A Review of the Literature to Understand Diversity in ISO 9001 Adoption and the Achievement of Benefits

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Abstract

This article presents a review of the literature on ISO 9001 to explain diversity in implementation and benefits achieved. Our search found 721 articles on the adoption of meta-standards such as ISO 9001, of these we found twelve studies that provide insights into how different rationales and styles of adoption relate to benefits achieved. Despite the great majority of studies assuming homogeneous adoption of ISO9001, the review finds there is early evidence to support a trend towards more and more international academic works emphasizing heterogeneity in the adoption of the ISO 9001 standard to explain how benefits arise. However, the approaches are fragmented so future research is needed to integrate these research models to achieve a better understanding of the direct and indirect effects of the different variables.

Keywords: ISO 9000, ISO 9001, management system standards, meta-standards, heterogeneous adoption, decoupling, benefits.
Introduction

In the last few years we have witnessed acceleration in the dissemination of management system standards (hereafter we use the term MSSs), also referred to as meta-standards (Uzumeri, 1997). Today, there are international MSSs that relate to the standardization of a very wide range of aspects of business activity, such as quality management (e.g. ISO 9000), environmental management (e.g. ISO 14000), the prevention of occupational hazards and the provision of health and safety regulations in the workplace (e.g. OHSAS 18000), and corporate social responsibility (e.g. SA 8000). All of these standards tend to use a very similar methodology with regard to their creation, structure, implementation process and monitoring by a third party, a trend that was established by the successful ISO 9000 and ISO 14001 standards.

In specialist literature on the subject, MSS are known as meta-standards, following the proposal put forward by Uzumeri (1997), who refers to them as “lists of design rules to guide the creation of entire classes of management systems. Since systems theorists use the term system for lists of this type, it follows that this type of management standard should be referred to as a Meta-standard” (Uzumeri, 1997; p. 22). Corbett and Yeung (2008) use the term meta-standard “loosely to refer to standards that apply to broad processes (rather than individual products) and to entire families of such process standards” (Corbett and Yeung, 2008; p. 1).

Such a broad definition of standardization in the field of management could encompass, for example, international norms and guidelines dealing with accountancy and audits (the International Standards on auditing, for instance) or such general management models as that of the EFQM (European Foundation for Quality Management). These meta-standards share common characteristics in their formal structure, specific defined scope, explained terminology, integrated content and commonly the opportunity for third-party certification. What meta-standards do not specify is the technical compliance requirements and specifications for products or processes.

In the academic literature that theorises to explain the processes of adoption and dissemination of ISO 9000 Institutional Theory is increasingly used to explain the reasons for adoption (e.g. Boiral, 2003; Boiral, 2007; Walgenbach, 2007; Yin and Schmeidler, 2009). This theory explains how pressure originating from the state or from powerful companies constitutes the most direct mechanism for institutional dissemination of management practices. However, despite the homogeneity pressure stemming from political influence and the need to achieve legitimacy by copying peer organizations, when

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1 The term “ISO 9000 standard(s)” is the commonly used to refer to this metastandard (Uzumeri, 1997), although from its 2000 year version onwards, the only standard of the family which includes a model for implementing a certifiable Quality Management System is the ISO 9001 standard. In fact, in the 1987 and 1994 versions, in addition to the ISO 9001 standard, the ISO 9002 and ISO 9003 standards also included certifiable management system models, which is why the plural form used previously continues to be employed. Loosely speaking, reference is still made to “ISO 9000” or “certified in accordance with ISO 9000”, whereas, properly speaking, the correct expression should be “ISO 9001 standard” or “certified in accordance with ISO 9001”. In the case of ISO 14001, since it was launched in 1996, it has been the only one certifiable standard for Environmental Management Systems.
organizations adopt these types of standard many are proactive and adopt them in a variety of different ways to match with their existing internal standards, resources and needs.

