

## RESEARCH NOTES AND COMMENTARIES

### STRATEGIC (MIS)FIT: THE IMPLEMENTATION OF TQM IN MANUFACTURING ORGANIZATIONS

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*This paper explores how fit with the organization's strategic orientation relates to performance following total quality management (TQM) implementation. Conceptualizing the organization as a system of interrelated activities, we propose that TQM is an 'elaborating element' that achieves internal fit when the core elements of the activity system are orientated toward a 'cost leadership' rather than 'differentiation' strategic position. When internal fit occurs, TQM drives tighter interactions among core elements in the activity system, resulting in greater performance. Using longitudinal data from a sample of 780 manufacturing organizations, we find that TQM is positively related to performance for cost leaders, but negatively related to performance for differentiators. Our findings support the contingency perspective whereby internal fit serves as an overarching contextual factor influencing TQM success. Copyright © 2012 John Wiley & Sons, Ltd.*

## INTRODUCTION

Although total quality management (TQM) has been widely adopted in the last 50 years, scholarly and anecdotal evidence has not found a universally positive association between its implementation and organizational performance gains (Powell, 1995; Dow, Samson, and Ford, 1999; Beer, 2003; Nair, 2006; Jayaram, Ahire, and Dreyfus, 2010). Instead, research has suggested that a number of contextual factors drive the relationship between

TQM and performance (Sila, 2007; Sousa and Voss, 2008; Jayaram *et al.*, 2010). Indeed, 'moderating factors explain the lack of evidence of a significant relationship between some quality management practices and performance' (Nair, 2006: 971).

We suggest that moderating conditions in the association between TQM and performance are indicative of a larger question: the degree to which TQM achieves 'internal fit' with the implementing organization. Conceptualizing the organization as a system of interrelated elements or activities (Levinthal, 1997; Siggelkow, 2002) oriented toward a particular strategic market position (Porter, 1996), internal fit occurs when elements in this system are consistent and reinforce each

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other (Drazin and Van de Ven, 1985; Siggelkow, 2001). We propose, then, that positive performance attends TQM when the strategic orientation of the activity system provides a context (Porter and Siggelkow, 2008) in which TQM achieves internal fit. In this way we adopt a 'contingency perspective' (Sitkin, Sutcliffe, and Schroeder, 1994; Peteraf and Reed, 2007) and explore complementarities (Milgrom and Roberts, 1990) between TQM implementation and activity system strategic orientation.

TQM primarily focuses on increasing efficiencies and improving processes, particularly when implemented in manufacturing organizations (see Sousa and Voss, 2002; Nair, 2006 for reviews). That is, 'quality' in the TQM context connotes 'cost reduction' rather than 'quality improvement' in the conventional sense' (Winter, 1994: 95). Accordingly, we test the proposition that TQM will find the greatest opportunities for internal fit—and, by extension, positive performance—in organizations where activity system elements (Siggelkow, 2002) are oriented toward a 'cost leadership' strategic position (Porter, 1980). Symmetrically, in organizations where the activity system is oriented toward 'differentiation' (Porter, 1980), TQM will experience 'misfit' and, hence, be less likely to return performance benefits.

We test our predictions using a longitudinal dataset of 780 Canadian manufacturing organizations during the period 1999–2003. By integrating insights from activity system scholarship with the TQM literature, our study provides a framework for understanding organizational-level contextual determinants of successful TQM implementation. Additionally, our results provide large-sample empirical support for theoretical propositions in the activity system literature; namely, that complementarities among the organization's activities are contextually dependant upon the activity system as a whole (Porter and Siggelkow, 2008), and that internal fit is an important driver of performance when adding elements to the activity system (Siggelkow, 2002).

