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Municipal Commitment to Total Quality Management: A Survey of Recent Progress

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How do cities implement Total Quality Management (TQM)? In which areas is TQM most common? Evan M. Berman and Jonathan P. West report the findings of a national survey of city managers and chief administrative officers in all cities over 25,000. They find that local governments use a broad range of strategies, and that city managers play an important role. The data indicate that currently 11 percent of cities have a "substantial" commitment to TQM. TQM efforts are most common in police, parks and recreation, streets, and personnel services. While modest positive results are reported for some cities, it is too soon to draw definite conclusions about the outcomes of municipal TQM initiatives.

In the past two years, there has been considerable interest in Total Quality Management (TQM). At the level of local government, interest is shown by the increasing number of TQM initiatives in such services as garbage collection, street maintenance, welfare services, police protection, emergency services, and other areas (Sensenbrenner, 1991; Galloway, 1992; Walters, 1992; Pfister, 1993; Lusk, Tribus, and Schwinn, 1989; Penzer, 1991; Kline, 1992; International City and County Management Association, 1993). Applications vary from administrative cost savings to strategic reorientations of agency objectives to meet the needs of citizens more effectively. In general, the objectives of these applications are to increase customer orientation, timeliness, and service performance, while reducing costs. Also, many of these applications apply TQM concepts loosely; that is, they do not necessarily follow strict or orthodox TQM concepts.

Notwithstanding considerable interest for TQM in municipal government, informed observers have highlighted many problems with the implementation of TQM. For example, Kravchuk and Leighton (1993), as well as Davis and Hyde (1992), see traditional administrative functions such as budgeting and human resources as control-oriented impediments to TQM. Cohen and Brand (1993) focus on the need for long-term commitment, which is compromised by the ever-changing political contexts of public management, as well as turnover by top management. Swiss (1992) questions the suitability of production-oriented private sector experiences for government. Others have challenged TQM on normative grounds. Linden (1992), believes that by focusing on customers, governments may overlook the legitimate interests of citizens. Frederickson (1994) argues that interest in TQM is misplaced, and that more progress is needed on difficult policy issues. These problems cause many to see TQM as just one more in a series of short-lived management fads (Bleakley, 1993; Zemke, 1993).

Despite these concerns, it is obvious to many practitioners that (at least for now) TQM is very much alive in government (e.g., Rago, 1993). However, we know very little about the extent of TQM implementation in local government, the reasons that cities implement TQM, the areas in which TQM is often used, and so forth. This is because many existing accounts are largely based on anecdotal evidence and have an advocacy orientation. By contrast, we aim to provide in this article a systematic and balanced assessment of TQM in municipal government. Through a national survey of U.S. cities (with populations over 25,000), we provide evidence of (1) the level of municipal implementation, (2) the forces which drive cities to implement TQM, (3) differences in TQM implementation by cities of different size, regions, and form of government, (4) strategies used to implement TQM, and (5) a subjective assessment by chief administrative officers of the impact of TQM to date. We also examine the relationships among these aspects such as, for example, between different strategies and the level of implementation.

The Level of Commitment

TQM is an encompassing management approach whose principal tenets are to satisfy (internal and external) customer needs through strategies of employee empowerment and performance measurement (e.g., Milakovich, 1991; Garrity, 1993; Barzelay, 1992; Keehley, 1992). Customer needs are addressed through the multi-faceted concept of "quality," which includes such elements as performance, conformance, accuracy, reliability, and timeliness (Federal Quality Institute, 1991; Rosen, 1993). In many instances, these elements are quantifiable and, hence, subject to evaluation, assessment, and continuous improvement. Employee empowerment is used because it allows employees to address customer problems in a timely and often tailored way (Berman, 1995).

A common problem with the implementation of productivity improvement innovations such as TQM is that many organizations implement them at *a token level* rather than fully committing themselves to success (Downs and Mohr, 1980; Miller, 1993). Token implementation, or paying lip service, occurs because organizations and individuals receive recognition and other benefits from being, or appearing to be, in line with current thinking, while avoiding the risks of actual innovation. Such behavior is reinforced by perceptions of meager rewards for success or often severe, punitive consequences of failure. Token implementation also occurs as the result of a flawed implementation plan, inadequate commitment and follow-through by those mandating the implementation of innovation, a lack of training in applying the innovation, incongruent organizational policies, and other factors (Radin and Coffee, 1993).

Given the reality of token implementation, it is important to be able to distinguish token from substantial implementation. Previous studies have used a range of "organizational investments" such as training, rewards and resources as measures of commitment to innovation (Perry, 1985). Many authors have argued that the implementation of TQM requires considerable commitment to training and appropriate rewards, and that without such commitment TQM implementation cannot succeed (Bowen and Greiner, 1991; Halachmi, 1993). Using organizational commitment as a multi variable concept, it might be said that a city, which provides intensive and on-going training at all employee levels, provides rewards for implementing TQM, uses TQM coordinators, forms quality councils, engages in planning activities such as information-gathering site visits, and applies TQM in many services, has a higher level of commitment to TQM than a city that fails to do these things.

