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**IMPACT OF EMPLOYEE INVOLVEMENT
AND TOTAL QUALITY MANAGEMENT
PROGRAMS**

**CEO PUBLICATION
G 95-18 (294)**

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December 1995

The Impact of Employee Involvement and Total Quality Management Programs

Abstract

Study results from continuing research on the impact of employee involvement and total quality management programs. The evidence shows a close interrelationship and complementarity between employee involvement and total quality management programs. They help make each other more successful. Combined, they also show a positive impact on the financial performance on the Fortune 1000 companies.

The Impact of Employee Involvement and Total Quality Management Programs

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Do employee involvement (EI) programs work? Do total quality management (TQM) programs work? The answer to both of these questions appears to be yes based on a continuing research study that we began in 1987. Positive results from EI and TQM programs is only part of the story, however. Perhaps the most interesting results from the study concern how they work together to impact organizational performance.

Although both TQM and EI stress employee involvement as well as training and skills development, there are some key differences between them. The TQM literature attends more to work process and customer outcomes. The employee involvement literature emphasizes design of the work and business units for fuller business involvement and employee motivation. In addition, employee involvement emphasizes making the employee a stakeholder in business performance through rewards systems such as gainsharing and through business education. In practice, these two management approaches may contribute to organizational effectiveness in a complementary and reinforcing manner such that their individual impact is weakened by the absence of the other. This is the major focus of this article, but before we look at the results of our study, we will briefly describe the study.

Study Design

In 1987, 1990 and 1993, we surveyed the Fortune 1000 corporations. The survey has changed slightly from year to year, but it has always focused on the adoption of employee involvement and total quality management practices as well as on their impact. In addition, we have followed the financial performance of the companies. The focus of the current article will be the 1993 survey which was commissioned by the Association for Quality and Participation. It drew responses from 279 companies in the Fortune 1000. The complete results of the study as

well as the questionnaire can be found in our recently-published book *Creating High Performance Organizations: Practices and Results of Employee Involvement and Total Quality Management in Fortune 1000 Companies*, published by Jossey-Bass in 1995.

Use of and Satisfaction With Employee Involvement and TQM Programs.

Our definition of employee involvement includes a wide variety of practices that move information, knowledge, power and rewards downward in organizations. We asked companies whether they use self-managing teams, gainsharing programs, training programs, open-book management, and a variety of other practices that are supportive of employee involvement. There was a clear general trend from 1987 to 1993 toward the increasing use of a wide variety of practices that move information, knowledge, power and rewards downward in the Fortune 1000 companies. Self-managing teams and knowledge-based pay are the practices that show the greatest growth.

In the case of total quality management programs, we asked about the use of quality councils, cross-functional planning, reengineering, customer satisfaction, monitoring and other so-called “core” TQM practices. We also asked about “production oriented” practices: self inspections, system process control, JIT, and work cells. From 1990 to 1993, we found an increase in the use of all quality management practices, and an increase in the number of companies with total management quality programs.

There is a strong correlation between the adoption of employee involvement approaches and the use of TQM practices. The extent to which companies employ the core TQM practices, the production-oriented practices, collaboration with customers, and cost-of-quality monitoring all have a highly significant relationship to our measure of overall employee involvement use. The relationship to the development of knowledge and skills is particularly strong, demonstrating the strong emphasis in TQM programs on the development of skills. TQM’s relationship to power sharing is also very strong, reflecting the focus in TQM on problem-solving and decision-making groups in general and on work cells and teams.

We asked the 1993 respondents in the Fortune 1000 companies how positive their experience had been with their employee involvement and total quality management programs. As is shown in Table 1, the overwhelming majority of the companies believe that their overall

employee involvement and total quality management efforts are successful. They have a slightly more positive feeling toward their TQM activities than their EI activities, but this difference is not statistically significant. This overall positive reaction fits with the continued growth of EI and TQM.

Table 1 Overall, How Positive Has Your Experience Been¹

	<u>With EI</u>	<u>With TQM</u>
Very Negative	0%	0%
Negative	1%	1%
Neither Negative nor Positive	18%	16%
Positive	68%	66%
Very Positive	13%	17%

¹ Percent of Companies

Combined Impact on Performance

We began our analysis of the impact of EI and TQM on organizational performance by looking at the degree to which TQM practices make employee involvement programs more successful. The results are clear when we look at the success of employee involvement programs. Overall, the more organizations use TQM practices, the more positive results they get from their EI efforts. This result provides evidence for the close and complementary relationship of the two initiatives. A similar pattern appeared when we looked at the relationship between impact of TQM programs and the use of employee involvement efforts. The more organizations use EI practices, the more likely they are to have successful TQM programs.