Therefore, to analyse the adoption of MSSs in depth, heterogeneous organizational behaviour needs to be evaluated as recently stressed by Heras-Saizarbitoria and Boiral (2013). However, we are not aware of any specific review of the literature of MSSs that has taken this perspective. When we refer to the concept of heterogeneous adoption of MSSs we consider a broad perspective that ranges from adoption for ceremonial/symbolic reasons to the study of the internalization of MSSs. In other words, the review will refer to research studies that with or without a developed theoretical framework, aims at underlining the differences in the adoption processes of MSSs. Therefore, the aim of the article is to carry out a literature review to allow us to identify and then analyse empirical academic works that throw light on heterogeneity in the adoption of meta-standards.

Methodology

In the academic literature there are many studies that have reviewed commonalities in the process of adoption of ISO 9001 (for recent reviews, see Sampaio et al. 2009; Psomas and Fotopoulos, 2009; and Kim et al. 2011). Surprisingly we found there is no academic literature reviews looking at MSSs to discover differences in the way firms adopt meta-standards or the reasons why there is diversity.

The review that we aim to do is a difficult one due to two factors: firstly, because the academic contributions on MSSs have been produced from a large variety of disparate but related disciplines such as operations management, international economics and organizational sociology. Therefore, for our review we adopt an interdisciplinary perspective, in other words, our review can be categorised as an integrative review, studies “that seek to merge findings from related areas” (Macpherson and Jones, 2010; p. 109). Secondly, since our review is a very specific and qualitatively focused one we expect this to be a very difficult task, as the choice of specific key words is difficult when trying to detect heterogeneous adoption of meta-standards.

Therefore, searches in databases have to be less specific so that we capture a broad spectrum of papers that will allow each to be analyzed to establish whether it meets our scope or not. We acknowledge that such an open approach has potential limitation. Firstly, the concept of diversity in adoption runs against the orthodoxy of homogeneity implied by systems that meet a standard. Therefore, the concept of diversity is underexplored in the literature so lacks the maturity of prior definitions of diversity that can shape the review. We therefore accept that our mapping of the literature is influenced by our interpretation of what constitutes diversity and that other ways of mapping diversity are possible. Secondly, our protocol for assessment of results across a range of articles that use different constructs and research methods is our judgement based on our extensive prior knowledge of management standards and their adoption. Other scholars may well interpret the selection of articles we review differently using alternative theoretical perspectives.
Our search used the following databases: ABI Inform, Emerald, Science Direct and Google Scholar. The selection protocol used the expressions ‘ISO 9000’, ‘ISO 9001’, ‘meta-standards’, ‘meta standard(s)’. Ignored in our search were works published in the popular press or the articles in journals that do not have an external review process.

The search was carried out in February-March 2012, and this resulted in a pool of 722 articles on the adoption of meta-standards. These were individually read and assessed for relevance to the heterogeneous adoption of meta standards. This screening resulted in only twelve articles that could throw any light on the study of diversity in the adoption of the ISO 9001 standard. In the following section we analyse each of these articles in depth.

Results: the literature review

Listed in Table 1 is a summary of the empirical works published in the international academic literature on the heterogeneous adoption of ISO 9001. We now focus on each of these before synthesizing the findings.

In their two in-depth case studies in the French computer industry, Vasconcelos and Vasconcelos (2003) found evidence indicating there are two ways to adopt ISO 9000 standards: an in-depth process (concerned with organizational effectiveness and external legitimacy) and an instrumental one (concerned only with external legitimacy). These authors found that resistance to change was a common phenomenon in ISO 9000 implementation programs due to implementation’s impact on informal structures and the balance of organizational power (Vasconcelos and Vasconcelos, 2003).

In a more complex study based on 47 semi-structured individual interviews that were conducted in Québec outside of the workplace with managers, quality management specialists and employees, Boiral (2003) found highly contrasting attitudes to ISO 9000, that were frequently critical and often offered only superficial support for the standard. Findings from a qualitative analysis of the data identified three types of respondents (Boiral, 2003): “ceremonial integrators”, “quality enthusiasts” and “dissidents”.