## THEORY

Researchers have proposed a number of conditions that influence the success of TQM implementation. Many of these moderating conditions encompass internal firm properties such as plant size,

unionization, ISO 9000 certification, TQM duration, and self-managed teams (Manz and Stewart, 1997; Sila, 2007; Sousa and Voss, 2008; Jayaram *et al.*, 2010). These diverse factors can facilitate or hinder the integration of TQM into the organization through management support, collaboration, expertise, and communication. However, the predicted effects of these contingency factors are not unequivocal. For example, some researchers find that size, unionization, and ISO 9000 moderate the association between TQM and performance, while others find nonsignificant results for these same contingency factors (Sila, 2007; Jayaram *et al.*, 2010). Thus, more research is needed to understand how the organizational context influences TQM implementation (Sila, 2007). We contend that the strategic orientation of the organization's activity system (Porter and Siggelkow, 2008) serves as an overarching contextual factor influencing performance following TQM implementation.

### Activity system orientation as the locus of fit

Conceptualizing the organization as a system of activities or interrelated elements, Siggelkow notes, '[o]rganizational elements such as firms' activities, policies, structural elements, and resources are seen to form complex systems, or configurations' (2002: 125). Building on earlier work (e.g., Hannan and Freeman, 1984; Singh, House, and Tucker, 1986), Siggelkow suggests that some activities in this system are 'core' elements: they are tightly connected, or 'interact,' with other elements in the system (2002: 127). In this way, the activity system as a whole is characterized by the connections or interactions of its core elements. This is important inasmuch as core organizational elements are necessarily strategically oriented, thereby allowing the firm to pursue a particular market position (Porter, 1996).

In considering how activity systems evolve, Siggelkow (2002) introduces the idea of 'elaborating' elements, or elements that are added to the activity system to reinforce existing elements. When complementary with other elements or the system as a whole (Porter and Siggelkow, 2008), these new elements 'thicken' connections in the system (Siggelkow, 2002: 145). In this way, internal fit begets internal fit: elaborating elements that support existing elements drive tighter connections between them. When elements in the system achieve internal fit, high performance (Drazin and

Van de Ven, 1985) and sustainable competitive advantage (Porter, 1996) can accrue to the organization.

The central theoretical proposition of this paper, then, is that TQM can be an elaborating element: when added to an organization's activity system, the performance associated with TQM will be a function of the degree to which TQM experiences internal fit (or misfit) with core elements in the activity system. Since, as we have noted, the activity system can be characterized by the strategic orientation of its core elements, this is equivalent to proposing that internal fit occurs when TQM is consistent with the strategic orientation of the firm's activity system.

We differentiate strategic orientations using Porter's (1980) well-known terminology.<sup>1</sup> *Cost leadership* is a high efficiency strategic orientation where organizations achieve competitive advantage by eliminating waste in the production and/or service delivery process. Accordingly, core organizational elements in an activity system oriented toward cost leadership focus on achieving the cost-based strategic positioning. Since TQM is generally implemented to achieve cost efficiencies, we expect that TQM will achieve greater internal fit to the degree that the activity system is oriented toward cost leadership.

Conversely, activity systems with a *differentiation* strategic orientation focus on enhancing the value of a product or service through innovation and responsiveness to customer preferences. We expect core elements in these organizations to manifest tight connections focused on designing and producing new, improved, and/or higher performing products and services. While some researchers have suggested that TQM could align with a differentiation orientation given the intense customer focus characteristic of some TQM initiatives (e.g., Reed, Lemak, and Montgomery, 1996; Prajogo and Sohal, 2006), recall that TQM is most generally associated with internal process improvements and cost reduction (Winter, 1994), particularly in the manufacturing context (Sousa and Voss, 2002). Thus, we expect that firms where

core elements of the activity system have a differentiation orientation will experience misfit when implementing TQM. These observations lead us to predict that the strategic orientation of the organization's activity system will moderate the association between TQM and performance.

*Hypothesis 1: The interaction of a cost leadership activity system orientation and TQM implementation will be positively related to performance.*

*Hypothesis 2: The interaction of a differentiation activity system orientation and TQM implementation will be negatively related to performance.*

In their 'pure' form, cost leadership and differentiation are two distinct strategic orientations (Thornhill and White, 2007) achieved by the orientation of core organizational elements. However, in theory and practice there is a third orientation to consider: namely, firms where the activity system has some core elements oriented toward cost efficiencies and some oriented toward product differentiation. Researchers refer to this as the 'hybrid' or 'mixed' orientation (Thornhill and White, 2007). If cost leadership and differentiation elements have equal prominence in the activity system, the hybrid orientation could provide both cost- and value-based strategic benefits (Hoopes *et al.*, 2003). Yet, given the competing strategic priorities associated with cost leadership and differentiation (Porter, 1980), there may be a limit to the degree to which core elements in the activity system can interact and reinforce each other. Thus, an activity system with a hybrid orientation may reflect an *a priori* misfit among existing organizational elements. What, then, might be the effect of TQM as an elaborating element in such an activity system?