In this study, we use four composite measures of organizational commitment to TQM: (1) the number of functions in which TQM is used; (2) the availability of training efforts in TQM for employees and senior managers; (3) the implementation of rewards that are designed to further the implementation of TQM (e.g., group rewards); and (4) the commitment of other organizational resources for TQM such as consultants, coordinators, councils, and budgets that aim to further TQM. The validity of these measures is not only supported by the implementation literature (Goggin *et al.*, 1990; Hummel, 1987; Barzelay, 1993; Berry, 1990) but also by open-ended comments provided by survey respondents (see gray box for a discussion of survey procedures). Many responding municipal administrators viewed implementing TQM in a range of departments or city

Methodology

During the summer of 1993, a national survey was administered to city managers and chief administrative officers regarding the use of TQM in their municipalities. The survey was pretested on a group of 50 city managers and, following modifications, was sent to all cities with a population over 25,000. These managers and municipalities were identified with assistance of the International City and County Management Association (ICMA), which provided current mailing labels. A total of 1,211 surveys were mailed. After four waves of mailings and telephone calls, 433 useable responses were received. To evaluate the extent to which responses were obtained from all cities that implement TQM, we conducted a telephone survey of 100 randomly selected nonrespondents. This nonrespondents' survey found that 14 percent of nonrespondents implemented TQM. Thus, it follows that 109 cities [(1211-433)*0.14] that implement TQM are not represented in the respondent group. Given that 237 of the 433 respondents claim to be using TQM in at least one function in their jurisdiction, the effective response rate among cities that use TQM is *68.5 percent* [237/(237+109)].

In this study, TQM is defined as a management approach that is characterized by: (1) a commitment to customer-driven quality; (2) employee participation in quality improvement; (3) a bias toward taking actions based on facts, data, and analysis; (4) commitment to continuous improvement; and (5) developing a systemic perspective on service means and ends. These five points are consistent with descriptions of TQM such as provided in the text. While important productivity improvements can be accomplished by using some of these elements, in this study such partial applications are not considered to be "true" TQM.

A variety of procedures were used to assure accurate and valid data. First, considerable care was taken in dealing with the dual problems of "false positives" and "false negatives." A problem with false positives occurs when respondents who are implementing limited productivity improvements, but not TQM, respond affirmatively when asked if they are applying TQM. A problem also occurs when respondents indicate that they are using TQM when they are only paying lip service to TQM. This might happen because respondents feel that they *ought* to be practicing TQM. A problem of false negatives occurs when cities that use TQM call their effort by another name (e.g., Total Quality Service). This might cause false negatives because it does not allow for the individual variations mentioned by Swiss (1992).

To overcome these problems of false positives and negatives, we instructed respondents to identify only those productivity improvements that meet the above definition of TQM. After reading the above five-point definition, and identifying those services practicing TQM, respondents were instructed to verify that all of the TQM applications identified meet these five criteria. Because not all quality improvement efforts meet these standards, the questionnaire also included items about "customer service" and "employee empowerment." By being specific with regard to the above five elements of TQM, we minimized the problem of false positives. We also substituted the label "Quality Improvement" for TQM in order to minimize concern about false negatives.

functions as a measure of commitment to TQM (measure no. 1). Respondents also mentioned the importance of training (measure no. 2). A typical comment was: "TQM requires an incredible commitment toward training," and "we did not underestimate the amount of training required for managers and employees." Others commented that progress has been slow because of negotiations about new reward systems (measure no. 3). A city administrator in Michigan commented that "staff and union resistance to new measurement systems have stymied innovation in this area." Another city administrator stressed the need to develop "a more effective personnel evaluation system." Respondents also noted the need for resources (measure no. 4): "Due to financial constraints, we have not moved as quickly as possible." Resources are also used for hiring consultants: "The use of a consultant keeps us on track: now we live TQM."

A quantitative measure of commitment is useful in order to distinguish token (or initial) commitment from substantial commitment. Although the implementation of standards can appear arbitrary, their plausibility is strengthened by argument and empirical "what-if" analysis. In this vein, we propose a two-part standard that errs on the side of caution. First, we suggest that substantial or minimum credible commitment requires using TQM in at least three service functions: clearly, doing TQM in none, one, or two service areas does not signify much commitment. Second, we propose that cities provide at least 7 of the 19 (i.e. 35 percent) items of training, rewards and resources (see gray box regarding these items). Implementation below this standard is assumed to be token implementation or only initial commitment that is inconsistent with the required level of organizational commitment. It may either provide too little training (e.g., only awareness training), or it may fail to use a range of rewards and resources. It should be noted that changing this standard does not affect the number of cities that use TQM, but rather shifts some cities between the substantial and the token categories.

Findings

Present Status

Respondents who indicated TQM applications in a large number of municipal services were also likely to use a wide range of training efforts, provide rewards for implementing TQM, and commit a relatively high level of resources to TQM (Table 1). The correlations among these four measures suggest a modest to high level of internal reliability. Supported by this statistical result, the four measures are used to make the multivariable construct "TQM commitment."

Our study found that 182 of the 275 respondents who used TQM failed to meet the standard of substantial commitment

Methodology (continued)

Second, the city managers and chief administrative officers who responded to the survey were asked to indicate their familiarity with the city's quality improvement efforts using a three point scale: not familiar (0), familiar (1), and very familiar (2). Respondents in cities using TQM (or Quality Improvement, as it is called in the survey) stated that they were very familiar (mean = 1.59) with TQM efforts in their city.

Third, we conducted telephone interviews with respondents who indicated that TQM is used in a relatively large number of municipal services. Through specific examples, these interviewees affirmed the use of TQM in their city's services. They also affirmed that they had understood and applied the above definition of quality improvement. Very few adjustments were made as a result of these interviews. This further strengthened the validity of our results. In addition, over one hundred telephone open-ended interviews were conducted with city managers and other senior managers about TQM efforts in their cities.

