Strategies for the ISO 9001 certification life cycle (StrategISO)

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Abstract

Purpose. Certified and non-certified organisations must make strategic decisions regarding ISO 9001 adoption, maintenance, renewal, and abandonment. However, the ISO 9001 literature lacks a typology of the strategic options available to these organisations. The purpose of this conceptual study is to develop a framework of the alternative strategies for the stages of the ISO 9001 life cycle (implementation/certification, certification maintenance, and recertification/decertification stages).

Methodology. The research method is based on literature review, selection of relevant variables, and synthesis of coherent alternative strategies.

Findings. Results include the main variables of relevance for the definition of the ISO 9001 strategies (*e.g.*, life cycle stage, organisational motivations, barriers, benefits, internalisation degree, and quality of the certification body), the main situations in which organisations can find themselves (in terms of ISO 9001 certification, maintenance and decertification), the strategic options for each situation (*e.g.*: certify, maintain certification, try harder, change certification body, intensify learning and experimentation with ISO 9001), and the implications and consequences of such options. Research results are integrated into a strategy framework, composed of three strategy matrices, one for each stage of the life cycle. The matrices present the strategic situations, available strategic alternatives, and benefits of the strategies.

Originality. This study combines the results of previous research to develop an original strategy framework, which constitutes the main research contribution. As far as the author is aware, there is no such strategy framework in the literature. The framework has relevant implications for theory and practice and helps to identify future research directions.

Keywords: abandonment, adoption, barriers, benefits, cancellation, certification, decertification, implementation, internalisation, ISO 9000, life cycle, certification maintenance, matrix, motivations, obstacles, performance, quality, recertification, renewal, revocation, strategy.

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1. Introduction

Every organisation in the world needs a strategy for ISO 9001. Even if that strategy is not to adopt the ISO standard. Organisations consider, at one time or another, whether to implement a quality management system (QMS) based on the ISO 9001 standard. These organisations must also decide whether to certify their QMS. More than one million organisations have already decided to adopt the standard and are currently certified (ISO, 2022). All these certified organisations must still decide whether to sustain their certification maintenance efforts throughout the whole certification validity period or to abandon them. And organisations approaching the end of the validity period must decide whether they want to renew their certification. In fact, approximately 333,000 organisations must decide each year whether to renew the certificate, and approximately 60,000 organisations lose or decide to abandon the certification annually (Ferreira and Cândido, 2021). Thus, the ISO 9001 strategic decisions that organisations must make are diverse and must be taken at different stages of the ISO 9001 life cycle: adoption, certification, maintenance, and abandonment. These decisions matter because they can have a significant impact on product quality, customer satisfaction, organisational competitiveness and, ultimately, firm performance. Indeed, the decision to certify positively impacts the performance of companies (*e.g.*, Siougle *et al*., 2019; Ullah, 2020; Gallego and Ramírez, 2023), the decision to maintain the certification has several important organisational benefits (Lo and Chang, 2007; Prajogo, 2008; Wahid *et al*., 2011), and the decision to decertify can, in some cases, lead to performance improvements (Ferreira and Cândido, 2021) while, in others, to financial distress and bankruptcy (Alič, 2014). Therefore, research on the ISO 9001 strategic alternatives available for organisations is relevant. Unfortunately, many organisations delay or avoid making strategic decisions about certification maintenance, recertification, and decertification (Yadav and Heriyati, 2023). This is due, in part, to the lack of a theoretical framework that can help managers to analyse their situation and make well-thought-out ISO 9001 strategic decisions (Chiarini, 2019; Camango and Cândido, 2023). These managers could benefit from the development of such a theoretical framework. However, the research for the development of an ISO 9001 strategic framework has yet to begin.

Currently, the most researched ISO 9001 topic is the impact (or benefits) of certification (*e.g.*, Hernandez-Vivanco *et al*., 2019; Ullah, 2020; Sfreddo *et al*., 2021). Research on this topic is not unanimous (Lo and Yeung, 2018; Cândido *et al*., 2016; 2021), but most studies conclude that ISO 9001 has a significant positive impact on firm performance (*e.g.*, Hernandez-Vivanco *et al*., 2019; Ullah, 2020; Sfreddo *et al*., 2021; Siougle *et al*., 2019, 2023). Another important research topic is the ISO 9001 implementation process (*e.g.*, Esgarrancho and Cândido, 2020), which includes the motivations for certification, critical success factors, and obstacles faced during the implementation of the standard (e.g., Sfakianaki and Kakouris, 2020; Carvalho and Medeiros, 2022). Research also addresses topics such as the diffusion of ISO 9001 (Blind *et al*., 2018), improvement of the standard (Anttila and Jussila, 2017; Fonseca *et al*., 2023), roles of auditors and consultants in certification (Abuazza *et al*., 2020), process management in the context of ISO 9001 (Sfreddo *et al*., 2019), innovation in the context of ISO 9001 (Manders *et al*., 2016), and the degree of ISO 9001 internalisation (Tarí *et al*., 2020). Some of this literature considers the stages of the ISO 9001 implementation process (Kim *et al*., 2011) but only one relatively recent study presents the definition of ISO 9001 certification life cycle (Castka, 2018).