This typology by Boiral (2003) casts doubt on the mechanistic, consensual and monolithic view of the standard, as this study underlines the relatively modest support for ISO 9000 among the employees of ISO 9000 certified organizations. This enlightening research showed the coexistence of a range of different approaches to implementing and interpreting the ISO 9000 standards.

The research carried out by Naveh and Marcus (2004 and 2005) and Briscoe et al. (2005) on the adoption of ISO 9001 pioneered the perspective of internalization of ISO 9001 by measuring the degree of use of ISO 9001 in daily company activity. Naveh and Marcus (2004) research showed that the extent to which ISO 9000 is associated with performance improvements depends on the level of its integration with existing internal processes, combined with the degree to which an organisation goes beyond the minimal requirements of the standard. In their other work Naveh and Marcus (2005) using the literature and a case study, proposed two stages in implementing ISO 9000: the first,
Installation, has two dimensions, (a) external coordination and (b) integration. The second, Usage, has two dimensions, (a) in daily practice and (b) as a catalyst for change.

These stages and dimensions were then validated in a survey of 924 companies in USA and Canada that found that the Installation stage was necessary to successfully implement ISO 9000 and that organizations achieved a distinct operating advantage when they used it in daily practice and as a catalyst for change. The findings 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. Naveh and Marcus (2005) propose three items as a way of measuring the internalization of ISO 9001: “Has it [ISO 9001] become part of your regular routine?”; “Are the documents created for the purpose of ISO 9000 registration used in daily practice?”; “Are preparations for external audits made at the last minute?”

Similarly, Briscoe et al. (2005) detected that a proactive quality culture reduces reticence to ISO 9001 implementation. Also organisations that have a culture that values quality are much more effective at internalising ISO 9001 practices. Briscoe et al. (2005) suggest measuring the greater or lesser extent of use of ISO 9001 in daily activity in accordance with the following three proposals: “ISO 9000 documents used in daily practice”; “ISO 9000 documents are updated regularly” and “Top management uses ISO data to solve business problems”.

Along similar lines, Christmann and Taylor (2006) studied the substantive and symbolic adoption of ISO 9001 in 170 Chinese companies. Substantive adoption is associated with certified companies that have embedded the practices prescribed by the standard into their daily routines. Conversely, such practices do not feature in daily activity in the case of symbolic adoption. These authors found that the companies select their level of compliance (symbolic or substantive implementation) depending on customer preferences, customer monitoring, expected sanctions by customers and the firm’s capabilities.

Based on prior qualitative work (Boiral, 2003), Boiral and Roy (2007) analyzed the influence of the motivational factors behind adopting ISO 9001 from an institutional theory perspective in terms of decoupling the standard’s formal elements and real daily activity. Based on their empirical study of 872 Canadian firms they derived a classification for integration of ISO 9001 on four levels: quality enthusiasts, ritual integrators, ISO integrators, and dissidents. However, the use of the term integration may be misleading as the classification is based on a factor analysis of a firm’s motivation for pursuing certification, rather than on the way in which integration is carried out. In more common usage in research is the term internalized to describe this process.