In order to study more closely the intertwined impact of EI and TQM, we used a statistical technique called partial correlations. It allows a researcher to look separately at the

impact of two related factors or in this case, programs such as EI and TQM. Tables 2 and 3 provide evidence on the intertwined and separate impact of EI and TQM. Table 2 shows that some of the positive impact of TQM practices are actually the result of introducing EI practices. The partial correlations between the use of core and production-oriented TQM practices and the TQM outcomes all go down when the effect of EI is eliminated. The relationship between the use of core practices and employee outcomes loses its statistical significance, indicating that it resulted in large part from employee involvement. The relationships of production-oriented practices to direct work performance outcomes and company performance also become nonsignificant without the EI impact.

Table 2 Relationship of Extent of Use of TQM Practices to Outcomes of TQM Programs With and Without the Effect of EI

		TQM Outcome Ratings		
		Direct Performance Outcomes[@]	Profitability and Competitiveness	Employee Satisfaction and QWL
Core TQM Practices	Without EI	.25***	.26***	.19
	With EI	.31***	.35***	.25***
Production-Oriented Practices	Without EI	.17	.18	.05
	With EI	.23***	.27***	.11

[@] (productivity, customer satisfaction, quality, and speed)

Significant correlation coefficients key:
 * = weak but significant ($p \leq .05$)
 ** = moderate relationship ($p \leq .01$)
 *** = strong relationship ($p \leq .001$)

Note: Without = partial correlations
 With = zero order correlations

The findings with respect to the combined impact of TQM and EI are not unexpected: most TQM proponents advocate high levels of employee involvement as part of their TQM efforts. However, the findings do make a very important point: the impact of TQM programs that do not also include EI practices will be less positive both for employee outcomes and for performance outcomes.

Table 3 shows the impact of the use of EI approaches on EI outcomes when the impact of TQM practices is eliminated. Again we see most of the relationships declining and many of them losing their significance. Without TQM practices, the overall use of EI and the amount of information that is shared remain significantly related to direct performance and company outcomes. Knowledge and skills are weakly tied to company outcomes under the same conditions. Only power sharing is weakly related to employee outcomes when the impact of TQM is statistically partialled out. Thus, it appears that the use of TQM practices is an important part of successfully involving employees in processes that lead to improvements in organizational performance.

Table 3 Relationship of Extent of Use of EI Practices to Outcomes of EI Program With and Without the Effect of TQM

		EI Outcome Ratings		
		Direct Performance Outcomes [@]	Profitability and Competi- tiveness	Employee Satisfaction and QWL
EI Overall	Without TQM	.20**	.17*	.14
	With TQM	.33***	.28***	.22***
Information	Without TQM	.21**	.20**	.08
	With TQM	.29***	.27***	.14*
Knowledge and Skills	Without TQM	.13	.18*	.08
	With TQM	.31***	.31***	.21**
Power Sharing	Without TQM	.06	.10	.15*
	With TQM	.22***	.23***	.23***
Rewards	Without TQM	.12	.09	.08
	With TQM	.17**	.13	.12

[@] (productivity, customer satisfaction, quality, and speed)

Significant correlation coefficients key:

* = weak but significant ($p \leq .05$)

** = moderate relationship ($p \leq .01$)

*** = strong relationship ($p \leq .001$)

Note: Without = partial correlations -- controlling

for TQM core and production-oriented practices

With = zero order correlations

Impact of How EI and TQM are Managed

In order to further study the joint effects of EI and TQM programs, we asked companies how the relationship between EI and TQM is managed. Table 4 shows that the employee outcomes from TQM and the performance outcomes from EI are highest when the two initiatives are managed in an integrated fashion. Coordination helps somewhat, but both employee and company outcomes are highest if the two are integrated parts of a single improvement effort.