More recent research focuses on newer topics such as ISO 9001 certification maintenance, ISO 9001 decertification, and ISO 9001 recertification (Camango and Cândido, 2023). ISO 9001 maintenance research addresses the motivations, initiatives, barriers, and benefits of certification maintenance (Wahid *et al*., 2011; Castka, 2018). The research on ISO 9001 decertification addresses the motivations (Chiarini, 2019; Cândido and Ferreira, 2023; Clougherty and Grajek, 2023) and the consequences of decertification (Sansalvador and

Brotons, 2015; Cândido and Ferreira, 2022). Lastly, the research on recertification addresses the efficiency impact of ISO 9001 recertification (Nurcahyo *et al.*, 2020). This research on maintenance/decertification/recertification is still in its infancy and presents many research opportunities (Camango and Cândido, 2023). However, this research does not discuss the strategic alternatives available to organisations during the ISO 9001 life cycle.

Previous research assumes (mostly implicitly) that organisations make strategic decisions regarding ISO 9001. Non-certified organisations may decide to implement an ISO 9001 QMS and may additionally decide to certify it. Organizations already certified can decide to maintain the QMS or not. And certified organisations can decide to renew their certification or abandon it. But, as far as the author is aware, these decisions have not been researched from a strategic point of view. Although the current literature provides some insights into the motivations, barriers and consequences of these decisions, there is currently no comprehensive study on the strategic alternatives available and on the most important aspects to consider when making these decisions. Indeed, the literature rarely addresses ISO 9001 strategies explicitly, occasionally does so implicitly and, always in a fragmented way. To the best of the author's knowledge, there is no systematic and comprehensive proposal of alternative ISO 9001 strategies available to organisations, at any stage of the certification life cycle.

Since the ISO 9001 literature lacks a typology of the strategic options available to these organisations, the purpose of this conceptual study is to develop a framework of the alternative strategies for each stage of the ISO 9001 life cycle (implementation/certification, certification maintenance, and recertification/decertification stages). To start filling this gap in the literature, this conceptual article presents StrategISO, a framework of the alternative strategies available for the stages of the ISO 9001 life cycle.

The framework developed here is based on an extensive literature review and systematic assessment and (re)conceptualization of the key findings from the certification literature, which culminates in the integration of extant research contributions into a coherent and comprehensive ISO 9001 life cycle strategy framework. Based on the literature review, the research initially identifies the main stages of the ISO 9001 life cycle and the main variables that influence the ISO 9001 strategic decision making. Then, still based on the literature, it conceptualises the strategic situations in which firms can find themselves, formulates strategic alternatives for each situation, and develops theoretical justifications for these alternatives. Finally, the conditions under which each alternative strategy is applicable are discussed, along with the benefits of each strategic alternative, and the likelihood of decertification in the future. These are all original contributions to the literature, as this is the first study in which these topics are considered.

2. Literature review

2.1. ISO 9001

ISO 9001 was introduced by the International Organisation for Standardisation (ISO) in 1987 and has since been adopted by organisations seeking to achieve organisational goals and customer satisfaction. The ISO 9001 standard was revised in 1994, 2000 and 2015 to include a process approach, risk management and other improvements (Fonseca *et al.*, 2023). ISO 9001 is currently composed of a set of standards for quality management systems (QMSs) developed according to quality management principles such as customer focus, leadership, people engagement, continuous improvement, and relationship management (ISO, 2015; Sedevich-Fons, 2020). Organisations can implement a QMS that conforms to these principles and apply for certification by an independent registration body. Registration bodies verify the organisation's QMS compliance with the requirements of ISO 9001. These registration bodies must be impartial and accredited in accordance with ISO/IEC 17021-1:2015 to build

confidence among interested parties that any compliance checks are carried out competently (Fonseca *et al.*, 2017). After verification of compliance, the certification body issues a certificate and conducts regular (annual) surveillance audits. Verification of compliance and registration is optional – not compulsory – as organisations can implement the standards without formal certification and still gain benefits for themselves and their customers (Karapetrovic *et al.*, 2010; ISO, 2012; Cai and Jun, 2018). However, formal certification offers the added benefit of a public acknowledgement of an organisation's ability to consistently provide products and services that meet customer demands and regulatory requirements (ISO, 2015). This public acknowledgment is important for engaging in international trade because certification provides a public signal that stimulates the reduction of the information asymmetry between international transaction parties, reduction of transaction costs involved, improvement of coordination between parties and increase in the institutional legitimacy of certified organisations (Du *et al.*, 2016; Blind *et al.*, 2018; Lo and Yeung, 2018; Ullah, 2020; Yang and Kang, 2020; Montiel *et al.*, 2021). As a result of these internationally recognised benefits, ISO 9001 has quickly become the most widely adopted management standard in the world (ISO, 2022) and has been recognised as a 'passport' for international trade (Boiral and Roy, 2007). Unfortunately, the success of ISO 9001 may have undermined its growing popularity, because an increasing number of certified organisations diminishes the ability of the certification to provide a distinct competitive advantage in the marketplace (Su *et al.*, 2015; Salgado *et al.*, 2016).

2.2. ISO 9001 certification strategic features

A QMS can be seen as a 'framework for achieving a variety of […] strategically important results, [including] profit growth, income growth, customer loyalty and organisation image' (Urban, 2012; Gonçalves *et al.*, 2020). Quality management can be seen as a strategic management approach (Bastas and Liyanage, 2018) and a useful tool for strategic change management (Kunnanatt, 2007). The principles of ISO 9001 can also be seen as critical success factors (Sanchez-Lizarraga *et al.*, 2020) and as strategic management principles (Bastas and Liyanage, 2018).