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2 The term “internalization” would appear to be more suitable than that of “integration” as used by Boiral and Roy (2007), given that the latter is already commonly used in the field of ISO standards to refer to integration of management systems (e.g. Karapetrovic, 2002).
<table>
<thead>
<tr>
<th>Study</th>
<th>Firm numb.</th>
<th>Method</th>
<th>Country</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiral (2003)</td>
<td>47*</td>
<td>Qualitative</td>
<td>Canada</td>
<td>There were three types of respondents among the employees of the companies that adopted ISO 9001: ceremonial integrators, quality enthusiasts and dissidents. The proposed typology cast doubt on the mechanistic, consensual and monolithic view of the standard.</td>
</tr>
<tr>
<td>Vasconcelos &amp; Vasconcelos (2003)</td>
<td>2</td>
<td>Qualitative</td>
<td>France</td>
<td>There were two ways to adopt ISO 9000 standards: an in-depth procedure (concerned with organizational effectiveness and with external legitimacy) and an instrumental one (only concerned with external legitimacy).</td>
</tr>
<tr>
<td>Naveh &amp; Marcus (2004)</td>
<td>1</td>
<td>Qualitative</td>
<td>USA</td>
<td>The extent to which ISO 9000 is associated with performance improvements depends more on the level of its assimilation with the existing internal processes combined with the degree to which an organisation goes beyond the minimal requirement of the standard.</td>
</tr>
<tr>
<td>Naveh &amp; Marcus (2005)</td>
<td>924</td>
<td>Survey</td>
<td>USA and Canada</td>
<td>How an organisation adopts the standard introduces variations that can distinguish the organisation from its competitors in operating performance and in this way gives the individual company an advantage. When ISO 9001 is used in daily practice and as a catalyst for change, organisations could achieve a distinct operating advantage from implementation once the standard is integrated and used.</td>
</tr>
<tr>
<td>Briscoe et al. (2005)</td>
<td>275</td>
<td>Survey</td>
<td>USA and Canada</td>
<td>A proactive quality culture reduces the reticence to ISO 9001 implementation and when organisation built a culture that values quality they are much more effective at internalising ISO 9001 practices. Improved performance depends on internalising core ISO practices that must become routine in the organisation.</td>
</tr>
<tr>
<td>Boiral &amp; Roy (2007)</td>
<td>872</td>
<td>Survey</td>
<td>Canada</td>
<td>Motivations for adopting the standard are associated to internalization of the standard. When the adoption of the standard is motivated by internal needs, its performance is superior to when it is motivated mainly by external pressures. The outcomes and difficulties related to ISO 9001 certification can vary significantly from one organisation to another depending on the way the standard is internalized.</td>
</tr>
<tr>
<td>Walgenbach (2007)</td>
<td>37</td>
<td>Qualitative</td>
<td>Germany</td>
<td>The adoption of ISO 9000 is a complex and heterogeneous process. The adoption of ISO 9000 ranges from a façade to attain legitimacy to an instrument for monitoring work-behaviour.</td>
</tr>
<tr>
<td>Jang &amp; Lin (2008)</td>
<td>441</td>
<td>Survey</td>
<td>Taiwan</td>
<td>Internal motivation for seeking certification is important to ISO 9000 implementation depth, and internal motivation mediates the relationship between external motivation and ISO 9000 implementation depth. Then, if the standard is internally driven, it is reasonable to expect to improve performance. The depth of implementation of the standard is positively correlated with operational performance.</td>
</tr>
<tr>
<td>Nair &amp; Prajogo (2009)</td>
<td>281</td>
<td>Survey</td>
<td>Australia</td>
<td>The internalisation of ISO 9001 practices is affected by internal and external reasons. The internalisation of ISO 9001 standards form an important intermediate link between motives and performance. Companies with a high level of adoption in the principles of ISO 9001 outperformed those with a relatively lower level of adoption in both overall performance and behavioural response.</td>
</tr>
<tr>
<td>Lee et al. (2009)</td>
<td>45</td>
<td>Survey</td>
<td>China</td>
<td>The organizations that adopted ISO 9001, adopted this meta-standard heterogeneously. A set of specific factors and subfactors aimed at operationalizing the ISO 9001 internalization construct were proposed. Organizations tend to adopt ISO 9001 certification as a sort of “organizational degree” based on passing a predictable exam with all the pitfalls that entails, such as rote preparation, procrastination, short-term focus and cheating.</td>
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<tr>
<td>Heras-Saizarbitoria (2011)</td>
<td>8</td>
<td>Qualitative</td>
<td>Spain</td>
<td>The organizations that adopted ISO 9001, adopted this meta-standard heterogeneously. A set of specific factors and subfactors aimed at operationalizing the ISO 9001 internalization construct were proposed. Organizations tend to adopt ISO 9001 certification as a sort of “organizational degree” based on passing a predictable exam with all the pitfalls that entails, such as rote preparation, procrastination, short-term focus and cheating.</td>
</tr>
<tr>
<td>Boiral (2012)</td>
<td>60*</td>
<td>Qualitative</td>
<td>Canada</td>
<td>The organizations that adopted ISO 9001, adopted this meta-standard heterogeneously. A set of specific factors and subfactors aimed at operationalizing the ISO 9001 internalization construct were proposed. Organizations tend to adopt ISO 9001 certification as a sort of “organizational degree” based on passing a predictable exam with all the pitfalls that entails, such as rote preparation, procrastination, short-term focus and cheating.</td>
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</table>
Source: Summary compiled by the authors. *Based on individual opinions and not on organizational ones.
Also using the institutional theory perspective, Walgenbach (2007) analyzed, using qualitative research methods, the adoption of ISO 9000 in 37 organizations (from field-work carried out in 1996 in Germany) to find the extent of decoupling of ISO 9001 certified quality systems from work-activities. In his findings Walgenbach provides strong evidence for heterogeneous adoption when he stresses “Quality systems can acquire a wide range of forms and functions. They range from a façade to attain legitimacy to an instrument for monitoring work-behaviour” (2007, p40).

