



## The impact of ISO 9000 and EFQM on the use of flexible work practices<sup>☆</sup>

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### ABSTRACT

The purpose of this paper is to analyse the differences between the two most frequently used quality management approaches implemented by firms, ISO 9000 and EFQM, in terms of their impact on the adoption of innovative work organization practices. In order to accomplish this objective, we have selected a sample of 665 establishments with at least 20 employees, from the manufacturing, building and service sectors. Results show that, as expected, EFQM involves an advance over ISO 9000 regarding the use of innovative work practices.

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### 1. Introduction

During the last three decades, firms around the world have witnessed the emergence and diffusion of a series of non-technological innovations designed to improve management practices within organizations. One of these is quality management, which has unquestionably become of particular significance and prevalence in all activity sectors. Quality management involves the adoption of a philosophy that comprises a focus on customers and the continuous improvement of production processes, as well as on the implementation of a range of techniques and approaches, such as statistical process control (SPC), seven basic tools, quality function deployment (QFD), etc. The academic literature on quality management has provided considerable empirical evidence of the positive impact that the adoption of different quality management systems and models has had on various dimensions and measures of firm performance (Samson and Terziovski, 1999; Sun, 2000; Prajogo and Sohal, 2003; Tarí and Sabater, 2004).

Firms develop their ideas and practices of quality management within two main frameworks (Martínez Costa et al., 2008): on the one hand, the implementation of quality management systems, the best example of which may be the system based on ISO 9000 quality standards series; and on the other, the scheme provided by excellence models (or Total Quality Management Models)

(Sadikoglu and Zehir, 2010), the most prevalent of which in Europe is the EFQM model.

Another significant development in recent years is the expansion of flexible systems of work organization (Osterman, 1994; Gittleman et al., 1998; Handel and Levine, 2004). These systems comprise a series of practices whose principal aim is to transfer high decision-making power to workers and foster their involvement in the activities of the company by means of (both ascending and descending) information-exchange and communication between employer and employees. Together with this, workers must become more multi-skilled and capable of performing a greater number and wider variety of tasks; this also requires that employees receive more information about the general operations framework whereby the firm carries out its activities. As a consequence, decisions are taken by those that detect problems and, therefore, have a more refined knowledge of their potential causes. This enables the firm to implement a faster response and to avail of greater flexibility when dealing with unexpected circumstances. Moreover, as long as these practices are conceived as employee-centred, they may be expected to lead to increased motivation and job satisfaction and greater commitment to the employer.

Practices commonly included in these systems are self-directed teams, problem-solving groups (such as quality circles) and information meetings among employers and employees. Their positive effects on productivity and firm performance are reflected in the conclusions to many studies based on samples of firms from different sectors (Black and Lynch, 2001, 2004; Cappelli and Neumark, 2001; Richard and Johnson, 2001; Way, 2002).

In spite of the significance acquired by quality management and flexible work practices, the relationship between the two has rarely been addressed in the research literature. Nevertheless, the scarce

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empirical evidence available suggests that these two innovations tend to be implemented jointly and that they could be part of a common approach to business management (Wood, 1999; Bayo-Moriones and Merino, 2001; De Menezes and Wood, 2006).

The limitations of existing research underscore the need for more focused analysis of the influence that quality management may have on the adoption of flexible work systems. This is of particular relevance in relation to ISO 9000 and EFQM, whose relationship with innovative work practices has received little or no attention in empirical research terms.

The purpose of this paper is to explore the impact that these two approaches to quality management have on the incidence of flexible work systems. Furthermore, the intention is to evaluate the magnitude of the effects of these two systems on new work practices. To this end, the information gathered through a survey carried out in a final valid sample of 665 Spanish business establishments with at least 20 employees from the manufacturing, building and service sectors is analysed.

This paper contributes to the existing research literature in several ways. First and foremost, it provides additional evidence regarding the influence of quality management on human resources management and, more particularly, on the incidence of flexible work practices. Secondly, so far as we know, this is the first paper to consider the influence of the two approaches used by nearly all firms that decide to implement quality management in their activities, which enables us to explore whether or not the effects of both approaches on work organization are the same. Finally, the sample of companies analysed is not limited to a particular sector, which increases the significance of the conclusions reached, and may enable the application of such innovative practices to a larger number and wider variety of firms.