A hybrid orientation necessarily requires more core elements focused on cost efficiency than does a system oriented more 'purely' toward differentiation; thus, at a minimum, there will be opportunities for TQM to thicken connections between these efficiency-oriented elements. We expect, then, that organizational performance following TQM implementation will be a positive function of the degree to which the activity system is oriented toward 'pure' cost leadership. That is, TQM will achieve the greatest internal fit in activity systems where core elements oriented toward cost leadership are

<sup>1</sup> In using Porter's (1980) terminology, we are not suggesting that we favor this framework over others (e.g., Miles *et al.*, 1978; Treacy and Wiersema, 1995; Hoopes, Madsen, and Walker, 2003). Rather, Porter's terms are sufficiently general to capture the core and overlapping insight of existing typologies and perspectives; namely, that value and cost are the two fundamental and distinct components of the firm's strategic orientation.

most prominent, the greatest misfit in organizations where core elements oriented toward differentiation are most prominent, and some mid-range level of fit—similar to Miles and Snow's (1994) notion of 'minimal fit'—in organizations where core elements oriented toward differentiation and cost leadership are equally prominent.

*Hypothesis 3: The greater the activity system's orientation toward 'pure' cost leadership, the stronger the relationship between TQM implementation and performance.*

## METHODOLOGY

We test our hypotheses with data from the Workplace and Employee Survey (WES) collected by Statistics Canada (Statistics Canada, 2004). This annual survey samples all Canadian business establishments with an address and employees on the payroll. WES respondents are either independent organizations with profits and losses, or—if part of a larger company—can track sales and costs separately from other locations in the organization. In this way, the WES sample is consistent with the operations management research that has studied TQM implementation at the manufacturing plant- and site-level (Sousa and Voss, 2002). We used WES data from the five-year period 1999–2003 and conducted our analysis on the 780 manufacturing organizations with complete survey data during our sampling frame.

We measured the dependent variable *performance* as operating margin, calculated as operating revenues minus operating expenditures divided by operating revenues. This variable was calculated using data from the 2003 survey. A baseline control variable for *prior performance* was calculated with data from the 1999 survey.

We measured TQM implementation using the WES question 'has your workplace experienced the implementation of TQM in the prior 12-month period?' This question was coded for each year as yes (1) or no (0), and we aggregated the five years of responses to create the variable *TQM implementation* (hereafter referred to as *TQM*), which ranged from 0 to 5. The cumulative measure captures the organization's commitment and investment of time and resources to an ongoing TQM program (Sila, 2007), as well as the opportunity

for employees to develop a deeper understanding of TQM practices (Jayaram *et al.*, 2010).

We created two empirically distinct measures of activity system strategic orientation. WES includes a number of items asking respondents to rate organizational activities 'with respect to their relative importance in [their] workplace general business strategy' (1 = 'not important,' 5 = 'crucial'). We follow Thornhill and White (2007), and use seven of these items to measure the strategic orientation of the organization's activity system. To measure *cost leadership*, we summed response scores of four items ( $\alpha = 0.74$ ): 1) 'reducing labor costs,' 2) 'reorganizing the work process,' 3) 'improving coordination with customers and suppliers,' and 4) 'improving measures of performance.' Likewise, we constructed the variable *differentiation* by summing responses on three items ( $\alpha = 0.72$ ): 1) 'undertaking R&D [research and development],' 2) 'developing new products/services,' and 3) 'developing new production/operating techniques.'<sup>2</sup> Finally, we averaged the year-specific summed values for each variable over our sampling frame.