Jang and Lin (2008) referred to the concept of “depth of implementation” of ISO 9001. These authors propose a research model that includes the motivational factors behind implementing ISO 9001, the depth of implementation and its influence on market and operations’ performance. Their concept of depth of implementation is measured by eight items, unrelated to prior research, instead they relate to the requirements set out by the ISO 9001 standard. These are: Identification of quality aspects, defining standard procedures, documentation, training, top management support, employees’ involvement, periodic auditing and corrective action. Their survey of 441 firms in Taiwan using this model found that internal motivation for seeking certification mediates the relationship between external motivation and ISO 9000 implementation depth and this in turn is positively correlated with operational performance (Jang and Lin, 2008).

Examining performance outcomes and contextual factors which are associated with different ISO 9001 implementation patterns, Lee et al. (2009) explored the patterns with which ISO 9001 was implemented in 45 service organisations in the Macao region, in China. With the ISO 9001 quality management principles as variables, the authors developed a taxonomy that established two markedly different ISO 9001 implementation patterns: a set of organisations that implemented the principles of ISO 9001 just to the extent that certification can be obtained, and another set of organisations that were highly committed to implementing the principles to levels beyond the standard requirements. These committed companies outperformed those with a relatively lower level of adoption in both overall performance and behavioural outcomes, despite them all having matching contextual factors.

Nair and Prajogo (2009) point out that internalization of the ISO 9001 standard “entails an active use of underlying practices to modify behaviour and decision making” (p. 4546; Nair and Prajogo, 2009). They propose the following five elements as underlying practices of ISO 9001: 1) training all employees regarding total quality concepts and ISO 9001 requirements; 2) explaining to employees the company’s quality policy, objectives, and procedures; 3) clearly documenting the quality policy and procedures for quality management and continuously updating them; 4) maintaining daily practices to comply with the documented procedures based on the ISO 9001 requirements; 5) conducting an internal audit regularly for continuous improvement of processes. Nair and Prajogo (2009) findings indicate that internalisation is positively associated with operational performance and operational performance in turn is positively associated with business performance. Thus, internalisation of ISO 9001 standards is an important mediator between motives and performance. Confirming this is the
contribution of Heras-Saizarbitoria (2011), whose set of factors and sub-factors that operationally internalize the ISO 9001 construct clearly indicate that concept of internalization is a relevant one in explaining the heterogeneity found in Spanish organizations that adopted ISO 9001.