An ISO 9001 QMS aims to satisfy customers and stakeholders by identifying opportunities, developing new products, coordinating resources, improving processes, and achieving results. Thus, quality management 'highly influences activities internal and external to firms at both softer levels (e.g., culture, relationships, and personnel engagement) and harder levels (e.g., capabilities, systems, coordination, and processes), [and] therefore [is] strategically positioned for driving change towards sustainable management' (Bastas and Liyanage, 2018). Quality management offers 'a response strategy for developing the business capabilities, systems, and processes necessary for [achieving] sustainable development' (Bastas and Liyanage, 2018).

However, the ISO 9001 standard has limitations and allows the certification to have undesirable strategic uses (Gremyr *et al.*, 2021). Some organisations consider ISO 9001 a superficial endeavour, viewing ISO 9001 certification as an advertising resource, and making only a marketing use of ISO 9001 (Boiral and Roy, 2007). Other organisations may be more committed to ISO 9001, and embrace it fully, thus effectively adopting all ISO 9001 principles and fully internalising them into their systems and daily activities (Naveh and Marcus, 2005; Sroufe and Curkovic, 2008; Sedevich-Fons, 2020; Tarí *et al.*, 2022). For these latter companies, ISO 9001 certification can also be considered as a first step towards the implementation of other more sophisticated and demanding QMS, such as IATF 16949, six sigma, lean management, and total quality management (TQM; Kakouris and Sfakianaki, 2018; Laskurain-Iturbe *et al.*, 2020). For these latter organisations, ISO 9001 is an organisation-wide strategy and can become a 'way of life'.

2.3. ISO 9001 certification life cycle

The concept of life cycle is widely used in the strategy and marketing literatures (e.g., Johnson *et al*., 2017:79; Kotler *et al*., 2017:260). This concept can also be applied to an organisation's ISO 9001 certification. In fact, firms that adopt the ISO 9001 standard go through several stages, which can be seen as stages in the life cycle of their certification.

The first researcher to define the ISO 9001 certification life cycle concept is perhaps Castka (2018), but several other researchers have identified stages in the certification process. Naveh and Marcus (2005), for instance, distinguish two phases: installation (concept development and planning), and usage in daily practice as a catalyst for change. Esgarrancho and Cândido (2020) consider four distinct stages: (1) analysis and planning, (2) experimentation with basic components of a QMS, (3) initiation of changes in the organisational culture, and (4) implementation and certification. And Castka (2018) identifies seven phases of the life cycle: (1) decision to adopt, (2) design and adoption, (3) deployment, (4) initial certification, (5) maintenance of the certified system, (6) recertification, and (7) decertification. Other conceptions of the 'ISO 9001 life cycle' can also be found in the literature as shown in Table 1.

Table 1. Stages of ISO 9001 life cycle in the literature

Study	Preparation	Implementation / certification	Maintenance	Recertification / decertification
Low and Omar (1997)		×	×	
Cheng and Tummala (1998)	×	×	×	
Naveh and Marcus (2005)	×	×	×	
Wahid and Corner (2009)	×	×	×	
Kim *et al*. (2011)	×	×	×	
Castka (2018)	×	×	×	×
Esgarrancho and Cândido (2020)	×	×		
Hernandez-Vivanco and Bernardo (2023)		×		×

Source: Author's own work.

For the purpose of this research, however, the ISO 9001 life cycle is condensed into three broad stages: (1) preparation/ implementation/ certification, (2) maintenance, and (3) recertification/ decertification. The literature on each of these three stages is reviewed next.

2.4. ISO 9001 certification: motivations, barriers and benefits

There are several motivations for ISO 9001 certification. These motivations can be grouped into two types: internal and external (Cai and Jun, 2018; Kakouris and Sfakianaki, 2018). Internal motivations are genuine organisational improvement intentions related with economic productivity, process improvement, and quality improvement (Sampaio *et al*., 2010). External motivations are intentions to make promotional or marketing use of the certification, often determined by customer pressures, competitive pressures, or market share goals (Sampaio *et al*., 2010). Internally motivated organisations are fully committed to implementing a quality strategy and to ISO 9001 quality principles, while externally motivated organisations consider ISO 9001 certification as an advertising resource and are only superficially engaged with ISO 9001 standards (Boiral and Roy, 2007; Cai and Jun, 2018).

Boiral and Roy (2007) combine internal and external motivations in a single framework, where both types of motivations can coexist, and can assume a weak or strong intensity (see Table 2). Based on this framework, the authors suggest a classification of four types of organisations with different levels of motivations. From this classification, the authors deduce, for each type of organisation, the resulting levels of ISO 9001 barriers and benefits. When both internal and external motivations are strong, certification is seen as a managerial and a marketing tool, implementation barriers are low, and the benefits achieved are at the highest

level. When both internal and external motivations are low, the standard is questioned by organisational members, people resist change, barriers are high, and benefits the lowest. What stands out most in Table 2 is that only when strong internal motivations are present can commitment be strong, barriers low and the benefits high.

Table 2. ISO 9001 integration rationales (extent of motivations, barriers, and benefits)

External motivations	Internal motivations	
	High	Low
High	ISO 9001: Managerial and marketing tool	ISO 9001: marketing tool, questionable
	Commitment: Strong	Commitment: superficial, ritualistic
	Barriers: Lower	Barriers: Higher
	Benefits: Highest	Benefits: Lower
Low	ISO 9001: Managerial tool	ISO 9001: bureaucratic, questionable
	Commitment: Strong	Commitment: low, resistance
	Barriers: Lowest	Barriers: Highest
	Benefits: Higher	Benefits: Lowest

Source: Adapted from Figure 1 in Boiral and Roy (2007).