We also include a number of controls theoretically motivated by existing TQM research, using data from the 1999 WES. *Organization size* was measured using the logarithm of total number of employees, and *organization age* was defined as number of years the organization had operated at the current business location. *Union density* was measured as the proportion of employees in the organization covered by a collective agreement. Four industry dummies differentiating among manufacturing sectors were created based on North American Industry Classification System codes: primary, secondary, labor, and capital-intensive tertiary. We also control for organizations from *multi-site operations* (1=multi-site operation; 0=single-site operation). We measured *layoff rate* using layoffs divided by total employees, and used

<sup>2</sup> We performed a confirmatory factor analyses using LISREL VIII (Jöreskog and Sörbom, 2004) and verified that the seven items loaded on the two strategic orientation dimensions. The two-factor model had an acceptable fit ( $\chi^2 (13, N = 780) = 91.78, p = 0.001$ ): goodness-of-fit index (GFI) of 0.97, a normed comparative fit index (CFI; Bentler, 1990) of 0.96, and a root-mean-square error of approximation (RMSEA; Browne and Cudeck, 1993) of 0.08. Examination of the parameter estimates (factor loadings) of the best fitting two-factor model were all significant ( $p < 0.05$ ) and ranged from 0.47 to 0.87. Finally, the hypothesized two-factor model was a significantly better fit for the data than both the null ( $\Delta\chi^2 (8, N = 780) = 2143.71, p < 0.001$ ) and the one-factor model ( $\Delta\chi^2 (1, N = 780) = 564.64, p < 0.001$ ).

the logarithm of the layoff rate plus one in our models. Two dummy variables were created that indicated whether an organization's main competition was located in Canada (*compete nationally*) or the United States/international (*compete internationally*). Finally, we control for a major software or hardware implementation in the current year with the dummy variable *new technology implementation* (1 = major implementation; 0 = no implementation).

Testing our hypothesized predictions of fit as moderation (Venkatraman, 1989), we modeled a moderated hierarchical regression (Cohen *et al.*, 2003), with centered variables for the interaction terms. In particular, we test Hypotheses 1 and 2 with two-way interactions of *TQM* and each strategic orientation, and Hypothesis 3 with a three-way interaction of *TQM*, *cost leadership*, and *differentiation*. The three-way interaction enables us to compare the *TQM-performance* relationship for organizations with 'pure' cost leadership, 'pure' differentiation, and hybrid orientations. In all analyses we used weights established by Statistics Canada (calculated based on the inverse of the probability of selection) to ensure that the sample did not over-represent organizations from a particular stratum (i.e., region, size, or industry).

## RESULTS

Table 1 shows the descriptive statistics and correlations for the main variables of interest in this study. Tests of our hypotheses are reported in Table 2. Model 1 includes control variables and the main effects of the independent variables. *TQM* ( $\beta = 0.030$ ,  $p < 0.10$ ) and *cost leadership* ( $\beta = 0.023$ ,  $p < 0.05$ ) are positively related to *performance*, while *differentiation* is negative and non-significant ( $\beta = -0.010$ , n.s.).

Model 2 reports the interactions between *TQM* and each activity system strategic orientation. Testing Hypothesis 1, the interaction between *TQM* and *cost leadership* is positive and significant ( $\beta = 0.014$ ,  $p < 0.05$ ). Following Cohen *et al.* (2003), in Figure 1 we plot the relationship between *TQM* and *performance* at high and low values (+/-1 s.d.) of *cost leadership*. The graph shows support for Hypothesis 1: the slope of the relationship between *TQM* and *performance* is positive for organizations with high *cost leadership* and negative for organizations