Fourth, we triangulated the responses about service applications with other measures. These other measures are (1) providing training for TQM, (2) the existence of rewards and incentives for implementing TQM, and (3) the commitment of resources for TQM implementation. Thus, this study does not rely on a single measure to determine TQM implementation. The text discusses the measure of "TQM commitment," which is an index variable composed of the following four constructs:

Diffusion. Constructed as the number of functions in which TQM is being implemented, according to respondents. The number of functions stated on the survey is 23, and include: solid waste, streets, traffic, transit, water, sewer, utilities, police, fire, emergency services, animal control, social welfare, public health, corrections, recreation, parks, libraries, museums, fleets/vehicles, taxes, budgeting, data processing, and personnel services. These functions were selected from a list of common municipal services. The measure is scaled 1 to 5, with 1 = low and 5 = high (all functions).

Training. Constructed by a seven-item scale, this measure determines the extent to which TQM commitment is evidenced by training. The seven items concern the provision of training in TQM techniques for senior managers; training in TQM techniques for employees; training in team skills; awareness training for senior managers; awareness training for employees; as well as the involvement of the human resource function in providing training in skills and teamwork. The measure is scaled 0 (no training is being provided) to 7 (full training).

Rewards. Constructed by a five item-scale, this measure determines the extent to which rewards and incentives are available for TQM implementation. The five measures are: rewards for group performance, implementing new performance measures, consistency in the use of new performance measures, recognition of achievement, and gain sharing with employees. The scale is from 0 (no new rewards for implementing TQM) to 5 (all of the above rewards are being used).

Resources. Constructed on a seven-item scale, this measure determines the extent that resources are provided for TQM implementation. The seven items are: the implementation of budgets for quality improvements, the use of consultants, forming a quality council, site visits, use of central coordinators for TQM, developing a plan for cultural change, and assessment of a unit's readiness for implementation. The scale is from 0 (no resources are provided for TQM implementation) to 7 (all of the above resources are provided for TQM implementation).

The Cronbach Alpha measure of internal reliability of these index variables is shown in Table 1.

described above. Given the survey response rate of 68.5 percent (see gray box), it follows that 136 cities [(275-182)/.685] in the population had a substantial (or more than token) commitment to TQM. This was 11 percent (136/1,211) of all cities with a population over 25,000. It follows that an additional 266 cities (182/.685) or 22 percent (266/1,211) have a token commitment to TQM. (See Figure 1 for a breakdown of sample respondents.) Cities in our sample which just barely met the substantial standard implement TQM in an average of 4.4 municipal services, provide 47 percent of possible training strategies, 40 percent of the range of rewards, and 27 percent of resources.[1] Adopting a much less stringent standard, such as only requiring TQM in three service areas, increases the percentage of cities with substantial commitment to 13 percent. Thus, the data appear to be robust.

Survey comments supported these findings. Comments such as "Our effort has just recently been initiated," or "We are involved in the learning process," were typical. However, the fact that many local governments are still at this stage does not imply the absence of positive results. Indeed, many respondents in the category of token implementation stated that "We have had some positive results," and "The first experiences were very satisfactory. We are looking forward to getting more." Other city officials reported substantial experience in TQM: "In departments that have diligently pursued TQM during the past two years, we have had very positive results. We now face the challenge of crossing over to new departments," and "We have been very successful in implementing TQM. We have reorganized 60 percent of our employees that work with external customers. Customer service is at an all-time high."

Municipal commitment to TQM by city size, region, and form of government for cities that do TQM is shown in Table 2. Larger cities had a higher commitment to TQM. This is consistent with West and his colleagues (1994a) who hypothesize that larger cities have greater resources for investing in TQM. Commitment to TQM was not significantly greater in cities with council-manager forms of government, although they were sometimes associated with heightened levels of professionalism, and provided more training in TQM. Cities in the south had significantly higher levels of commitment, which is consistent with Kravchuk and Leighton (1993) who examined TQM in state governments.[2] Surprisingly, cities in the west were not found to have significantly higher levels of commitment to TQM. While many productivity strategies originate in the west, budgetary constraints in states like California may limit resources for TQM and, hence, TQM implementation. This possibility is suggested by Berman (1994), who finds that economic and budgetary growth are positively associated with applying TQM in state governments.

Respondents reported the use of TQM in a range of municipal services, which were selected from those that are commonly provided by cities. Half of all reported efforts occurred in 1990 or thereafter. So, in many cities, implementation is just getting underway. Only 10 percent of TQM efforts were more than five years old. The following data refer to estimates of the number of cities that had efforts underway in these municipal service areas. TQM applications were most often found in police services (125), followed by recreation (107), parks (103), and personnel services and streets (both 100). The relatively high frequency of use in these areas is consistent with anecdotal discussions and case studies in the literature. Other service areas where TQM applications were reported include solid waste (97), water/sewer (93), fire (90), fleet and vehicles (86), data processing (83), traffic (80), emergency services (69), buildings (65), libraries (55), animal control (48), transit (45), tax collection (42), public health (31), and museums (17).

Table 1
Correlations Among the Four Measures of TQM Commitment

	Pearson Correlation Coefficients			
	DIFFUSION	RESOURCES	REWARDS	TRAINING
DIFFUSION	1.000			
RESOURCES	0.359**	1.000		
REWARDS	0.341**	0.419**	1.000	
TRAINING	0.287**	0.532**	0.348**	1.000

Cronbach Alpha = 0.71

Notes: The number of observations is 275. See the box "Methodology" for definitions of these four measures. Values of Cronbach Alpha between 0.7 and 0.8 suggest acceptable levels of measurement reliability. Values greater than 0.8 indicate very high levels of reliability. The value of alpha increases to 0.86 by including observations from cities which responded that they are not doing any of the measured TQM activities. While these observations are pertinent to assessing the index measure's reliability, they are not included in the subsequent analysis. Also, within the smaller data set used in this research, the value of alpha increases to 0.77 when omitting the "rewards" measure. However, the measure "rewards" is retained on theoretical grounds since it is an indicator of commitment to TQM.