Certification benefits can also be classified into internal and external. Internal benefits include higher efficiency, productivity, conformity, quality, and competitiveness, while external benefits include increased customer satisfaction, improved company image, increased market share, and heightened external legitimacy (Cândido and Ferreira, 2022). A strong relationship between types of motivations and types of benefits is widely supported by the literature (Kakouris and Sfakianaki, 2018; Ferreira and Cândido, 2021). With strong internal motivations, the benefits are mostly internal and strong. With external motivations, the benefits are mostly external and lower (Boiral and Roy, 2007; Sroufe and Curkovic, 2008; Prajogo, 2011; Cai and Jun, 2018; Sun *et al*., 2019; Sedevich-Fons, 2020). Internally motivated companies are more committed to the standard, internalise the quality management principles into their processes and, therefore, achieve higher performances. Externally motivated organisations only want to make a promotional use of the standard to improve their image and legitimacy for market penetration or market development and obtain lower performances (Boiral and Roy, 2007; Cai and Jun, 2018; Lo and Yeung, 2018).

During the implementation of the standard, organisations can face obstacles that can be detrimental to the internalisation of the standard and the achievement of the full benefits of certification. Organisations can prepare to avoid or mitigate these barriers and their detrimental effects (Esgarrancho and Cândido, 2020). Preparations include carefully analysing the organisational culture, anticipating certification barriers, planning the implementation, experimenting with quality tools, and choosing adequate auditors (Naveh and Marcus, 2005; Cai and Jun, 2018; Sfakianaki and Kakouris, 2020; Esgarrancho and Cândido, 2020). Some of the certification barriers are internal and under management control, which allows for easier mitigation. These internal barriers include insufficient resources, insufficient employee qualifications, misunderstanding of quality concepts, employee resistance to change, and others (Sfakianaki and Kakouris, 2020; Carvalho and Medeiros, 2022). External barriers are under less management control. These include registration fees, consulting fees, poor certification body (Sroufe and Curkovic, 2008; Sfakianaki and Kakouris, 2020; Carvalho and Medeiros, 2022), and incompatibility of the standard with the activity sector (e.g., healthcare; Lindlbauer *et al*., 2016). Some of these can be mitigated by management, for instance, by choosing a better external auditor who can provide better feedback for QMS certification and maintenance (Castka *et al*., 2015).

2.5. ISO 9001 maintenance: motivations, barriers, initiatives and benefits

ISO 9001 certification maintenance – the second stage of the ISO 9001 life cycle – consists

of conducting maintenance initiatives to keep the ISO 9001 QMS in good operating order (Basir and Davies, 2018). This requires initiatives to (1) ensure continued QMS compliance with the standard and, simultaneously, to (2) embrace the quality management principles (Basir and Davies, 2018). Although formal compliance with the standard may be sufficient to pass the external audit (with some certification bodies), it is not sufficient to ensure an adequate internalisation of the quality principles and to achieve the full extent of the benefits of ISO 9001 certification. Thus, ISO 9001 maintenance comprises initiatives to (1) transform quality practices into routines and to (2) continuously improve organisational processes and performance (Basir and Davies, 2018; Camango and Cândido, 2023). This involves both the technical dimensions of quality management (hard quality) and the socio-cultural aspects of quality management (soft quality; Low and Omar, 1997; Wahid et al., 2011).

The type of *maintenance initiatives* adopted by the organisation depends on its motivations (Castka, 2018). An internally motivated organisation adopts both basic and complex initiatives to maintain the certification (both technical and non-technical). An externally motivated organisation adopts only basic (technical) initiatives to maintain certification at a 'ritualistic' or 'ceremonial' level (minimum required to pass the external audits; Castka, 2018). Table 3 identifies the motivations, along with the maintenance initiatives that organisations can implement to maintain the certification, and their corresponding sources.

Table 3. Maintenance motivations, initiatives, barriers, and benefits

	Motivations, initiatives, barriers, and benefits	Sources
Maintenance motivations (internal)	Keeping the quality initiative alive, retaining the certificate to avoid decertification, anticipating ever-changing market conditions, preventing stagnation of the QMS, maintaining continuous improvement, expanding the quality movement to all organisational levels and departments, and continuing to reap the benefits of ISO 9001.	Low and Omar (1997), Water (2000), Wahid et al. (2011).
Maintenance motivations (external)	Customers continued demand for quality at lower cost and value for money, customers continued demand for certification, market dynamism and the need to keep up and innovate to remain competitive, and pressure resulting from the certification of competitors	Low and Omar (1997), Wahid et al. (2011).
Maintenance initiatives	Corrective and preventive actions, employee training, management reviews, facilitating communication and collaboration, management commitment and support, development of communication channels, formation of quality improvement teams, setting employee suggestion schemes, strengthening internal quality audits, enhancing quality culture through teamwork, providing additional resources, using performance measurement systems, improving and simplifying work processes, improving suppliers and subcontractors monitoring systems, demanding better feedback from external auditors, streamlining and optimizing auditing processes, changing external auditor, maximizing learning from external audits, benchmarking initiatives, and obtaining complementary certifications such as ISO 14001.	Low and Omar (1997), Cheng and Tummala (1998), Chin et al. (2000), Wahid and Corner (2009), Basir and Davies (2018), Castka, 2018).
Maintenance barriers	Lack of top management commitment, lack of training and education, inadequate personnel attitudes, procedures not followed conveniently, change avoidance, lack of resources, inadequate supervision, internal audits not taken seriously, lack of communication, lack of coordination, suppliers' inadequate attitude, and low performance	Low and Omar (1997), Wahid and Corner, (2009, 2011).
Maintenance benefits	Standardized operations, process improvements, reduced overlapping of functions and disputes, augmented personnel involvement and knowledge, personnel better acquainted with quality, improved quality, decreased operating costs, broader client base, increased sales volume, improved profit, and others.	Wahid and Corner (2009), Wahid et al. (2011).

