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Journal of Economic Behavior & Organization  
Vol. 60 (2006) 579–602

JOURNAL OF  
Economic Behavior  
& Organization

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# The effect of certification with the ISO 9000 Quality Management Standard: A signaling approach

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Received 1 December 2003; received in revised form 1 September 2004; accepted 26 September 2004

Available online 24 August 2005

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## Abstract

Theory suggests that certification with a management standard may reduce information asymmetries in supply chains and thereby generate a competitive advantage for certified firms. This article uses an 11-year panel of U.S. manufacturing facilities to test whether certification with the ISO 9000 Quality Management Standard generates a competitive advantage. Results suggest that certified facilities grow faster after certification and that operational improvements do not account for this growth. Results also indicate that the growth effect is greater when buyers have greater difficulty acquiring information about suppliers.

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*JEL classification:* Information & Product Quality L15; Asymmetric & Private Information D82

*Keywords:* Signaling; Certification; Management Standards; ISO 9000

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Supply chain transactions are becoming increasingly distant and international, making it more difficult for buyers to observe the qualifications of suppliers. One solution to the resulting asymmetric information problem may be provided by multinational management standards. In this article, we propose that certification with a management standard can act

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as a signal of superior but unobservable attributes and thus provide a competitive benefit. Using a large longitudinal panel of U.S. manufacturing facilities, we test our hypotheses by analyzing the effect of certification with the ISO 9000 Management Standard.

Over the last decade, a host of management standards has emerged. Examples include the SA 8000 Labor Management Standard, the OHSAS 18001 Occupational Health and Safety Management Standard, the ISO 14001 Environmental Management Standard, and the ISO 9000 Quality Management Standard. In most cases, certification requires an organization to demonstrate that it employs a specific set of management practices. Usually, these practices must be verified by a third party auditor.

The most prominent example of a certified management standard, ISO 9000, was created by the International Organization for Standardization. It specifies requirements for a quality management system in order to demonstrate that the facility can “provide products that consistently meet customer and applicable regulatory requirements” (ISO, 2002). Certification requires an audit by an accredited third party. These audits must be renewed every three years.

Despite the prevalence and importance of management standards such as ISO 9000, they remain relatively understudied. A few initial studies have proposed that management standards entail a recipe of beneficial practices and thereby improve the operational performance of certified organizations (Litsikas, 1997; Rao et al., 1997). While we test for this effect in this paper, we argue that these studies have failed to explain fully the nature of certified management standards. From a theoretical perspective, they do not explain why organizations go through the added trouble and expense of obtaining official certification. Since the requirements of the standards are public and consulting firms are available to aid the adoption of practices, organizations do not need to certify to gain an operational benefit.

From an empirical perspective, previous research has failed to establish a causal relationship between certification and improvement in operational performance (Dick, 2000). A few practitioner surveys suggest an association between certification and improvement in operational performance (e.g., Rao et al., 1997; Jeng, 1998), but longitudinal studies in scholarly journals have found either no such relationship or a negative one (King and Lenox, 2001; also see Dick, 2000; Heras et al., 2002, for a review).

In this paper, we argue that certification with a management standard may represent an attempt to communicate about desirable organizational attributes to parties that cannot observe them directly. This aspect of certified management standards is inherent in their design and may be critical to their function, yet it remains little explored (Anderson et al., 1999). We use the ISO 9000 Quality Management Standard to develop our arguments, and we propose that certification provides a competitive advantage whether or not the standard actually improves the organization’s operational performance. To elaborate the discriminatory power of certification further, we test whether the magnitude of this competitive advantage varies with conditions under which buyers may have greater difficulty acquiring information about suppliers. Using an 11-year panel of 19,713 U.S. manufacturing facilities and controlling for operational performance and inventory levels, we find that certification with ISO 9000 is associated with a facility growth effect. Results also indicate that this effect increases with the extent to which buyers have numerous suppliers among which they can choose. Furthermore, we find partial evidence that the effect of ISO 9000 is larger

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