** = 1 percent significance.

Forces Driving Commitment

Many factors spur cities to implement TQM. In this study, we discuss "external" forces that cause concern for quality and productivity, such as public complaints and success stories in business, and "internal" forces such as budget pressures and city manager interest. Among the external forces, public complaints and voter demands were reported by 75 percent and 59 percent, respectively, of the respondents as being "important" or "very important" factors driving their TQM efforts (Table 3). In interviews, several municipal administrators noted that frequent public complaints about particular city services, such as permitting, fire inspection, and garbage collection, had caused them to urge department directors to undertake improvements. Business success stories were less important (37 percent), as was the use of TQM in neighboring cities (23 percent)—a "keeping up with the Joneses" syndrome was not apparent. Neither were demands from higher governments (19 percent), which have yet to make productivity a significant focus of intergovernmental relations.

On average, internal forces were rated somewhat higher in importance than external forces. City manager interest was rated by 87 percent of the respondents as an important or very important factor driving municipal commitment to TQM. The importance of city managers is not surprising given the respondent sample of chief administrative officers (CAOs), but it is consistent with the literature that discusses that TQM requires comprehensive, long-term, and cultural changes that can only

succeed in the presence of committed top leadership. This dependence on top leadership was also reflected in survey comments: "We have had a good commitment from the city manager for training. Now we are trying to decentralize the effort," but also: "We are awaiting the arrival of the new city manager. He has a definite interest in TQM."

Other important internal factors were budgetary pressures (79 percent), the need to increase employee productivity (88 percent), and strategic planning activities (70 percent). These factors were supported by survey comments, and also mentioned by Stupak (1993). In one city, TQM was first applied to the finance department because of a deficit in the General Fund. "After two years of TQM, we turned the General Fund deficit into the largest surplus in history." In Hollywood, Florida, budget shortfalls and strategic planning caused a major reorganization of municipal services; implementing TQM was one focus in this municipal reorganization. Strategic planning was also used to identify areas of improvement, and to garner support for change by involving a wide range of actors. Interest among council members and mayors was mentioned by 59 and 58 percent, respectively, as important reasons. One city manager commented that "the lack of knowledge among elected officials in sophisticated management techniques hinders our effort to implement TQM." He also commented that "many council members are retirees who are locked into outdated management strategies."

Table 2
Total Quality Management in City Government by Size, Region, and Form of Government

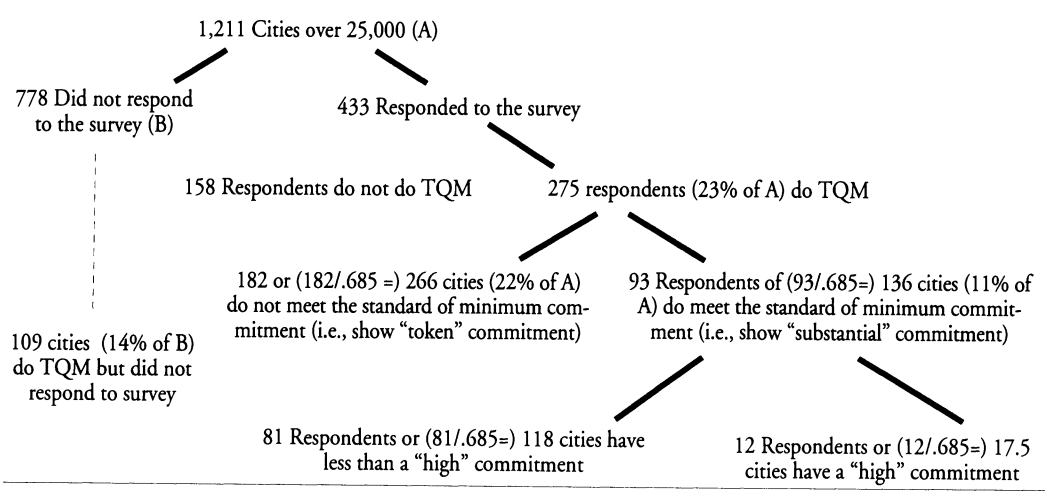
Characteristics	Population	Sample	Percent with Subst. Commit.	Diffusion	Training	Resources	Rewards	Commitment
Size								
Over 500,000	24	8	50	4.0	7.0	3.9	5.3	5.5
250,000-499,999	40	16	44	3.8	7.1***	6.0*	5.1	6.0***
100,000-249,999	131	40	35	3.0	7.0*	4.6***	4.7	5.3**
50,000-99,999	337	81	27	2.4*	5.6	3.6	3.7	4.4
25,000- 49,999	679	130	35	2.9	5.3**	3.7	4.0	4.4*
Region								
North East	281	34	41	3.6	4.8*	3.8	3.7	4.4
North Central	310	65	26	2.3*	5.7	3.7	4.1	4.4
South	292	88	38	3.0	6.5***	4.5**	4.6	5.1***
West	328	88	33	2.8	5.6	3.8	4.0	4.5
Government								
Mayor-council	442	64	38	3.0	5.5	3.8	4.3	4.6
Council manager	719	201	32	2.7	5.8	4.0	4.1	4.7
Commission	23	5	20	3.0	8.3*	4.6	4.0	5.4
Other	27	5	60	4.7	6.3	5.1	3.2	5.3
Total	1,211	275	34	2.8	5.8	4.0	4.1	4.7

Notes: See gray box regarding response rates. The denominator of the percentages shown in the third column are all cities that use TQM. The index numbers in the other columns are scores representing the number of items implemented in each category (see box). The index scores are scaled 0 (low) to 10 (high): hence, a 10 implies that all the items that constitute the measure are being implemented; a 5 indicates that half of the items are being implemented. The diffusion measure is based on the number of functions in which TQM is being implemented. The survey listed 23 different functions: for example, a score of 3 in the Diffusion column indicates that, on average, TQM is being implemented in (3*23/10)= 6.9 municipal functions. The *t* tests compare the mean of each subgroup against the mean of the remaining observations.