The paper is structured as follows. The following section studies the implications of quality management for work organization from a theoretical perspective. Several hypotheses regarding the impact of ISO 9000 and EFQM on the adoption of flexible work practices are then formulated. Section 3 describes the main characteristics of the database used in the empirical analysis; the variables used in the estimations are defined and the methodology used to test such hypotheses explained. Section 4 sets out and discusses the results obtained in the estimations of the empirical models. Finally, the main conclusions are presented.

## 2. Quality management and work organization practices

Since the very beginning of the quality movement, the importance given to different aspects of human resources management as key elements within the models and paradigms of quality management has been quite remarkable. Thus, the pioneers in this field already included some of these aspects in their work. For instance, when enunciating his famous “fourteen points for the transformation of the American industry”, Deming (1982) explicitly mentioned some ideas such as the implementation of job training (point 6), the implementation of a vigorous program of education and self-improvement (point 13) or the involvement of company staff in order to accomplish transformation (point 14). Crosby (1979) also made reference to the need for teams of workers in improving quality, while Juran et al., 1990 emphasised training supply, team creation and achievement recognition in his methodology for quality improvement.

Later academic literature on the topic has been marked by a concern to define the concept of quality management, which has led to the inclusion of points directly related to human resource management in all the proposals made in this area. Dean and Bowen (1994) consider teamwork to be one of the three basic principles of quality management, along with the continuous

improvement of production processes and customer orientation. Despite acknowledging significant differences in the definition of the quality management concept, Dale et al. (1994) discern several common key elements such as education and training, teamwork and employee involvement. Other theoretical works, such as those by Hackman and Wageman (1995), Waldman (1994), Wruck and Jensen (1994) and Wilkinson et al. (1998), as well as other empirical works, such as those by Flynn et al. (1994), Ahire et al. (1996), Black and Porter (1996), Merino (2003) and Quazi and Jacobs (2004), pursue similar lines of argument.

The ideas, principles and practices of quality management have been adopted by firms in the Western world in two principal ways. On one hand, such implementation is effected through the adoption of management systems mainly that is based on the ISO 9000 series (Lo et al., 2009). The ISO 9000 series is a set of standards that addresses the quality of a company's processes. The philosophy underlying these standards for process documentation is that companies with well-established operations and processes will be in the best position to influence the quality of their products and services (Withers et al., 1997).

The International Standard specifies requirements for a quality management system where an organization needs to demonstrate its ability to ensure that its product consistently meets customer applicable regulatory requirements and to address customer satisfaction through the effective application of the system, including processes for continual improvement and the prevention of non-conformity. Significant emphasis is placed on the use of measurement and analysis of results. The framework for ISO 9000 appears in Fig. 1.

Information on the diffusion of ISO 9000 certification throughout the world is widely available (Marimón et al., 2006). The “ISO Survey of Certifications 2007” shows that the number of firms certified according to ISO 9000:2000 standards increased from 497,919 in December 2003 to 951,486 in December 2007 around the world. East Asia and the European Union were the geographical areas with the highest degree of implementation (ISO, 2008).

On the other hand, some firms have opted to develop a management model taking the EFQM model as the frame of reference – that is, the excellence model designed by the European Foundation for quality management. The EFQM is a non-prescriptive framework (see Fig. 2) comprising nine criteria that address all the activities and interested parties/stakeholders in an organization, enabling the assessment of progress towards excellence.

Since, unlike ISO 9000, there are no external certifications to quantify its level of implementation, the data regarding the implementation of the EFQM model is less precise. Some data on the firms that take part in annual quality awards based on the model and granted by different organizations are available. However, this amounts to a very small proportion of the total number of firms that might be working according to this model. Although the idea is that its implementation is clearly inferior to ISO 9000, its influence in the area the quality management is undeniable, in that it is a model fostered by the main institutions devoted to quality support and promotion.

Based on a booklet from the British Quality Foundation, Russell (2000) analysed the linkage and contribution of ISO 9000 (ISO 9000:2000, in particular) to excellence. Such links are presented in Table 1. The most significant overlap between ISO 9000 and EFQM may be discerned in “processes”. Policy Strategy and Customer Results also show considerable congruence. On the other hand, however, Society Results are not reflected in ISO 9000.

In principle, these two models are not exclusive; in fact, it has been argued that excellence models constitute the final stage in the journey towards quality and, to a certain extent, their adoption may be regarded as the next step to be taken by a firm that has already managed to implement a quality management system (Sun, 2000; Martínez Lorente and Martínez Costa, 2004). Although this may be the natural path towards excellence, in practice, there are

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