Finally, in his more recent paper Boiral (2012) has gone beyond the neo-institutional approach, to analyze the adoption of ISO 9000 through the lens of the degree-purchasing syndrome (DPS) in education. The findings of this paper debunk the rhetoric of impartiality, objectivity and rigor surrounding the ISO certification process. Instead he finds that companies tend to acquire ISO certification as a sort of “organizational degree” awarded after passing a quite predictable exam, with all the pitfalls that entails, such as rote preparation, procrastination, short-term focus and cheating.

Our review found that the studies used a range of methodologies. Six are based on quantitative analysis of surveys using the opinion of managers involved in the adoption of the ISO 9001 standard. Similarly, three of the six studies that used qualitative methods relied on the responses given by the managers in charge of the adoption process. As has been pointed out by different authors in this field (e.g. Boiral and Roy, 2007; and Wayhan and Balderson, 2007; Dick et al., 2008; Boiral, 2011), the results obtained from managers involved in quality management can be biased. This bias is a tendency towards an over-positive view of the benefits of their certified quality management system as they attribute benefits to certification that arise for other reasons. However, as stressed by Walgenbach (2007) this bias is difficult to avoid when using a single respondent as they need to be familiar with the standard to be able to give reliable answers to questions concerning the heterogeneous adoption of ISO 9001 (e.g. decoupling of the QMS from the work-activities of the organization).

Discussion and conclusions

Despite the great majority of studies into the adoption of meta-standards assuming homogeneous adoption, our review shows there are an increasing number of studies (12 in total) that emphasize heterogeneity on the processes of adoption of the most widely adopted meta standard ISO 9001. Thus, our review concludes that there is evidence to support the view of ISO 9001 implementation diversity that was put forward by Boiral (2003) close to a decade ago. The review shows in diverse ways, that the process of adoption of ISO 9000 standards is “reinterpreted, renegotiated and modified in organizations” (Boiral, 2003, p. 720).

As Dick (2000) underlined some years ago, despite the huge amount of literature on the adoption of ISO 9001, “the generalised business performance benefits claimed for ISO 9000 certification are not justified by the research evidence” (Dick, 2000; p. 369). Instead, our review strongly indicates that researchers need to acknowledge the limitation of certification as a homogeneous measure (Christmann and Taylor, 2006), and instead focus their studies on how different approaches to adoption affect benefits.

Our review shows a range of intermediate variables that influence how ISO 9001 is implemented and the impact of these on benefits. However, the approaches are fragmented so future research is needed to integrate these
research models to achieve a full understanding of direct and indirect effects of each variable. From this more parsimonious models can be proposed that in turn can be tested and replicated by other researchers.

The twelve articles we have found indicated that diversity in adoption is possible and that it is plausible to suggest that adoption of standards does not imply a homogenous approach or predictable performance outcomes. As stressed by Oliver (1991), adaptation to external pressures depends on various organizational attributes and strategic responses. Therefore, specific empirical studies on the adoption of ISO 9000 are needed in order to explore the internal contingencies that lead to a successful implementation of ISO 9001. These contingencies we suggest could include the availability of resources, the decision process for allocating resources and how they impact on the internalisation of the standard and benefits achieved. Also, as Christmann and Taylor (2006) and Nair and Prajogo (2009) underlined, due to the increasing importance of context dependence, future research on the heterogeneous adoption of ISO 9001 should explore the sources of variation in the quality of implementation in cross-country studies with different cultures and political environments.

In summary our review clearly shows that expecting homogenous implementation of standards by certified companies is mistaken. Firms implement the standard in a variety of ways and despite third party accreditation many firms do not internalise the standard in their daily routines. We have highlighted twelve articles in our review that use variables that help us understand the reasons behind the diverse ways that quality management standards are implemented and how they explain benefits achieved. We believe that future research needs to consolidate what is already known by integrating the different models so that a core explanatory model can eventually be derived.

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http://www.kent.ac.uk/kbs/research-information/index.htm