PERGAMON

A longitudinal study of TQM implementation: factors influencing success and failure

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Abstract

This is one of a very few longitudinal research studies of the link between TQM implementation and successful outcomes. The paper reports on perceived TQM success for a cohort of 109 firms over a 5-year period. Some 42 firms, predominantly small in size, had discontinued with TQM, while the remaining 67 firms reported varying degrees of success. The data suggests that the size of firm, the nature of the customer base and the holding of ISO9000 series certification has had no significant effect on TQM outcomes for this cohort. The research has also highlighted some necessary antecedents for TQM success. In particular, managers need to understand the nature and purpose of TQM, its relationship to ISO9000, and the potential benefits that can accrue from its implementation. We have shown that these factors are significantly associated with perceived TQM success. They are also significant for the discontinuing firms. Deriving success from TQM has also been shown to be significantly associated with (i) the time since adoption, (ii) the inclusion of quality objectives in the strategic planning process, and (iii) the need for senior managers to take charge of TQM and to ensure that the majority of employees are involved in its implementation. While these findings are supportive of such assertions in the literature, this paper provides further robust empirical evidence from a cross-section of UK companies in a longitudinal research design. This research has also contributed to the debate about the effects of firm size and ISO9000 certification. The paper concludes by proposing the next phase of analysis of these firms, based on five additional performance variables collected during both studies of the cohort.
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1. Introduction

Published research on TQM has, until recently, been confined to specialist quality management or operations management outlets. Gradually, TQM research has grown in stature and has become established in the top general management journals [1–7]. Concomitant with the acceptance of TQM among general management researchers has been the criticism that TQM research has not been providing the corrective function that it could, and should:

> Too much of the TQM literature consists of anecdotal case reports or before-and-after evaluation studies that may be of more use politically in promoting TQM (or, for skeptics, in debunking it) than they are in building knowledge about TQM processes and practices. [4, p. 339].

Similarly, Dean and Bowen [2] commented that while TQM has become a ubiquitous organisational phenomenon, it has

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been given comparatively little research attention, and in particular there has been little theory to explain the differences between successful and unsuccessful efforts. What are the determinants of successful TQM implementation, and why do some organisations try to implement it and subsequently stop? While these two questions have been a prime focus of TQM research over the past decade, they remain largely unanswered.

This paper is one of the first longitudinal research studies of TQM implementation, involving a cohort of 113 companies. The foundation for the study began in 1992, when the original cohort was investigated [8,9]. Five years later, the same group of companies was re-contacted to assess what progress had been made with TQM and to explore the achieved levels of success. The remainder of this article is in four sections. Firstly, we review some of the key studies on TQM implementation, and highlight some of the challenges of the extant research literature. In particular we emphasise that methodologically, most previous studies have taken a snapshot of TQM activity. Thus, in the second section we propose a longitudinal research method for evaluating the success of TQM for this cohort. In section three we present results from the second study of this cohort, conducted in 1997. Finally we discuss the implications of these results and outline some research questions for future analysis of these data.

2. Literature review

2.1. Development of TQM research

Dale et al. [10] asserted that TQM is still in an early stage of theory development. They stressed the need for scholarly development of TQM theory and the incorporation of existing management theories into its development. In so doing, they have echoed the concerns of others that too much TQM research is focused on descriptions of practice rather than on theory development that is of use to managers and scholars [11,12]. While some scholarly studies have integrated TQM with current management theories of innovation diffusion [6], organisational learning [12,13] or resource-based strategy [3], Dean and Bowen [2] observed a further need for TQM integration with the management literature on strategy implementation, information processing, customer satisfaction and process improvement.

Ghobadian and Gallear [14] underscored the dearth of empirical research dealing specifically with TQM implementation, and observed that knowledge about the implementation process remains highly fragmented. They argued for a renewed focus on the process of implementing TQM and the reasons for success and failure. Moreover, in studying 31 leading exponents of TQM, they concluded that there is commonality in successful implementation, and that this commonality lies at the deeper level of objectives and intentions, rather than at the activity level of method, tools and

techniques. It was in a similar vein that in 1992 we analysed this cohort of 113 companies, focussing particularly upon managers' attitudes to, and perceptions of TQM, and their understanding of its nature and purpose. We regarded these attitudes and perceptions as antecedents of implementation practices and concomitant outcomes, see Fig. 1.

Using Argyris' [15] theory of defensive routines, we highlighted contradictions between TQM implementation practices (theories in use) and managers espoused attitudes and perceptions (espoused theories). In 1992 we found little detectable dissatisfaction with TQM, although the majority of the cohort had only recently implemented TQM. However we speculated that, without improvement in their perceptions of TQM and better alignment between perceptions and implementation practices, there was likely to be an issue about the sustainability of TQM in this cohort [9]. It was against this background that the cohort was re-visited in 1997, to see whether or not TQM had continued, and if so, what levels of success had been experienced.

2.2. Measuring the impact of TQM

Measurement of TQM performance outcomes is widely recognised as difficult, because of a number of inter-related factors. Firstly there is debate about when to measure the effect of a TQM intervention on performance outcomes. If performance measures are taken too soon after TQM implementation, the results are inconclusive. If too long a time elapses between intervention and outcome, the measurement can be confounded by other exogenous and endogenous factors [4]. Secondly there are problems associated with publicly reported indices of performance such as market share, share price and profitability [16,17]. Market share is self-defined, depending on the scoping of the market, profitability can easily be distorted, and share price is only an estimate of future performance and is volatile. Thirdly, for SMEs and privately owned firms these indices are often difficult or impossible to obtain. There are no easy solutions to these difficulties. One approach is to obtain the principal measure of performance directly from the respondents, as a perceptual judgement [7]. While recognising the potential for self-reporting bias, there are many precedents in the literature for obtaining performance information on a primary or perceptual basis [3,18–21]. Indeed, as Meredith [22, p. 10] argued,

> the information compiled from the perceptions of key participants is often closer to reality than an artificial reconstruction of the objective reality based on a focused and limited collection of incomplete objective data gathered independently by researchers themselves.

2.3. The need for longitudinal studies

Powell's [3] analysis of 39 TQM adopters was one of the first to overcome the problem of what he described as