

The Diffusion and Decline of Employee Involvement Policies in U.S. Manufacturing Plants

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Abstract

The study examines trends of employee involvement (EI) practices in U.S. manufacturing establishments. The data from a national survey show that although EI use in the establishments has increased considerably during the period from 1986 to 1995, some companies terminated EI after using it for several years. The results suggest that EI use is correlated with a company's business strategy, management style, and other HR programs such as training and incentive compensation. An implication of these results suggests that estimates that show positive impacts of high performance workplace practices also should consider plants that use these policies and then abandon them.

Introduction

One of the most visible and widely discussed human resources policies in American business has been the development of employee involvement (EI) programs—a diverse set of personnel and human resources management (HRM) practices that give workers more authority at workplaces and promote their involvement in business decision-making processes. These practices include, for example, total quality management (TQM), self-directed work teams, and suggestion systems.

The major findings by Freeman and Rogers (1999) showed that voice through employee involvement programs is the most sought-after policy by American workers. The Presidential Commission on the Future of Worker

Management Relations, often referred to as the Dunlop Commission, lists employee involvement as one of its main recommendations for improving the quality of work life and U.S. productivity (Commission on the Future of Worker Management Relations, 1993–1994).

Previous studies have mainly focused on two issues: who adopted EI policies and the impact of EI on organizational-level outcomes. The findings showed that EI adopters are often organizations that operate in competitive product markets and have to respond to the market quickly and flexibly. In addition, they use new technology that requires highly skilled workers and follow a business strategy that emphasizes quality and innovation rather than low cost. In general, adopters have complementary HR practices such as high levels of training and incentive compensation plans (Osterman 1994, 2000; Arthur 1992; Ichniowski and Shaw 1995; Pil and MacDuffie 1996; Dunlop and Weil 1996; Gittleman, Horrigan, and Joyce 1998). Although EI programs have been increasing, these policies have not been universally successful. One detailed econometric case study in aircraft manufacturing shows that firms also have chosen to abandon these policies (Kleiner, Leonard, and Pilarski 2002). Unlike most other studies, we examine the abandonment as well as the adoption of EI. We use data that cover ten years of information on human resources and business strategies from manufacturing establishments. Consistent with other analysis, our data show that EI use has been rapidly increasing in establishments during this period. However, we find that EI use has also declined in some establishments.

Data

The National Bureau of Economic Research's Human Resources Management Survey was used to collect the data that we use in this study. The survey was collected through detailed on-site interviews, usually involving a team of researchers. From 1995 through 1997 the survey team paid visits to the plants. During the visits, which often included multiple return trips over several days, the survey team collected written documents that the plant was willing to share to obtain knowledge about business environment, technology, and production of the plants; the team also interviewed managers, workers, and union representatives.

The survey asked questions about the plants' recruiting and selection, training, performance evaluation, employee involvement, and financial participation practices, as well as business strategy, management style, and basic information about the plant. For HR programs managers were asked whether the plant had adopted a certain program since 1986. If the plant had adopted a program, managers were asked which year it was adopted and whether the program was still in use; if the plant had not adopted a program, managers

were asked in which year the program was terminated. Specifically, selection and staffing programs include whether the company had a detailed screening process, personal interview, aptitude test, physical exam, reference check, and probationary period. Training programs include whether the company offered on-the-job training, training in team building, on-site training, and tuition reimbursement. Performance appraisal policies include whether the company used assessment centers, formal review sessions, and a standardized form to evaluate their employees periodically. Employee involvement and communication practices include whether the company adopted job rotation, a suggestion system, Quality of Work Life (QWL), Quality Circles (QC), total quality management (TQM), self-managed work teams, job redesign, a joint labor-management committee, and employee representation on the board of directors. Finally, financial participation programs include whether the company adopted an individual incentive plan, employee stock ownership (ESOP), cash or deferred profit sharing, gain sharing, skill-based pay, an employee stock purchase plan, and a group bonus.

