

Are TQM principles supporting innovation in the Portuguese footwear industry?

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Abstract

The relationship between total quality management (TQM) and innovation is complex. Literature suggests that conflicting arguments exist and that the impact of TQM on innovation depends both on the specific quality management elements under consideration and on the type of innovation. In this research, our goal is to analyse at what extent the introduction of TQM is indeed supporting innovation in the Portuguese footwear industry. Since this is a mature industry, whose traditional competitive base is disappearing and where familiar to medium units dominate, our emphasis is on the study of the organisational requirements to adopt constant changes in process technology. This study is based on empirical data collected from a set of firms by means of a survey instrument, especially developed with this purpose, after an extended contact with the industry where case studies and interviews were conducted with carefully selected organisations and sector experts. Findings give support to the view that in fact TQM principles have a positive association with the adoption of technological innovation. Yet, both the prevalence of features of the mechanistic model and the lack of maturity of most initiatives in the Portuguese footwear firms restrains the role of TQM in supporting innovation.

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1. Introduction

There is a current and open debate in the literature concerning the contribution of total quality management (TQM) to innovation. Several studies have been analysing at what extent organisations that implement TQM principles and approaches tend to be more innovative (Prajogo and Sohal, 2001, 2006a, b; Singh and Smith, 2004; Molina et al., 2007; Sá and Abrunhosa, 2007). As a complex management philosophy, TQM embraces a set of principles, which tend to have a different impact depending on the type of innovation considered. All in all, it has been suggested that some TQM elements, i.e. the ones which correspond to its “soft” components, are potential enablers of incremental innovation (Prajogo and Sohal, 2004).

When looking at the relationship between TQM and innovation, most studies (Prajogo and Sohal, 2004,

2006a, b; Singh and Smith, 2004) aggregate firms that belong to different industries. In doing so, they might well be ignoring that both TQM and innovation are “path dependent”, i.e. they are cumulative processes, which reflect the specificities of the contexts in which they occur. Moreover, innovation clearly depends on numerous factors and the contribution of TQM is better acknowledged when a single industry is considered.

To overcome some of these limitations, we decided to focus our research on a single industry, thus ensuring that all the firms analysed face a similar environment.

An additional drawback found in the literature concerns the way TQM and innovation are conceptualised and operationalised (Cameron and Barnett, 2000; Flynn and Saladin, 2001; Saraph et al., 1989). Often, the elements of TQM taken into consideration are not clearly identifiable. This is a major problem, since, as Prajogo and Sohal (2001, 2004) argue, different TQM principles can have dissimilar impacts on innovation. If that holds for TQM, the same applies for innovation. In fact, innovation is a multidimensional phenomenon (incremental vs. radical,

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technological vs. administrative, product vs. process), but many studies do not clarify which dimensions they consider (e.g. Singh and Smith, 2004). In our study, we have made an effort to clearly define and delimitate these concepts.

With the aim of contributing to the discussion over the link between some TQM principles and certain types of innovation, our study looks in particular at the effects that some “soft” TQM practices have on process technological innovation in the Portuguese footwear industry.

Several reasons explain why we focused our study in the Portuguese footwear industry. Firstly, this sector represents more than 5% of the value of the Portuguese exports of goods (APICCAPS, 2003) and, worldwide, the Portuguese footwear sector has a share of 3.4% of the exports value (United Nations, 2003). In this context, Portugal is a major player, being in the 4th position as a leather exporter (in which the Portuguese sector is specialised). Secondly, the sources of competitive advantage for the Portuguese footwear industry have changed over the last decade, making it a typical example of a mature industry where low costs are no more a competitive advantage and innovation became a top priority. In fact, if, in the 1970s and 1980s, the industry grew based on the low labour costs and on economies of scale based on large volume, in the 1990s this was not possible anymore. Throughout the 1990s, many global buyers of footwear moved their operations and orders from Portugal to Asia and Eastern Europe. While not discarding, by any means, the importance of cost, it is fairly obvious that Portuguese companies can only remain in the market and prosper by pursuing a differentiation strategy, supported by innovation. Pressures to innovate came also from the demand-side. Indeed, in developed countries, shoes have increasingly become a life-style purchase, with an increase in orders for urgent and small-sized batches of fashionable products (with higher variety in models and colours) and a decrease of orders for large batches of standardised shoes with long lead times.

Taken together, these changes forced Portuguese companies to adopt technological innovations at the shopfloor level, which are essential to shift from the production of large batches to small batches and to constantly develop and produce fashionable shoes. Additionally, being a mature industry, technological innovations are essentially incremental rather than radical (Freel, 2003). In this regard, and considering that the basis for competitiveness is more and more associated with intangible factors—such as time-to-market, customisation and the provision of additional services—, organisational innovation is becoming crucial and demands, among other aspects, the introduction of a management philosophy that puts the customer, the workers and continuous improvement at the core of everything that an organisation does.

Our findings suggest that the “soft” elements of TQM we have considered are in general positively associated with technological process innovation adoption. Communication and the implementation of supportive people management practices were in this regard particularly relevant.

Benefiting from the general small dimension of the firms and from the fact that many are family owned and run, communication is high and easy, both vertical and horizontal. That seems to be contributing to information dissemination, commonly regarded as key to innovation adoption. Additionally, the suggested supportive people management practices, namely continuous education and training and the use of appropriate performance appraisal schemes, is also significantly associated with the adoption of innovation, corroborating the idea that more qualified and motivated shopfloor employees are important innovation drivers.

On the contrary, certain TQM principles, such as autonomy and consultation, do not reveal the expected association with innovation. Once again, industry characteristics can explain this outcome. In fact, in these firms decisions tend to be highly centralised, operators have low level of qualifications and mainly follow instructions, thus having little discretion and control over job-related decisions.

The conclusions of this study carried out in the Portuguese footwear industry can be useful to other countries in which this sector is traditionally important (e.g. Spain and Italy), as well as to other mature industries (e.g. textile and garment) in developed countries that face the same kind of competitive pressures. Therefore, our study can be regarded as a benchmark.

Furthermore, while most research on organisational theory, and particularly on the field of management of innovation, focuses on either new ventures in high-technology sectors or on big companies, our study analyses small- and medium-sized firms in mature markets, which are considerably understudied in the literature considering their prevalence and economic importance.

The remainder of this paper is structured as follows: Section 2 reviews the general issues within the relationship between TQM and innovation in order to help us to reach the definitions of the main concepts used in this research and to put forward the hypotheses that guide the study. Next, in Section 3, the research goals and methodology are justified, including the design of the research instrument, the data collection procedures and the process of construct validation. Section 4 presents and discusses the main results. Finally, in Section 5, we analyse the main contribution of our research to the current debate in the field and give some indications of possible future developments.

2. Theoretical background

2.1. Total quality management: definition and key principles

Since the 1930s, quality management has raised considerable interest among researchers and practitioners.

From a taxonomy standpoint, TQM emerged in the 1980s but its roots go back to the scientific management principles of the 1920s (McAdam, 2000). Since then,

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