Source: Author's own work.

Conversion of external motivations into internal motivations may be possible and beneficial. Although this conversion has been mentioned in the literature (Prajogo, 2011; Kim et al., 2011; Tarí et al., 2020) there is not much empirical evidence of its occurrence (Kakouris and Sfakianaki, 2019). However, cultural transformation during the maintenance stage can happen and this transformation should lead to a conversion of the motivations. Such change in motivations can contribute to proper maintenance of the ISO 9001 QMS and to obtaining

stronger certification benefits. Firms that have internal motivations (or convert external motivations into internal ones) for ISO 9001 maintenance, implement adequate maintenance initiatives, internalise the standard, and maximize its benefits (Castka, 2018).

When the standard is not properly internalised in organisational processes, the initial certification barriers may re-emerge in the organisation (Ferreira and Cândido, 2021; Cândido and Ferreira, 2023) and then become certification maintenance barriers. These maintenance barriers include for instance lack of resources, lack of top management commitment, change avoidance, and others (see Table 3).

When certification maintenance initiatives are successful, the organisation can extract rewarding maintenance benefits. These benefits are strongly related to both the maintenance motivations and the initial ISO 9001 certification benefits (Wahid and Corner, 2009; Wahid *et al*., 2011), which are also identified in Table 3, with the corresponding sources.

2.6. ISO 9001 decertification: motivations and consequences

The literature on ISO 9001 decertification addresses two main themes: decertification motivations, and decertification consequences (Camango and Cândido, 2023). The motivations can be classified into internal and external, like the certification motivations. In accordance, internal decertification motivations include, for example, savings from ISO 9001 withdrawal, internalisation of the standard, no internalization of the standard, intention to adopt a more advanced standard or QMS (e.g., cGMP, IATF 16949, Lean, Six Sigma, or TQM), and other motivations (Alič, 2014; Sansalvador and Brotons, 2015; Cândido *et al*., 2016, 2021; Simon and Kafel, 2018; Chiarini, 2019; Clougherty and Grajek, 2023). Similarly, external motivations include, for instance, customers no longer demanding ISO 9001 certification, customers demanding a more advanced standard, massification of certified competitors in the industry, and other motivations (Marimon *et al*., 2009; Cândido *et al*., 2016, 2021; Simon and Kafel, 2018; Chiarini, 2019; Laskurain-Iturbe *et al*., 2020; Ferreira and Cândido, 2021).

Although this classification of decertification motivations can be helpful, there is an alternative classification. Table 4 arranges the motivations into four coherent groups. The first group is formed by companies that can have several motivations, but that mainly want (or are forced) to migrate to a more demanding standard or QMS. The second group is formed by companies that wish to decertify because they want to save money and resources, and do not expect any additional benefit from further recertification. The third group is composed of organisations that expect to fail an external audit, have already failed, or have doubts about the recertification, because the standard was not internalised, management commitment is insufficient, or for other reasons. The fourth and last group is composed of companies whose customers no longer require certification and the companies in this group cannot discern any further competitive or marketing advantage from recertification.

This classification of motivations (Table 4) has several advantages. First, it retains some measure of separation between internal and external motivations. The first group can be internally or externally motivated, depending on whether the companies want to adopt a different standard internally or are externally asked to do so, the second group can be described as primarily internally motivated, and the last two groups are primarily externally motivated. As a second advantage, this classification consolidates the motivations into a parsimonious number of general motivations. Third, it arranges numerous incoherent motivations into coherent groups. And, lastly, it is realistic because organisations are likely to experience multiple decertification motivations, rather than having just one isolated decertification motivation.

Regarding the second decertification research theme – repercussions of decertification – the conclusions of existing studies (Alič, 2014; Sansalvador and Brotons, 2015; Cândido *et al*., 2016; Hernandez-Vivanco and Bernardo, 2023) are contradictory. The first two studies

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conclude that decertification has detrimental repercussions on firm performance, including decline in company market value (Sansalvador and Brotons, 2015), decrease in economic performance, firm liquidation, and firm bankruptcy (Alič, 2014). However, the two latter studies on this topic contradict previous results and suggest that ISO 9001 withdrawal has no statistically significant effect on economic-financial performance (Cândido et al., 2016) nor on productive performance (Hernandez-Vivanco and Bernardo, 2023). Adding to these contradictory results on decertification studies, Podrecca et al. (2021), in the first study on Social Accountability 8000 (SA8000) decertification, conclude that, after the SA8000 decertification, firms show a significant increase in productivity and profits. Similarly, Hernandez-Vivanco and Bernardo (2023) conclude that, after OHSAS 18001 decertification, firms' productive efficiency increases.