Managers interviewed also were asked whether there had been changes in the plant manager/production leader since 1986 and, if yes, how many. Then the management style of each manager was rated on a 1 to 5 scale with 1 representing "close monitoring" and 5 representing "gives employee autonomy." Four categories of business strategy were included in the survey: growth of the market share of the firm, obtain a specific market niche, short-term profit maximization, and maximizing shareholder value of the firm. The emphasis of the current manager on each of the four strategies was rated on a 1 to 5 scale with 1 indicating "a little" and 5 being "a great deal." Managers were also asked whether the plant had undergone major restructuring since 1986 and, if yes, which year. All of the above responses were converted to yearly observations. The basic information about plants was time constant. The questions included which year the plant was built, whether the company had union representation, and the estimated average yearly turnover rate. Although the questionnaire required retrospective answers, the research team asked for documentation on the adoption and termination of each policy.

The Rise and Fall of EI Use

As can be seen in Table 1, in 1986, at the beginning of the period covered by the survey, 76 percent of the plants in our sample had adopted some EI programs. By 1995 this number had increased to 96 percent. The number of companies using a "bundle of programs" also greatly increased. Even in 1986 the percentage of plants that adopted two or more programs was 55 percent, and this increased to over 90 percent by 1995. The most common forms of

EI policies for the establishments in our sample are joint labor-management committees along with suggestion systems. Worker participation on corporate boards and self-managed teams are the two least-used forms of EI, which suggests that a small percentage of establishments have evolved to a high level of employee involvement (Freeman, Kleiner, and Ostroff 2000).

Although the trend was toward increasing EI, during some periods the percentage of companies and the extent of EI use declined. The downward trend was caused by the termination of programs. In Table 2 we show the number of companies adopting or terminating programs by year. The table shows that the diffusion of EI sped up after 1990. In general, termination of EI programs is less frequent than adopting new programs. QC and TQM are the two programs that have most frequently been terminated, suggesting that these two programs may be less effective or that other programs may be substituting for them. A substantial number of terminations occurred between 1988 and 1991, which was a downturn in the business cycle, suggesting that financial difficulties may lead companies to abandon some EI programs in order to cut labor costs.

Correlations of EI Use with Business Strategy, Management Style, and other HR Programs

In this section we examine the interaction of EI rise and decline with other factors such as business strategy, management style, and training, selection, and other HR programs. We develop the two measures of EI use—summed rating measure and Rasch measure. The summed rating value equals the total number of EI programs that a company adopted in a year. The Rasch measure is estimated based on the Rasch model. Some EI programs are more difficult to implement than others. Two plants who adopt the same number of EI programs but different ones would have a different level of EI use. For example, self-managed work teams are a more autonomous form of work teams than TQM or QC. In self-managed teams, employees have more discretion and authority. They are delegated the right to make decisions and implement them, and they are responsible for the outcomes. In QC and TQM workers may provide suggestions to managers on quality- or work-related issues, but they generally do not have authority to act on their own. Thus, a plant that adopted self-managed teams should be considered to have a higher level of EI than one that adopted QC or TQM. The advantage of the Rasch model is that it estimates the extent of EI use in companies while taking into account differences in the difficulty level of the programs.

The Rasch model regards the probability that a plant has a certain program as a function of plant and EI policy characteristics:

TABLE 1
Diffusion of EI: Percentage of Establishments Using Multiple Programs

EI Programs in Use	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
0	23.53	23.53	21.57	21.57	17.65	15.69	11.76	11.76	5.88	3.92
1	21.57	19.61	17.65	17.65	13.73	7.84	9.8	7.84	7.84	3.92
2	9.8	7.84	11.76	13.73	15.69	13.73	13.73	11.76	15.69	17.65
3	13.73	17.65	17.65	19.61	19.61	19.61	17.65	17.65	21.57	21.57
4	9.8	9.8	9.8	7.84	7.84	13.73	19.61	13.73	9.8	13.73
5	1.96	1.96	3.92	3.92	9.8	9.8	9.8	15.69	15.69	15.69
6	11.76	11.76	9.8	9.8	11.76	9.8	7.84	11.76	11.76	11.76
7	3.92	3.92	3.92	1.96	0	5.88	3.92	3.92	5.88	1.96
8	1.96	1.96	1.96	1.96	1.96	1.96	5.88	5.88	5.88	9.8
9	1.96	1.96	1.96	1.96	1.96	1.96	0	0	0	0

Note: The EI programs include job rotation, joint labor-management committee, suggestion system, TQM, quality circles, self-managed work team, job redesign, quality of work life, and employee representation on the board of directors.