Table 1. Descriptive statistics<sup>a</sup>

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1. Performance	0.15	0.30	1.00											
2. TQM	0.79	1.27	0.19	1.00										
3. Cost leadership	11.85	2.85	0.22	0.41	1.00									
4. Differentiation	7.24	2.64	-0.05	0.21	0.25	1.00								
5. Layoff rate	0.12	0.22	-0.07	-0.05	-0.03	0.01	1.00							
6. Prior performance	0.15	0.30	0.10	0.10	0.05	-0.06	-0.02	1.00						
7. Union density	0.07	0.22	-0.08	0.02	0.11	0.05	0.06	0.00	1.00					
8. Organization size (log)	2.66	1.33	-0.03	0.25	0.36	0.27	-0.06	-0.10	0.37	1.00				
9. Multiple-site operations	0.13	0.33	-0.03	0.05	0.15	0.15	-0.03	-0.07	0.38	0.44	1.00			
10. Organization age	13.15	16.86	-0.05	-0.08	0.05	0.04	0.07	0.01	0.25	0.24	0.24	1.00		
11. New technology implementation	0.22	0.41	0.21	0.08	0.11	-0.14	-0.09	0.10	0.01	-0.03	-0.06	-0.08	1.00	
12. Compete internationally	0.62	0.48	-0.12	0.02	0.09	0.34	0.02	-0.0	0.13	0.23	0.11	-0.16	1.00	
13. Compete nationally	0.70	0.46	-0.12	-0.03	0.04	0.23	-0.04	-0.01	0.06	0.38	0.17	0.12	-0.09	0.45

<sup>a</sup> N = 780; correlations with an absolute value greater than 0.07 are significant at the 0.05 level. Correlations for industry dummies available from the authors.

Table 2. Hierarchical OLS regression of performance<sup>a</sup>

	Model 1		Model 2		Model 3	
	$\beta$	s.e.	$\beta$	s.e.	$\beta$	s.e.
Organization size (log)	-0.016	0.02	-0.017	0.02	-0.015	0.02
Prior performance	0.033	0.03	0.028	0.02	0.024	0.02
Union density	-0.103**	0.05	-0.091*	0.05	-0.096*	0.05
Layoff rate	-0.076	0.06	-0.051	0.06	-0.046	0.06
Multiple-site operations	0.033	0.03	0.033	0.03	0.048	0.03
Organization age	0.001	0.00	0.000	0.00	0.001	0.00
New technology implementation	0.108*	0.06	0.081*	0.05	0.076*	0.05
Compete internationally	-0.063	0.05	-0.061	0.04	-0.071*	0.04
Compete nationally	-0.037	0.04	-0.010	0.04	0.004	0.04
TQM	0.030*	0.02	0.014	0.02	0.008	0.01
Cost leadership (CL)	0.023**	0.01	0.021**	0.01	0.023***	0.01
Differentiation (DIFF)	-0.010	0.01	-0.004	0.01	0.001	0.01
TQM × CL			0.014**	0.00	0.016**	0.01
TQM × DIFF			-0.015**	0.00	-0.005	0.01
CL × DIFF					-0.001	0.00
TQM × CL × DIFF					-0.010**	0.00
$R^2$	0.141**		0.183**		0.200**	
$\Delta R^2$			0.042**		0.017**	

<sup>a</sup> N = 780; All models included three manufacturing industry dummies with 'primary' as the reference category.

\* p &lt; 0.10; \*\* p &lt; 0.05; \*\*\* p &lt; 0.01; two-tailed tests.

with low *cost leadership*. For Hypothesis 2, the interaction between *TQM* and *differentiation* is negative and significantly associated with *performance* ( $\beta = -0.015$ ,  $p < 0.05$ ). We plot the relationship between *TQM* and *performance* at high and low values (+/-1 s.d.) for *differentiation* in Figure 2. The slope of the relationship between *TQM* and *performance* is negative for organizations with high *differentiation*, while the slope is positive for organizations with low *differentiation*, providing support for Hypothesis 2.

Model 3 presents the results of the test of Hypothesis 3. The coefficient for the three-way interaction term is negative and significant ( $\beta = -0.010$ ,  $p < 0.05$ ). Since the three-way interaction term is monotonically increasing as a function of higher values for either *cost leadership* or *differentiation*, or both, it is particularly important to consider this effect graphically (Dawson and Richter, 2006). Figure 3 displays the relationship between *TQM* and *performance* at high and low values (+/-1 s.d.) of *differentiation* and