Table 4. Coherent groups of decertification motivations

Coherent groups of decertification motivations (Broad motivations)	Main decertification motivations[1]	Secondary decertification motivations[1]
1. Adoption of better QMS	Moving on to other standards or systems (the company wishes to adopt a more sophisticated standard, or the customers demand it)	Customers stopped demanding certification/low marketing value of certification[2] Too many competitors already certified/No competitive advantage from (re)certification[2] Some companies may have internalized the standard and may think recertification is dispensable[2]
2. No additional benefits expected from certification/ Save money	No benefits/Recertification benefits lower than cost Cost/Savings generated by ISO abandonment	Too many competitors already certified/No competitive advantage from (re)certification[2] Customers stopped demanding certification/low marketing value of certification[2] Some companies may have internalized the standard and may think recertification is dispensable[2] Company in financial distress
3. Did not pass an audit/ insufficient internalization/ other reasons for not recertifying in time	Did no pass the audit/Perception that the certificate will not be renewed	Quality management philosophy not assimilated/Standard not internalised Insufficient top management commitment Company may have had some negative effects of improper ISO 9001 implementation Lack of time
4. Customers no longer demand certification/ No competitive or marketing advantage from recertification	Customers stopped demanding certification/low marketing value of certification[2]	Too many competitors already certified/No competitive advantage from (re)certification[2] Other reasons

Notes: [1] The decertification motivations considered here are from Table 1 in Cândido and Ferreira (2023). [2] Some isolated motivations can integrate more than one group.
Source: Author's own work.

Conveniently, the recent study by Ferreira and Cândido (2021) provides an explanation for the contradictory results of decertification studies, based on empirical evidence and a structural equation model. The model considers four main variables: (1) initial motivations for firm certification, (2) certification benefits achieved, (3) subsequent decertification motivations, and (4) firm expectations of performance in the post-decertification period (EPAD). According to the analysis of the model, firms with a good performance '*may decertify because their motivation is to replace or upgrade their QMS*' and to improve their processes (firms in Group 1 of Table 4). '*In these cases, it seems reasonable that performance after decertification may improve and, if that is also the firms' expectation, such firms may opt for decertification. Other organisations may, in turn, abandon the certificate for believing that the standard is already internalised in their processes and customers do not demand certification (nor other types of QMS). In this case* [Group 2 in Table 4], *their performances may remain unaltered. Lastly, some firms* [Group 3 in Table 4] *may lose the certification because their fragile QMS does not pass the audits and, in this case, firm performance may remain unaltered or decrease, depending on other factors. Thus, differences in sample composition of previous studies, in*

terms of these three types of companies, could explain the contradictory research results so far.' The three groups of firms considered in Ferreira and Cândido (2021) largely coincide with the classification proposed in Table 4, which adds another group (Group 4) relevant for the purpose of the present study.

Consistent with these results, Cândido and Ferreira (2022) show that in the event of certification loss, the external benefits obtained with the certification can dissipate entirely, while the internal benefits can last, even after the certification loss. Their results suggest that internal benefits are persistent, even after the certification is lost, while external benefits can only be maintained with certification. This shows, once again, that the consequences of decertification are not homogenous and may be dependent on variables such as the motivations for certification and decertification. Externally motivated firms that decertify may lose external benefits (if customers continue to demand certification) or lose nothing (if customers stop demanding certification). Internally motivated organisations may decide to decertify if their internal benefits are low. But if their internal benefits are high, they may choose to renew the certification or to decertify and adopt a better QMS, depending on their motivations and performance expectations. In any case, their internal benefits should be retained (Cândido and Ferreira, 2022), and may even increase, if a better QMS is implemented (Ferreira and Cândido, 2021).

2.7. ISO 9001 recertification

ISO 9001 *recertification* is a recent topic with scarce research. As far as the author is aware, there are only two published articles. (Longitudinal studies on certification impact that do not explicitly discuss recertification are not considered here.) The first study, Lindlbauer *et al.* (2016), regresses the efficiency scores of German hospitals – obtained with data envelopment analysis (DEA) – to assess whether recertification has any influence on organisational efficiency. This study concludes that both certification and recertification have a statistically significant detrimental effect on hospital efficiency, although KTQ (a competing quality management certification for health care organisations) has a significant positive certification effect but no recertification effect. The other article, Nurcahyo *et al.* (2020), similarly employs DEA to examine the efficiency impact of ISO 9001 recertification in public health care centres. This study concludes that: (1) efficiency varies significantly within certified health centres, (2) only a quarter of certified centres are efficient, and (3) ISO 9001 recertification has no significant impact on the efficiency of these centres. The conclusions of these studies are surprising since, according to Nurcahyo *et al.*, recertification should allow organisations to improve their procedures and, consequently, recertification should have a positive impact on efficiency. Indeed, most longitudinal studies on ISO 9001 certification conclude that certification benefits are significant, positive, and persist over many years (*e.g.*, Hernandez-Vivanco *et al.*, 2019; Siougle *et al.*, 2019). They suggest that the effect of recertification on performance should be positive, although current research on recertification concludes the opposite.

The ISO 9001 literature reviewed in sections 2.1 to 2.7 includes all existing studies on certification maintenance, decertification, and recertification, as well as a signification portion of the ISO 9001 certification literature (which is vast). While this literature provides some insights into the motivations, barriers and consequences of ISO 9001 strategic decisions, there is currently no comprehensive study on the strategic alternatives available to organisations nor any literature on the most important aspects to consider when making these decisions. In fact, as can be seen in the literature review, previous studies rarely address ISO 9001 strategies explicitly, occasionally do so implicitly, and always do so in a fragmented way. To the best of the author's knowledge, there is no systematic and comprehensive framework of the alternative ISO 9001 strategies available to organisations, at any stage of the certification life cycle, which

constitutes a relevant research gap that is addressed in this study.