Table 4 Relationship of EI and TQM Program Outcomes to How EI and TQM are Managed

		Two Separate Programs	Coordinated	One Integrated Program
Direct Performance Outcomes @	EI	4.04	4.20	4.21
	TQM	4.02	4.09	4.14
Profitability and Competitiveness	EI	3.78	3.90	4.00*
	TQM	3.85	3.96	4.00
Employee Satisfaction and QWL	EI	3.92	3.98	3.96
	TQM	3.70	3.76	3.89*

@ (productivity, customer satisfaction, quality, and speed)

Key: * = Significantly higher than the other forms of managing.

Note: means are presented and compared

We believe this is a very important point. It argues strongly against organizations having separate officers and staff groups managing employee involvement and total quality management activities. Indeed, it may argue against the whole idea of having EI and TQM programs. It suggests that it may be best to have an organizational improvement effort which combines and integrates EI, TQM and other practices which give the organization the type of performance capabilities it needs.

We also asked companies how their EI and TQM programs are positioned relative to each other. Table 5 shows that the performance outcomes from TQM and EI are perceived to be highest when EI is seen as an important part of TQM rather than the reverse. This result no doubt reflects the task-oriented focus of TQM. For better or worse, it is often easier to get management commitment to these efforts if they see that the focus is directly on task and process, rather than on ways to involve employees in the business.

Table 5 EI and TQM Outcomes Related to How EI and TQM are Positioned Relative to Each Other

		EI is an Important Part of TQM	TQM is an Important Part of EI
Direct Performance Outcomes [@]	EI	4.20**	3.98
	TQM	4.14**	3.95
Profitability and Competitiveness	EI	3.95**	3.73
	TQM	3.97	3.80
Employee Satisfaction and QWL	EI	3.96	3.90
	TQM	3.86	3.67

[@](productivity, customer satisfaction, quality, and speed)

Key: * = Weak but significant ($p \leq .05$)
 ** = moderate relationship ($p \leq .01$)
 *** = strong relationship ($p \leq .001$)

Note: means are presented and compared.

In order to complete our analysis of the combined impact of EI and TQM, we studied the relationship between the adoption of EI and TQM practices and corporate financial performance. In other words, we shifted from looking at ratings of performance to publicly reported financial data. The results of this analysis generally confirm our earlier analysis. The more companies use EI and TQM practices, the better their financial performance. Companies that are high users of EI and TQM show the best return on sales, return on assets, return on investment and return on

equity. Table 6 summarizes these results. It shows the percent return for measures of financial performance as related to EI and TQM usage. We believe these results are particularly important because it is the first study to show the long term effects of EI and TQM on the actual performance of large corporations. It strongly suggests that EI and TQM pay off in terms of the financial performance of companies.

Table 6 Financial Effects of EI And TQM Usage

FINANCIAL MEASURES	Low Use	Medium Use	High Use
Return on Sales	6.3	8.3	10.3
Return on Assets	4.7	5.8	6.9
Return on Investment	9.0	11.8	14.6
Return on Equity	16.6	19.7	22.8

Summary and Implications

The evidence substantiates the close interrelationship and complementary nature of employee involvement and total quality management. They help make each other more successful. Companies with more extensive forms of employee involvement report higher outcomes from their TQM programs than companies with less employee involvement. Employee involvement programs are more successful when they are used in conjunction with TQM programs. There is a particularly close link between the impact of production-oriented TQM practices and the use of employee involvement approaches. The impact of production-oriented TQM practices is positive only when they are used in a manner that is highly involving.

The study also provides some interesting data on how TQM and EI programs should be positioned relative to each other. Performance outcomes are highest if managers focus on TQM and see EI as part of it rather than the other way around. The highest impact is achieved if EI and

TQM are managed as an integrated program. Finally, using them both leads to better financial performance.

The results of our study have some clear implications for how an organization should be managed. They strongly suggest employee involvement and TQM practices should be woven into an interrelated effort to improve organizational performance. They don't allow us to specify exactly what this combination should look like, but that may be for the best. It is unlikely that there is a generally appropriate mix of practices that organizations should adopt. It is much more likely that organizations need to fit the use of EI and TQM practices to their particular technology, environment and need for improvements in organizational performance. It is clear, however, that the introduction of new practice goes best when employees are treated as major stakeholders in an organization and are involved in the business of the organization. This assures that not only will the performance of the organization improve, but employees will develop a more positive relationship with the organization. In short, it has the greatest potential to produce a win/win situation.