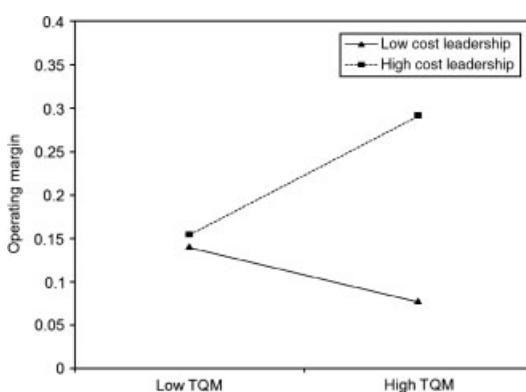


Figure 1. Moderating effect of cost leadership on the relationship between TQM and performance

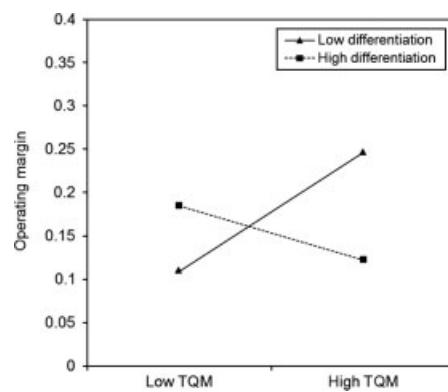


Figure 2. Moderating effect of differentiation on the relationship between TQM and performance

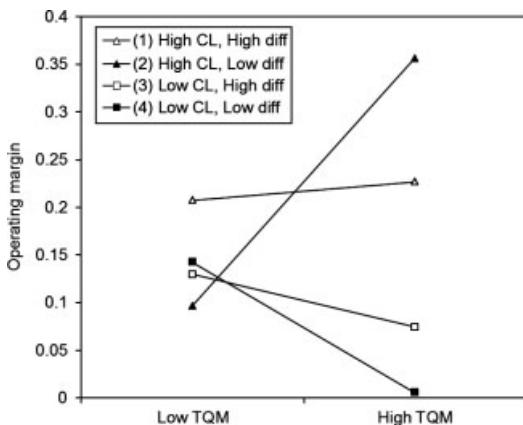


Figure 3. Three-way interaction of TQM, cost leadership, and differentiation orientation (CL=cost leadership orientation; diff=differentiation orientation)

*cost leadership*. When organizations have high values for *cost leadership*, the relationship between *TQM* and *performance* is positive if the organization *also* has low levels for *differentiation* (line 2). The simple slope of this association is positive and significant ( $p < 0.01$ ), confirming that fit between strategic orientation and *TQM* is positively related to *performance* when the activity system is oriented more toward ‘pure’ cost leadership. In contrast, in hybrid organizations where core elements from both strategic orientations are prominent (i.e., observed values for *differentiation* and *cost leadership* are both high) the relationship between *TQM* and *performance* is nonsignificant (line 1). A *t*-test ( $t = 2.48$ ,  $p < 0.05$ ) confirms that the slope of the line for the more ‘pure’ *cost leadership* orientation (line 2) is significantly greater than the slope of the line for the hybrid orientation (high cost leadership/high differentiation) (line 1). Finally, the slope of line 2 (i.e., the more ‘pure’ *cost leadership* orientation) is also statistically greater ( $t = 2.68$ ,  $p < 0.01$ ) than that observed for organizations with more ‘pure’ *differentiation* orientation (line 3). These results provide strong support for Hypothesis 3, which states that the greater the activity system’s orientation toward ‘pure’ cost leadership, the stronger the relationship between *TQM* and *performance*. Importantly, these effects are nontrivial. In this context, the marginal effect of a one-unit increase in *TQM* for organizations focused primarily on *cost leadership* provides a 33 percent increase in operating margin.

## DISCUSSION

Prior research has suggested that the efficacy of *TQM* is context dependent (Sila, 2007; Sousa and Voss, 2008; Jayaram *et al.*, 2010), and our results provide support for the role of an organization’s activity system strategic orientation in this regard. In this way, our findings support the arguments described in Porter and Siggelkow (2008): consistency across the firm’s activities drives performance. The concept of fit has a prominent place in both strategy (e.g., Chandler, 1962; Miles and Snow, 1994; Zajac, Kraatz, and Bresser, 2000) and organizational theory (e.g., Lawrence and Lorsch, 1967; Thompson, 1967). Here we focused on internal fit: the consistent alignment of elements inside the organization that develop and sustain shared meaning (Mathieu *et al.*, 2000), established routines (Nelson and Winter, 1982), and employee skills and training (Jaikumar, 1986). Our findings support the argument that adding *TQM* to an activity system oriented toward a *cost leadership* market position drives positive performance.

