| d. Merit Pay (a bonus plan in which annual pay increases are tied to performance)  |   |      |
| e. Individual incentives (bonus or other financial compensations are tied to short-term or long-term individual performance)   |   |      |
| f. Employee Stock Ownership Plan (ESOP: a program that gives the employees an ownership stake in the company)  |   |      |
| g. Other (specify)   |   |      |
7. Which of the following fringe benefits are offered by your company? Check as many as applicable.
- a. Day care
  - b. Health insurance
  - c. Dental care
  - d. Eye care
  - e. Retirement plan
  - f. Paid vacation
  - g. Paid sick leave
  - h. Tuition reimbursement
  - i. Paid personal leave
  - j. Paid legal fees
  - k. Paternity leave
  - l. Maternity leave
  - m. Employee counseling

n. Other (specify)

8. Does your company have a life-time (no-layoff) employment policy? Yes \_\_\_\_\_ No \_\_\_\_\_

**III.** REASON FOR AND IMPACT OF EMPLOYEE INVOLVEMENT

9. Does your corporation have a formal statement of corporate policy on employee involvement?  
Yes \_\_\_\_\_ No \_\_\_\_\_

10. Which of the following was the main impetus behind the employee involvement?  
a. The CEO  
b. Other corporate executives  
c. Supervisors/managers  
d. Employees  
e. Union  
f. Other (specify)

11. What was the reason for the introduction of employee involvement?: Check as many as applicable.  
a. To improve productivity  
b. To improve quality of product or service  
c. To improve employee morale and motivation  
d. To improve employee skills  
e. To reduce grievances  
f. To reduce absenteeism  
g. To reduce turnover  
h. Other (specify)

12. In your opinion, how did employee involvement affect each of the following?

	<b>Positive</b>	<b>Negative</b>	<b>No change</b>
a. Productivity			
b. Quality of product/service			
c. Worker satisfaction			
d. Turnover			
e. Absenteeism			
f. Competitiveness			
g. Profitability			

13. Which of the training program(s) has(have) been offered by your company within the past 3 years? And how many employees participated in each program?

**How Many**

- a. Group decision making skills
- b. Group problem solving skills
- c. Skills in understanding business  
(Accounting, Finance, Computers,  
etc.)
- d. Quality/statistical analysis skills
- e. Team building skills
- f. Personal enrichment programs
- g. Rehabilitation programs
- h. Other (specify)

14. What percent of your vacant non-entry level jobs are filled from within corporation?

15. If you have additional information or comments which you feel is relevant to such studies please feel free to express your views below.

## References

- [1].Aoki, M., "Toward an Economic Model of the Japanese Firm," Journal of Economic Literature, March 1990, pp. 1-27.
- [2].Brickley, J.A. and K.T. Hevert, "Direct Employee Stock Ownership: An Empirical Investigation," Financial Management, Summer 1991, pp. 70-84.
- [3].Chang, S., "Employee Stock Ownership Plans and Shareholder Wealth: An Empirical Investigation," Financial Management, Spring 1990, pp. 48-58.
- [4].Conte, M.A. and D. Kruse, "ESOPs and Profit-Sharing Plans: Do They Link Employee Pay to Company Performance?" Financial Management, Winter 1991, pp. 91-100.
- [5].Conte, M.A. and J. Svejnar, "The Performance Effects of Employee Ownership Plans," presented at the Brookings Institute conference on Worker Compensation and Productivity, March 1989.
- [6].Hashimoto, M., "Employment and Wage Systems in Japan and Their Implications on Productivity: A Transaction-Cost Perspective," presented at the Brookings Institute conference on Worker Compensation and Productivity, March 1989.
- [7].Jensen, M.C. and W. H. Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure," Journal of Financial Economics, 1976, 3, pp. 305-360.
- [8].Levine, D. and L. Tyson, "Participation, Productivity, and the Firm's Environment," presented at the Brookings Institute conference on Worker Compensation and Productivity, March 1989.
- [9].Mitchell, D., D. Lewin and E. Lawler, "Alternate Pay Systems, Firm Performance and Productivity," presented at the Brookings Institute conference on Worker Compensation and Productivity, March 1989.
- [10].Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., and Bent, D. H., SPSS: Statistical Package for the Social Sciences, New York: McGraw Hill, 1975, pp. 383-397.
- [11].Simon, H. A., "Organizations and Markets," The Journal of Economic Perspectives, Spring 1991, pp. 25-44.

- [12].United States General Accounting Office, "Employee Involvement: Issues for Agencies to Consider in Designing and Implementing Programs," GAO/GGD-88-82, May 1988.
- [13].Weitzman, M. L. and D. L. Kruse, "Profit Sharing and Productivity," presented at the Brookings Institute conference on Worker Compensation and Productivity, March 1989.
- [14].Williamson, O. E., "Managerial Discretion and Business Behavior," American Economic Review, Dec. 1963, pp. 1032-1057.