



# Achieving competitive advantage through implementing a replicable management standard: Installing and using ISO 9000

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## Abstract

This paper investigates the effects of implementing the international standard ISO 9000 on measures of business and operating performance. Based on the literature and a case study we identified two stages in implementing ISO 9000—(1) *Installation*, which has two dimensions: (a) external coordination and (b) integration; and (2) *Usage*, which also has two dimensions: (a) in daily practice and (b) as a catalyst for change. The hypotheses were that installation of ISO 9000 is positively related to use of ISO 9000, and use of ISO 9000 is positively related to operating performance. In addition, use of ISO 9000 is positively related to business performance since operating performance is positively related to business performance. We used hierarchical linear models (HLM) to test our hypotheses and validated the results by comparing the longitudinal performance of ISO 9000 certified companies with four matched samples of companies that were not ISO 9000 certified. Our analysis indicated that while the installation stage was necessary to successfully implement ISO 9000, organizations achieved a distinct operating advantage from this replicable standard when they used it in daily practice and as a catalyst for change. These findings were based on responses to a survey of 1150 quality managers in 924 organizations, which was supplemented for about one-third of the organizations with longitudinal information from the Compustat database on the organizations' business and operating performance. The validation indicated that implementing the ISO 9000 standard led to improved operating performance, but that this outcome did not necessarily or automatically yield better business performance.

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## 1. Introduction

The International Standards Organizations in Geneva established the ISO 9000 standard in 1987. Its origins, however, rest in earlier American (1960s—MIL-Q-9858A and MIL-I 45208A) and British

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standards (BS 5750). By the year 2000, more than 100,000 organizations worldwide were ISO 9000 certified and over 100 countries had adopted this standard (The International Standards Organization, 2000). Management standards, such as ISO 9000, are a subset of a broader category of voluntary management practices, often referred to as administrative innovations (Brunsson et al., 2000). The ISO 9000 standard requires that firms have in-house standardized and replicable routines and procedures for product design, manufacture, delivery, service and support, but whether implementation of such a standard is helpful to organizations is not known with certainty (Anderson et al., 1999; Greve, 1999). Organizational analysts have identified implementation failures as a main reason that organizations have not benefited from practices such as ISO 9000 (Nutt, 1986; Klien and Sorra, 1996). Abrahamson (1991, 1996, 1997) sees the process of implementation as akin to fads and fashions; managers implement such practices in the same ways that people make decisions about the length of a skirt or the width of a tie—as a consequence of being persuaded by glitzy rhetoric that exploits their vulnerabilities and psychological needs. According to Abrahamson (1991, 1996, 1997), implementation is a social construction that does not narrow real performance gaps. Nevertheless, Collis and Montgomery (1997) suggest that the implementation of practices such as ISO 9000 can raise organizational performance and result in real competitive advantage.

Quality standards, such as ISO 9000, have continually evolved and been refined over time and are supposed to offer a competitive factor in many industries (Cole, 1999). However, since knowledge of ISO 9000 is public (Matusik and Hill, 1998) and implementation of the practice aims to create greater homogeneity among organizations (Brunsson et al., 2000), it is debatable if ISO 9000 constitutes a competitive factor. As Barney (1986) maintains, competitive advantage arises from the differences among firms (heterogeneity), but if all companies implement ISO 9000 in the same way, can a particular company derive a special benefit?

We argue that competitive advantage can be gained from implementing a replicable management standard, such as ISO 9000, if implementation is understood not as a discrete and homogenous industry-wide phenomenon, but if variations in this

process are considered (Lewis and Seibold, 1993; Westphal et al., 1997; Meyer and Goes, 1988). For our study, we built a model for implementing ISO 9000, which takes into account company-specific variations. We used information from a survey of 1150 managers as well as data collected from the Compustat database about organizations that are ISO 9000 certified and four matching samples of non-ISO 9000 certified organizations whose characteristics otherwise match the ISO 9000 certified organizations. We then tested this model to determine the extent to which variations in implementation have an effect on operating and business performance.

## 2. ISO 9000s effect on organizational performance

The issue with which we deal in this paper is whether ISO 9000 can have a positive effect on an organization's competitive performance. We deal with this question because there is a considerable debate in the literature as to whether ISO 9000 has a positive impact. In 1996, Dun and Bradstreet conducted a comprehensive survey (ISO 9000 survey, 1996) of all ISO 9000 certified U.S. organizations and found that the average company benefited from implementation. Nonetheless, Terziovski et al. (1997) rejected the proposition that a significant relationship between ISO 9000 implementation and organizational performance exists (also see Curkovic and Handfield, 1996). Batchelor (1992) found that the benefits of implementation were procedural efficiency and error rate reduction and not market share, staff motivation, or cost reduction. Allan (1993) and Brown (1994) found that managers went back to “fire fighting” after they implemented ISO 9000 and their commitment to planning, prevention and continuous improvement was short-lived. Robin and Dennis (1994) found that ISO 9000 had a positive effect because of the introduction of statistical process control, though the standard itself did not explicitly require it, and Askey and Dala (1994) claimed that managers saw certification as end in itself, not as a means to an end, and that after certification they reverted to old practices.

Implementation of ISO 9000 should make an organization's operating performance go up, but consistent results that could verify this proposition

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