We observed that the benefits of *TQM* might be illusory for organizations other than those already focused strategically on cost efficiency. While this may not surprise scholars and practitioners who have observed the difficulty of implementing *TQM* (e.g., Beer, 2003; Zbaracki, 1999), our results suggest that *TQM* may not return performance dividends for an entire class of organizations; namely, those pursuing a *differentiator* market position. This also helps to explain the failed implementation of *TQM* in response to fads or competition: *TQM* does not, in and of itself, necessarily lead to performance gains. Rather, *TQM* can be a valuable elaborating element that is most effective when it reinforces the firm’s cost-oriented core elements. This finding may help explain the equivocal results in prior *TQM* research, and suggests that future *TQM* studies explicitly consider the organization’s activity system.

Our findings align with other recent scholarship to offer insights regarding the role of organizational contingencies when undertaking organizational change. In particular, Peteraf and Reed (2007) describe how alignment between internal operational choices and administrative practices yielded performance benefits (i.e., lower costs), regardless of external contextual conditions. Importantly, their ‘administrative practices’

construct specifically concerns those areas of the activity system over which managers have discretion. Mapping this finding onto our results, we observe that managers generally have discretion over TQM implementation; they likely have less immediate discretion over the organization's strategic orientation. Accordingly, understanding the organizational context and its complementarity with the organizational change being considered is an important component of managerial decision making.

Our results also suggest the need for additional research on differentiator firms. A possible extension of our findings is that firms with a differentiation orientation will likely benefit from organizational changes that seek to increase the value proposition of the organization's products or services (e.g., increases in R&D; implementation of a customer relationship management system). Moreover, we might well expect that cost leaders will not similarly experience the performance benefit of such value-oriented change initiatives. Unfortunately, the WES data we use in this analysis do not allow us to test this proposition, therefore future research is needed to explore these interesting questions. Moreover, we did not find a significant association between differentiation orientation and performance. While this result merits additional research, it could be that contextual or industry factors are driving this finding: our sampling frame included data from after September 11, 2001, during which time there may have been systemic influences on innovation and R&D, particularly in the manufacturing sector.

Finally, we note several limitations related to the nature of the TQM data available in the WES. First, the TQM measure surveyed by the WES is admittedly rough-grained. We do not have a measure of the specific TQM practices implemented within an organization, and this is unfortunate inasmuch as TQM is a diverse set of practices and programs (Sousa and Voss, 2002; Nair, 2006). Likewise, we are unable to measure the total number of years in which TQM is implemented: that is, our TQM measure is both left and right censored. However, and as we have noted, our cumulative measure likely captures the commitment, investment, and understanding of how TQM fits within the organization. A second and related limitation is that the WES does not ask specifically about the motivation to engage in TQM, and so we

could not measure why a particular organization undertook TQM. To be sure, there are many reasons organizations implement efficiency-oriented changes such as TQM including the decline of sales or productivity, a perception of environmental threat, the presence of industry fads, or as the catalyst for proactive change (Kennedy and Fiss, 2009). Moreover, TQM could be incremental to a cost leadership orientation, but a more revolutionary change (Tushman and Romanelli, 1985) for differentiators. Finally, it is possible the continued implementation of TQM each year may reflect difficulties in the implementation process, rather than a commitment to the change program. Future research is needed to address these limitations.

## CONCLUSION

Why is it difficult for organizations to generate positive performance benefits from TQM? This study suggests that one answer is that the strategic orientation of the firm's activity system provides an organizational context within which TQM achieves some level of internal fit. Our results, then, suggest that implementation of this popular change initiative can be more successful when it is complementary with core elements of the organization's activity system. This paper, therefore, offers practical guidance to managers and consultants: consideration of the organization's existing activities is vital when considering the implementation of TQM.

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