*** 1 percent significance; ** 5 percent significance; * 10 percent significance (compared with group mean, *t* test).

Despite the importance given to many external and internal forces, statistical analysis showed that only the level of city manager interest is significantly associated with increased municipal commitment to TQM (Table 3). The consistency of this finding across nearly all forces, and tested by using different measures of commitment, suggests that this lack of significance is not an error. Rather, it may be that despite our interviews, the efficacy of internal and external forces is reflected *indirectly* by causing cities to undertake those strategies that are necessary for implementing TQM. For example, public complaints may cause city managers to instruct departments to identify citizen needs better and to treat citizens and businesses with more respect. In this manner, all but one of the forces (city manager interest) is indirectly associated with increasing municipal TQM commitment.

Figure 1
Sample Respondents



Implementation Strategies

TQM implementation involves many challenges for local leadership. These challenges can be analytically described as requiring transformational, transactional, and representational strategies (West, Berman, and Milakovich, 1994a;

Although *visionary goals sometimes evoke unquestioned commitment, often special efforts are needed to ensure that change is embraced and not rejected.*

Bass, 1990). *Transformational* strategies are defined as those change efforts through which new visions, goals, objectives, and processes are introduced in the organization. For example, leaders may reformulate mission statements, use mid level implementation teams, and monitor internal performance to promote high quality, customer-friendly services. Leaders may also use benchmarking to measure performance against best-in-class units, collect objective data to promote rational decision making, and implement pilot projects to fine-tune the initial application of TQM in their organization.

Although visionary goals sometimes evoke unquestioned commitment, often special efforts are needed to ensure that change is embraced and not rejected. *Transactional* strategies aim to ensure that TQM methods, approaches, and principles are accepted by employees and others involved in municipal government. Modern approaches stress the importance of accommodation and consultation, and a common strategy is to involve employees in decision making about implementation. Other examples of transactional strategies are monitoring worker satisfaction, recognizing achievement, promoting employee development, and using rewards for superior performance.

Representational leadership strategies help to ensure that TQM efforts are acceptable to external stakeholders, such as political and community groups. In the absence of broad-based support, innovations such as TQM may not have longevity (Loveless and Bozeman, 1983; Cohen, 1988; Levin and Ferman, 1985). Representational strategies seek to obtain backing from elected officials, other municipal managers, community actors, influential private elites, and other players in the external environment who can affect the fate of quality initiatives.

The use of different implementation strategies are reported in Table 4. It shows that identifying customer needs (79 percent) and increasing coordination between units (73 percent) were the most commonly used transformational strategies by organizations focused on TQM. Getting units to increase their coordination was used as a strategy to overcome bureaucratic resistance within units. Other strategies included monitoring internal performance and customer satisfaction (both 70 percent). Many cities also reformulated their mission statements (66 percent) and use midlevel implementation teams (58 percent).[3] Midlevel implementation teams combine middle managers and employees for the purpose of creating early successes in pilot projects and obtaining pockets of commitment for subsequent TQM efforts in organizations. Such teams often provide models for subsequent emulation (or cascading) throughout the municipality (Chang, 1993; Bowman and French, 1992).

Transactional strategies facilitate employee involvement. Cities that did TQM involved their employees in implementation (76 percent), recognized achievement (71 percent), and used employee empowerment (62 percent). Almost half of them supported grass root initiatives (46 percent) and monitored employee satisfaction (45 percent). Some cities also used labor management committees (43 percent), which provide a forum for discussing employee problems, sometimes in conjunction with bargaining units. Representational strategies were also widely used. These strategies included obtaining support from the city manager (82 percent), senior managers (80 percent), mayor (72 percent), and city council persons (70 percent). In many cities, TQM was implemented as official city policy: this provided support for the city administrator's efforts and it also foreclosed "end runs" by disgruntled employees who might otherwise have targeted the city council as a forum for their discontent.

Each of the 28 strategies listed in Table 4 is associated with increasing TQM commitment in cities (t tests, $p < 0.01$). These results were not shown in Table 4, because all of the relations are statistically significant. Each of the transformational, trans-

Table 3
Reasons for Implementing TQM and Association with TQM Commitment

Reason	% Indicating Important or Very Important Reason for Implementing	Association with Municipal TQM Commitment
External Forces		
Public complaints	75	5.7
Voter demands	59	0.9
Success stories in business	37	2.0
Media discussion	29	0.3
Local capabilities (e.g., colleges)	27	4.4
Professional associations	25	2.8
Used by nearby governments	23	1.9
Demands from other governments	19	3.5
Internal Forces		
Increase employee productivity	88	2.2
City manager interest	87	13.7 ***
Budget pressures	79	3.3
City strategic planning	70	3.9
Community planning activities	70	2.0
Public relations	65	0.4
Initiatives from senior managers	62	2.7
Employee interest	59	4.9
Councilperson interest	59	0.6
Mayor interest	58	1.5
Initiatives from agency directors	57	3.4

Notes: Reported measures are chi-square values. The reasons are based on four groups: very important, important, somewhat important and not important. The variable municipal TQM commitment is defined in the text. For the purpose of analysis, this continuous variable is recoded in three groups, i.e., token commitment, low substantial commitment, and high substantial commitment. Different measures of high/low commitment were used, but no statistically different results were obtained.