2.8. Strategy matrices

The first strategy matrix to appear is perhaps Ansoff's (1957) product/market expansion grid. This matrix is still widely used today, both in strategy and marketing (e.g., Johnson *et al.*, 2017:245; Kotler *et al.*, 2017:44). The matrix can be used as a method for structuring thinking or as a means for classifying objectives (Meldrum and McDonald, 1995:121). The next most famous strategy matrix is the Boston Consulting Group's (BCG) market share / market growth framework (Henderson, 1973). And the next two best known are perhaps the McKinsey and the Arthur D. Little grids (Segev, 1995). In addition to these well-known matrices, there are several others in the literature (See Segev, 1995). Most of these frameworks have in common the axes of the matrices, which represent (1) the competitive advantage of the company and (2) the attractiveness of its markets. New matrices continue to be developed, such as for instance the business environments matrix, HEC matrices, SPACE matrix, power-interest matrix, business attractiveness matrix, parenting matrix, and others (see Strategor, 1993:39-43, 122-137; Goold *et al.*, 1994; Radder and Louw, 1998; Lochridge, 2006; Ackermann and Eden, 2011; Campbell *et al.*, 2014:104; Johnson *et al.*, 2017:265-266). These matrices continue to be used by organisations since they have several advantages (and some risks). Table 5 summarises the advantages and disadvantages. Managers can use matrices if they are aware of both the risks and advantages. If the risks are taken seriously, the matrices are useful frameworks for analysis and for strategic thinking in organisations, as well as for training and educating managers. They can be used as a first approach to strategic thinking in organisations, to provide structure to the thinking process, to facilitate communication, and to analyse both the company and its competitors (Martinet, 1992:97; Strategor, 1993:119; Seeger, 1984; Segev, 1995; Johnson *et al.*, 2017:387). Matrices can be an important tool to help predict the future goals and strategies of competitors known to be heavily influenced/biased by these matrices (Porter, 1980:364,367). However, matrices should never be the only means of strategic analysis, nor should they be seen as a 'quick fix' or a substitute for careful analysis and decision making (Seeger, 1984).

Table 5. Advantages and disadvantages of strategy matrices

	Advantages/ disadvantages	Sources
Advantages of strategy matrices	Data reduction and simplicity Classification of situations, contexts, and strategies Facilitating analysis of the strategic situation Structuring and facilitating management strategic thinking Visual representation of complex strategic situations Identifying strategic alternatives Facilitating communication between decision makers Predicting the behaviour of competitors Facilitating managers' education and training	Porter (1980:364,367), Martinet (1992:97), Strategor (1993:119), Seeger (1984), Segev (1995), Johnson *et al.* (2017:387)
Disadvantages / risks of strategy matrices	Oversimplification (simplicity can easily become simplism) Omission of relevant variables Replacing careful management analysis Biasing management judgment Difficulty to calibrate the axes Predictability of the strategies adopted by companies using these frameworks Susceptibility for being manipulated	Porter (1980:363), Martinet (1992), Seeger (1984), Segev (1995) Campbell *et al.*, (2014:115)

Source: Author's own work.

3. Methodology: building blocks and choice of relevant variables

Relevant aspects of the methodology are the selection of the building blocks of the strategy framework to develop, the argumentation to support the relationships between the building

blocks, and the theoretical evidence supporting these relationships. The main building blocks are the stages of the ISO 9001 life cycle, the main variables of the strategy framework, and the strategic alternatives for each stage. The literature review has already addressed the stages of the life cycle. The selection of the main variables is addressed in this section, and the arguments to support the relationships between the building blocks, and in particular the alternative strategies, are developed in the next section. Supporting evidence collected from the literature review is provided at each step of the framework development.

For the literature review, the author selected the Web of Science (WoS) and Scopus databases, which include the major journal publishers and are widely used by researchers as their sources of peer-reviewed materials. The keywords for the searches were carefully selected for each of the main topics under review. For instance, for the topic of recertification, the combination of keywords was ISO 900*, recertif*, re-certif* and renew*. Lastly, the author considered some inclusion and exclusion criteria. Articles written in English with the search keywords in title, article keywords, or abstract were included. Some articles were excluded when they did not meet the quality criteria of: (a) clear research objectives or research questions, (b) adequate literature review, (c) appropriate research methodology described in sufficient detail and (d) appropriate implementation of the selected research methodology.

The literature review conducted with this method – and summarised in sections 2.1 to 2.8 – provides the justification for the choice of variables to be used as axes in the strategy matrices of the framework to develop.

For the certification phase matrix, the two selected variables are internal motivations (strong vs. weak) and external motivations (strong vs. weak), because these variables have been considered the most important determinants of the type and level of certification benefits (*e.g.*, Ferreira and Cândido, 2021). In Ferreira and Cândido's study, each of these variables explains, respectively, more than 50% and 40% of the variance in the internal and external certification benefits.

For the maintenance stage matrix, the factors considered are certification motivations (internal vs. external) and benefits achieved with the certification up to the moment of the strategic decision (high vs. low), due to the impact of the motivations and the fact that the end benefits constitute the main purpose of the certification maintenance. The motivations are the main determinant of certification benefits (Ferreira and Cândido, 2021) and current benefits are also indicative of how well the ISO 9001 standard has been implemented and internalised (Naveh and Marcus, 2005; Allur *et al*., 2014; Cai and Jun, 2018; Tarí *et al*., 2022), which further provide an indication of future benefits (Tari *et al*. 2020, 2022).

