The impact of environmental characteristics on TQM principles and organizational performance

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Abstract

One recurrent theme within the literature on total quality management (TQM) is the study of its effect on organizational performance. Nonetheless, most research has focused on analyzing the relationships between the implementation of different elements and several types of performance. This paper incorporates the effect of organizational environment as a variable for explaining the impact of TQM on business results. The model is tested using structural equations, employing a survey of quality managers in 273 Spanish firms. The causal analysis results show that dynamism, munificence and complexity influence the degree of implementation of the main TQM principles. The most relevant effects emerge as a result of the environmental dynamism, and the least effects are due to munificence. Similarly, the dimensions of TQM have an impact on different types of performance. The model can be used by organizations to assess their level of TQM success depending on specific environmental characteristics.

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1. Introduction

One of the keys to the popularization of total quality management (TQM) is that it is deemed to be a historically unique approach to improve organizational effectiveness [1]. In fact, many studies have highlighted the benefits that may be obtained through its proper implementation [2–4]. Nonetheless, the introduction of TQM has produced uneven results and in numerous cases it has been a failure [5–10].

The relationship between performance and TQM has been analyzed according to the degree of implementation of its elements (leadership, quality-oriented culture, reward system, employee participation, etc.). So, for example, the studies by Chapman et al. [11], Easton and Jarrell [12], Kaynak [13] and Powell [14] evaluate performance using financial indicators, and other studies (e.g., [15–27]) also evaluate aspects such as customer satisfaction, employee satisfaction or the quality of the products and services offered.

However, till recently, few works have considered how the existence of factors external to the implementation of TQM might affect performance (e.g., [14,28–32]). Shin et al. [33] suggest that one of the factors for the TQM success is its fit with firms’ strategic priorities, the competitive environment and the organization’s goals. A firm that definitely intends to implement TQM as a fundamental strategy for its activities should not forget that it is part of an environment that has certain characteristics that might favor or be detrimental to achieve its targets. Assuming that proper implementation is essential for obtaining profits, the variability of the latter in firms that have introduced TQM might be justified by its interaction with the environment.

Since organizations are conceived as open systems, different disciplines have pointed out mechanisms for connecting the organizational environment and its performance. In fact, in the organizational literature the research papers dealing with the environmental effects on structure and strategy are...
now acknowledged to be classic (e.g., [34–38]). The environment–organization interface is a matter that is now so widely accepted that it leads us to suggest that the differences in the results achieved by firms that have implemented TQM will also be conditioned by the environment. Especially so when the studies published to date have not always been able to demonstrate that TQM may explain a large proportion of the variations in organizational performance.

Over the last few years, it has been seen that a firm’s survival depends to a great extent on the capacity to constantly satisfy the customers’ needs and to overcome competitive pressures. Hill and Wilkinson [39, p. 12] suggest that TQM “is contingent with different versions or manifestations in different sectors under different market conditions in organizations of different sizes and at different stages of quality development”.

Therefore, the overall understanding of the factors that determine the successful implementation of TQM is a really complex issue that can only be achieved by integrating several research topics that analyze human, managerial, technical and contextual aspects. The study of TQM effectiveness cannot be performed by only considering a single perspective since a firm’s success does not depend on just one single factor [40,41]. The contribution of this paper focuses on this approach.

Hence, with the aim of studying in depth the factors that mediate the effectiveness of TQM programs, this paper suggests the possible influence that the environmental characteristics or dimensions might have on its implementation and on its performance. Specifically, the main purpose of this research is to determine whether the relevant dimensions of the specific environment such as dynamism, munificence and complexity, are the forerunners of the main strategic TQM dimensions and its performance. This leads us to analyze whether such environmental characteristics will have a positive or negative influence on TQM.

2. Literature review

A significant number of articles in the literature on organizational environment have studied its dimensions focusing on different conceptions (e.g., [42–45]). These environmental characteristics have allowed authors to specify how the environment affects different structural and strategic aspects and performance. This is the case of the papers by Boyd [46], Dess and Beard [47], Keats and Hitt [36], Miller and Friesen [37], Papadakis et al. [48], or Sutcliffe and Huber [49].

Equally, this work proposes a model for explaining the results of TQM by considering the effects of several environmental attributes on the main TQM dimensions (Fig. 1). This model intends to provide empirical evidence for the restrictions that the environment exerts on TQM and on the effects of the latter on organizational effectiveness. In particular, the model considers the following elements: (a) the most significant dimensions of the environment, (b) the main TQM principles, and (3) organizational performance.

The exogenous variables of the model are three dimensions of the environment: dynamism, munificence and complexity. These attributes represent the main characteristics of the environment considering the resource dependence and organizational population ecology theories [47]. Furthermore, they have frequently appeared in the literature for analyzing the effects of the environment on organizations and their performance (see, for example [36,46,49–51]).

![Fig. 1. The conceptual model of environment, TQM and organizational performance.](image-url)
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