*** 1 percent significance.

actional, and representational strategies furthered the level of TQM commitment in cities. The data in Table 4 also show that many of these strategies were more frequently used in larger cities, although these differences were not always significant. This is consistent with the results reported in Table 2.

Organizational Factors

It has also been suggested that TQM is more likely to be implemented or sustained in those organizations whose policies are consistent with those of TQM (West, Berman, and Milakovich, 1994b; Durant and Wilson, 1993). For example, departments that already encourage cooperation and open communication between units may find these units to be more receptive to TQM, or at least less threatened by it. This study provides some tentative answers to a range of suggestions that have been made about the "organizational predisposition" to favor TQM: specifically, the organizational policies and human resource (HR) contributions to employee development, and the link, if any, of these policies, strategies, and contributions to TQM commitment.

Concerning organizational policies, it has been suggested that encouraging communication between units, discouraging information secrecy, encouraging employee participation, emphasizing change, focusing on systems improvement, coordinating linkages among units, and using long-term planning may be associated with increased commitment to TQM (Cohen and Brand, 1993). In part, this can be attributed to TQM's incorporation of openness and employee participation as important tenets. We found mixed support for these propositions. The data in Table 5 show that emphasizing change, long-term planning, and employee participation in decision making are indeed associated with increased commitment to TQM, as is focusing on systems improvement and coordinating linkages between units. However, policies that discourage secrecy and encourage communication are not significantly associated with increasing the level of TQM commitment.[4]

Five of the seven HR activities that further employee development are statistically associated with commitment to TQM. For example, HR activities that help managers to assess employees' skills and to fully use employees' skills further the municipal TQM commitment. In interviews, respondents stated that the availability of such skills-development programs greatly facilitated the implementation of TQM, which often requires increases in team and interpersonal skills. In many cities, HR professionals also played a lead role as advocates for TQM and providers of training. Indeed, the active involvement of HR professionals suggests that traditional public administration functions need not be barriers to change and productivity innovation: HR departments that provide support functions contribute to organizational effectiveness (Carnavale, 1992; West and Berman, 1993).

An Exploratory Model

To understand better the relationships between municipal TQM commitment, implementation strategies, internal and external forces, and organizational policies and strategies, we analyzed an exploratory, statistical model. This model also allowed for assessing the relative impact of these different factors. Path analysis was used because the above variables may have both direct and indirect effects on the level of municipal TQM commitment. However, the model did not consider possible effects of TQM implementation on organizational and other strategies, because, for this purpose, additional time series data and survey items were required. Path analysis also assumes that the model, discussed below, is theoretically valid.

To examine the effects of such a large number of items, we constructed index variables for each of the above categories such as "transformational strategies," and so on. (In a later step, the individual measures were reexamined to ensure that these effects were not overlooked.) The values of the index variables are defined as the sum of responses of the individual measures in

Table 4
Strategies for Implementing TQM and City Size (all numbers in percent)

	Cities Using Strategies	Use of Strategies in Large Cities	Use of Strategies in Small Cities
Transformational			
Identifying customer needs	79	84	77
Increasing coordination between units	73	80	70
Decisions based on objective data	72	81	69 *
Monitoring internal performance	70	80	67 **
Monitoring customer satisfaction	70	85	65 ***
Reformulating mission statements	66	78	63 **
Mid-level implementation teams	58	63	56
Conducting a pilot implementation	48	69	42 ***
Comprehensive top-down planning	42	48	41
Productivity models adopted elsewhere	38	43	36
Benchmarking	35	45	32 *
Transactional (Employee Involvement)			
Involving employees in implementation	76	85	73 *
Recognition of achievement	71	84	67 **
Employee empowerment	62	68	60
Support of grass roots initiatives	46	47	46
Monitoring employee satisfaction	45	47	44
Labor management committees	43	37	45
Consistency in use of new rewards	43	52	41
Employee career development programs	42	50	39
Assessment of readiness for TQM	33	45	30
Representational (External Support)			
Obtaining support from the city manager	82	84	81
Obtaining support from senior managers	80	87	77
Obtaining support from the mayor	72	77	70
Obtaining support from councilpersons	70	71	70
Obtaining support from other agency directors	52	55	51
Obtaining support through community participation	49	56	47
Obtaining support from influential private citizens	42	47	40
Obtaining support from other political leaders	37	38	37

Notes: Large is defined as greater than 100,000 citizens.

*** 1 percent significance; ** 5 percent significance; * 10 percent significance.

each category.[5] Cronbach alpha was used as a measure of internal reliability for each of the indices. The value of alpha ranged from .70 to .82, suggesting moderate (acceptable) to high internal reliability for these index variables (Table 6).

The model is the final result of an analytical strategy whereby a wide range of plausible relationships were examined, and those that were not significant were eliminated (Figure 2). This model was examined for structural integrity, as well as consistency and robustness by testing the inclusion and exclusion of variables. Individual measures were also examined subsequent to both omitting and including these variables from "their" index measure. However, this procedure did not suggest that any individual-level variables should be included. The model explained 68 percent of the variance in the level of municipal TQM commitment. The path analysis is shown in Figure 2. This complex figure is best read in two steps: (1) the direct effect of the various strategies (shown in the middle) on TQM commitment (shown on the right) and (2) the effects of internal forces, external forces, and organizational policy (shown on the left) on the various strategies (in the middle).