TABLE 2
The Adoption and Termination of EI Programs

Adopting	1986 (left- censored)	1987	1988	1989	1990	1991	1992	1993	1994	1995
Employee Representation on Board of Directors	2	0	0	0	1	0	0	0	0	0
Joint Committee	20	0	0	0	3	3	2	2	3	2
Job Redesign	10	0	0	1	2	2	2	2	3	1
Self-Managed Work Team	4	0	0	1	3	3	5	3	1	1
TQM	16	1	0	0	3	6	1	0	2	2
Quality Circles	16	2	0	0	1	3	0	1	2	1
Quality of Work Life	14	0	1	0	2	2	1	2	2	0
Suggestion System	19	1	2	2	0	0	3	2	1	3
Job Rotation	23	0	0	1	3	5	4	2	2	0
Total Number of Adoptions	4	3	5	18	22	18	14	14	16	10
										1995
Terminating	1986 (right- censored)	1987	1988	1989	1990	1991	1992	1993	1994	1995 (right- censored)
Employee Representation on Board of Directors	0	0	0	0	0	1	0	0	0	0
Joint Committee	0	1	1	0	0	1	0	0	0	0
Job Redesign	0	0	1	0	0	1	0	0	0	0
Self-Managed Work Team	0	0	1	0	0	1	0	3	0	0
TQM	0	0	2	2	0	2	1	1	0	0
Quality Circles	1	0	3	2	2	4	0	0	0	0
Quality of Work Life	0	0	2	0	0	1	1	0	0	0
Suggestion System	0	0	1	0	0	2	0	2	0	0
Job Rotation	0	0	0	0	0	1	0	1	0	0
Total Number of Terminations	1	1	11	4	2	14	2	8	0	0

$$P(X_{ij} = 1) = \Phi(\theta_i, \gamma_j), i \text{ establishment}, j, \text{ EI practice} \quad (1)$$

where θ denotes the degree of employee involvement in an establishment, which is considered a latent characteristic of the establishment, and γ also denotes a latent variable indicating the difficulty level of an EI program. The probability that an establishment had a certain EI policy depends on an establishment's degree of EI use (θ) and the difficulty level of an EI program (γ). The function Φ is specified to have a logistic form, and equation (1) becomes

$$P(X_{ij} = 1) = \frac{\exp(\theta_i - \gamma_j)}{\Gamma - \exp(\theta_i - \gamma_j)}, i \text{ establishment}, j, \text{ EI practice} \quad (2)$$

The maximizing likelihood estimation (MLE) method is used to estimate the establishment parameter (θ) and the EI policy parameter (γ). The estimates of θ are used as the measure of EI use in plants. Its value ranges from -1 to 1.

Estimates from our sample show that the average EI use based on Rasch and summated rating are highly correlated. The average correlation across years is 0.64 for the two measures of employee involvement.

Examining the correlation estimates between EI, business strategy, management style, and other HR programs such as training, performance appraisal, and incentive compensation shows that a company's EI use is significantly correlated with management style, business strategy, and other HR practice. EI use is positively associated with managers' emphasis on giving employees autonomy and on strategies such as growth of market share and niche market. It is also positively correlated with the use of training and incentive compensation. This suggests the importance of complementarity between EI and these other HR programs.

Summary and Conclusion

Using ten-year longitudinal data of establishments, we show that EI use is not necessarily a stable phenomenon. It has spurts of growth and decline, as do other labor market institutions within firms. Although other studies have investigated the determinants of EI adoption, few studies have examined the trend of EI decline. Our study calls attention to the termination of employee voice policies in manufacturing plants. This is particularly important in the determination of the importance of high-performance workplace practices on firm performance because almost all studies focus only on the adoption of these policies. This flaw in the research design is likely to bias upwards the estimates of the importance of EI and related policies on firm

performance. Future research should adjust for the bias in analyzing firm performance. In addition, we estimate correlations between EI, business strategy, management style, and other HR programs. The results suggest that management style, business strategy, and complementarity between EI and other HR programs may influence a company's use of EI.

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