Table 5
Organizational Policies and Human Resource Strategies and Association with TQM Commitment

Strategy	Percent of Cities Using HR Strategies	Association with Municipal TQM Commitment
Organizational Policies		
Encourages communication between units	82	2.3
Discourages information secrecy	80	1.0
Encourages employee participation in management decisions	78	10.9 **
Focuses on systems improvement	78	14.4 **
Coordinates linkages between units	76	5.1 *
Uses long-term planning	70	9.1 **
Emphasizes change	68	7.4 **
HR Contribution to Employee Development		
Employee development programs	87	3.6
Coaching by supervisors	71	4.3
Provides training in team methods	69	6.6 *
Assesses employee skills	64	7.5 *
Analyzes skills/task mix	51	10.8 **
Surveys of employee satisfaction	49	6.5 *
Fully uses employee skills	46	17.3 **

Note: Reported measures are chi-square values. The policies and HR practices are coded as 1 and 0, representing their presence or absence in municipalities. See note accompanying Table 3 regarding the coding of the variable "municipal TQM commitment." Although alternative groupings were used, this did not alter the statistical significance of the results.

** 1 percent significance; * 5 percent significance.

Both Figure 2 and Table 6 show the path or beta coefficients.[6] These coefficients show that, for example, the effect of transformational strategies on TQM commitment was more than five times greater than the direct effect of being located in a large city (.37 versus 0.07). The indirect effect of, for example, internal forces on TQM commitment by increasing the level of transformational strategies was calculated as 13 percent of .37, or, .048 (from Figure 2). In this manner, all of the direct and indirect impacts were calculated (Table 6). It was found that the *largest* effects on TQM commitment were the extent to which transformational (.37), transactional (.38), and representational (.44) strategies were implemented: the indirect effect of the latter was large. The combined effects of internal forces in large cities were also comparable to these strategies (.36). The effect of HR programs for employee development was also considerable (.25).

A noteworthy detail is the negative, direct effect of external forces on transformational and transactional strategies (-0.14 and -0.23). A possible explanation is that public complaints, which are an important external factor, require short-term responses, rather than the long-term perspective that TQM requires (Berman, 1994b). However, external forces also have indirect effects on transformational and transactional strategies by increasing the level of internal forces (such as city manager interest). These indirect effects were positive. The indirect effect on transformational strategies was .08 (.61*.13), and the indirect effect on transactional strategies was .12 (.61*.20). The sum of positive and negative effects is -0.17 (-0.14-0.23+0.08+0.12).

Concluding Considerations

This study finds that TQM is well underway in municipal government. Through a composite of multiple measures, it shows that 11 percent of cities with populations over 25,000 have a substantial commitment to TQM. In addition, an estimated 22 percent have a token commitment to TQM. Half of all efforts are less than four years old, and many interviewees stated that although they are satisfied with progress to date, there is a need to diffuse efforts throughout other departments and agencies. Cities use a wide range of transformational, transactional, and representational strategies in implementing quality initiatives, all of which are significantly associated with municipal commitment to TQM. Uniquely, this study also shows important indirect effects of representational strategies.

The data also suggest that while TQM is well underway, it is still too early to evaluate the outcomes of these efforts. An important finding is that over 40 percent of our respondents stated that it is "too early to tell" when evaluating the results of their efforts. Of those reporting results, respondents note only modest, albeit positive, impacts. Using a five-point scale (-2 = very negative impact to 2 = very positive impact), respondents gave the following ratings: efficiency gains (0.98), cost reductions (0.84), quality of service (1.04), and customer satisfaction (0.99). Similarly, some gains were made in improving group decision making (0.92), delegating responsibility (0.77), increasing communication in units (1.01), and coping with resource constraints (0.88). Data in Table 7 shows that these outcomes are moderately associated with the level of municipal commitment to TQM.[7] Analysis also shows that cities with recent implementation efforts report significantly higher levels of commitment and impact of TQM.[8]

Finally, it is also too soon to tell whether TQM will be just another fad. Critics of TQM point to myriad challenges that

Table 6
Determinants of TQM Commitment

Factor	Cronbach alpha	Direct Effects	Indirect Effects	Total Effects
Transformational strategies	.81	.37	—	.37
Transactional strategies	.70	.38	—	.38
Representational strategies	.82	.10	.34	.44
Human resource contributions to employee development	.72	.17	.08	.25
Organizational policies	.75	—	.16	.16
Internal forces	.71	—	.19	.19
External forces	.76	—	.05	.05
South	—	.08	.03	.11
Size	—	.07	.10	.17
Form of government	—	—	.01	.01

Note: The adjusted rsquare of the model regarding TQM commitment is .68. The entries in the three right columns are beta coefficients.

Table 7
Association Between Level and Impact of TQM Commitment

Impact	Level of Commitment: High	Medium	Low
High	3 (22%)	5 (39%)	5 (39%)
Medium	3 (5%)	32 (52%)	26 (43%)
Low	4 (5%)	21 (27%)	53 (68%)

Note: Chi square is 16.4 ($p < 0.01$). Number of observations is 152.

this encompassing strategy poses, and they recall previous productivity-improvement efforts which floundered after initial, widespread enthusiasm. However, if lessons from past efforts are an indication, one would expect that orientations toward debureaucratization, customer focus, and cost effectiveness will continue in some shape or form. This is because customer focus is overdue, feasible, and consistent with modern notions of public administration. Indeed, only the most cynical observers might suggest reversing a charted course that aims to improve government. Nonetheless, in the process of improving government, it is apparent that there are many bureaucratic counter forces (Holzer, 1992). Those responsible for implementing TQM would do well to acknowledge and deal with them effectively.

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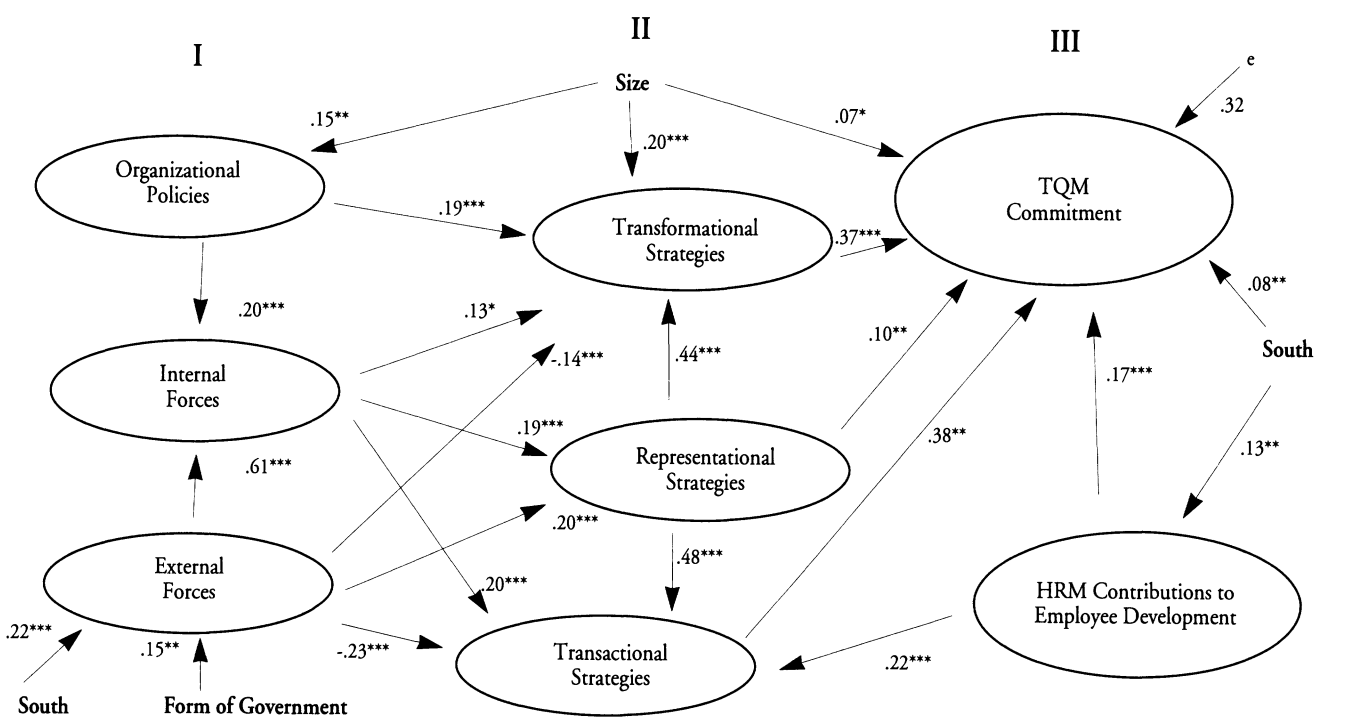
Figure 2
A Path Analysis of TQM Commitment



*** 1 percent significance; ** 5 percent significance; * 10 percent significance. (Numbers are standardized regression coefficients(betas)).

Notes

1. The number of municipal services, 4.4, exceeds the standard of 3.0, because cities which apply TQM in 3.0 services often fail to satisfy the other requirements. Regarding specific items, the most common activities are recognition of achievement (70 percent), training in team skills (60 percent), training in techniques for employees (60 percent), training in techniques for senior managers (50 percent), involvement of the human resource function in TQM training (50 percent), use of new performance measures (50 percent), site visits (50 percent), and use of consultants (40 percent). These results are based on cities that just exceed the cut-off point.
2. The 50 states were divided into the nine geographic divisions and four regions (Northeast, North Central, South, and West) used by the Bureau of the Census. The South region encompasses the South Atlantic, the East South Central, and the West South Central divisions, which include the states of AL, AR, DE, KY, FL, GA, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV, plus DC. Kravchuk and Leighton's (1993) results identified seven of these states from the southern region among the 15 top-ranked states using a composite index of TQM implementation status. Those seven states are AR, TX, WV, MD, OK, DE, and FL.
3. The reported data in Table 4 are somewhat lower than that reported in West, Berman, and Milakovich (1994a), because the data set in this study included all cities that had some level of commitment to TQM, including those that only did training, for example. By contrast, the results reported in West, Berman, and Milakovich (1994a) include only those cities that use TQM efforts in at least one municipal service.
4. A possible explanation is that policy adoption per se is a very inaccurate measure of actual openness and participation in organizations, which is more likely to be a determinant of TQM implementation.
5. For example, the value of the variable "transformational strategies" is the number of transformational strategies that are used according to the survey respondents in each city. The range of transformational strategies is shown in Table 4, part A. Likewise, indices are computed for the other variables that are discussed.
6. Beta coefficients show the change produced in the dependent variable by a unit change in the independent variable when both are measured in terms of standard deviation units.
7. In Table 7, a low level of commitment is defined as failing to meet the minimum threshold standard, discussed above. A high level of commitment is defined as applying TQM in seven or more services and using at least 66 percent of maximum training, resources, and rewards for TQM. Twelve respondents in the sample satisfy these requirements. This is 17 cities in the population, or 1.4 percent. Only 10 of these cities are shown in Table 7, because of missing data ("too early to tell").
8. Cities which implemented TQM before 1990 have a commitment index of 4.2 (Table 2) and an impact index of 0.49 (Table 7). Cities which implemented TQM after 1990 have a commitment index of 5.2 and an impact index of 0.92. Both differences are statistically significant at the 1 percent level.

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