For the decertification/ recertification stage, the selected variables are certification motivations (internal vs. external) and decertification motivations (*Cf.* Table 4), because of their importance to determine the decertification propensity. Ferreira and Cândido's (2021) show that certification motivations, certification benefits, and decertification motivations explain 32% of the variance in the propensity for decertification. And Cândido and Ferreira (2022) show that decertification motivations (particularly external ones) have a positive and statistically significant effect on performance after decertification.

For the development of the strategy framework, additional factors must be considered, including, for instance, the internalisation degree, certification and maintenance barriers, quality of the certification body, and future benefits. This choice of additional factors to consider is justified because the internalisation degree influences the extent of the benefits achieved with the certification (Tari *et al*. 2020, 2022); the quality of the certification body can influence the internalization degree (Castka, 2018), and the barriers are a significant influencer of the motivations to decertify (Fereira and Cândido, 2021; Cândido and Ferreira, 2022, 2023).

4. Framework development

The aim of this work is to propose a comprehensive framework of alternative strategies for organisations that are considering implementing and certifying an ISO 9001 QMS, maintaining the certification, or recertifying the QMS. Organisations may not be aware of (1) what alternatives are available, (2) the implications of each choice, and (3) the best courses of action. The proposed framework, developed in the next sections, addresses these issues.

4.1. ISO 9001 strategies for the adoption/implementation/certification stage

The first strategy matrix (Table 6) deals with the initial decision to adopt and implement the ISO 9001 standard. The matrix suggests alternative strategic options, whose choice depends on several determinants. According to the literature, the two main determinants of certification benefits are the internal and external motivations (Ferreira and Cândido, 2021). Thus, the matrix axes are the firm's internal motivations (horizontal axis) and external motivations (vertical axis).

This matrix shares both axes with the framework developed by Boiral and Roy (2007), shown in Table 2. The Boiral and Roy (2007) matrix brings important contributions to the strategy matrix presented here, but it should be noted that the two matrixes have distinct purposes. The purpose of Boiral and Roy's matrix is to study the integration rationales, *i.e.*, the motivations, barriers, and benefits of certification. Their matrix provides a classification of firms in terms of their integration rationales and assumes that all firms in the four cells of the matrix can become certified. In contrast, the matrix proposed here is a strategy typology and suggests that some firms should not adopt the standard, nor attempt certification. This matrix suggests more than one alternative strategy for some of the possible company's situations (cells in the matrix), and further considers the effects of certification motivations and strategy on both certification maintenance and decertification propensity. The following paragraphs discuss the strategic alternatives available for each situation (cell) in the matrix.

If both internal and external motivations are strong (top left cell of Table 6), the obvious strategy is to adopt ISO 9001 along with formal registration. The external pressures for certification, together with the internal motivations to achieve quality and efficient processes, contribute to the greatest benefits of implementing ISO 9001 (Boiral and Roy, 2007), since external benefits have been shown to add to and contribute to strengthening the internal benefits (Ferreira and Cândido, 2021; Cândido and Ferreira, 2022, 2023). The propensity for certification withdrawal under this strategy is low. The company will likely maintain the ISO 9001 certification as long as external motivations persist. However, if the external pressures disappear or weaken considerably, the organisation can choose to (1) continue with ISO 9001 without renewing the formal registration or (2) abandon ISO 9001 and move on to a more demanding QMS (eg.: ACSA, cGMP, IATF 16949, Lean, Six Sigma, or TQM), because of the internal motivations and because ISO 9001 is a good starting point for the subsequent adoption of another QMS (Lakhal, 2014; Kakouris and Sfakianaki, 2018; Laskurain-Iturbe *et al.*, 2020). The abandonment of already internalised quality practices is, however, unlikely (Kafel and Nowicki, 2014), unless they conflict with the practices of a new QMS.

If only the internal motivations are strong (bottom left cell), the immediate strategies are to adopt ISO 9001 (1) with formal registration or (2) without registration. Given the lack of external pressures, the company does not need certification, and can benefit from the standard without having to bear the additional cost of registration (ISO, 2012; Cai and Jun, 2018). These strategies have strong benefits. Lower than those of the previous cell, because the company has weak external motivations and reaps lower external benefits, but higher than those of the cells with mostly external motivations (Boiral and Roy, 2007; Ferreira and Cândido 2021). In this cell, ISO 9001 is also a good starting point for the adoption of other QMS (Lakhal, 2014; Kakouris and Sfakianaki, 2018; Laskurain-Iturbe *et al.*, 2020). Once the ISO 9001 standard has

been internalised, the company may want to move to a more demanding standard or QMS. Again, the abandonment of quality practices that have been internalised is unlikely (Kafel and Nowicki, 2014), unless they conflict with the practices of the new QMS.

If only the external motivations are strong (top right cell), the recommended strategy is the adoption of ISO 9001 with formal registration. In this situation, registration provides a relevant signalling effect (Ullah, 2020), that offers additional external legitimacy (Du *et al.*, 2016; Yang and Kang, 2020), contributes to reduction of information asymmetry (Terlaak and King, 2006; Montiel *et al.*, 2021), as well as a reduction in transaction costs (Blind *et al.*, 2018), and can therefore be considered a valuable organisational resource (Barney and Clarke, 2007; Su *et al.*, 2015). Thus, in this case, registration is a necessary condition for competitiveness and survival. The benefits are positive, but without internal motivations, they should be lower (Boiral and Roy, 2007) than those of previous strategies. If, subsequently, the external pressures for certification disappear, or weaken significantly, the organisation is likely to lose the certification and might also abandon the standard, partially or completely. The abandonment of (some) quality practices can be expected in these situations (Kafel and Nowicki, 2014).

Table 6. ISO 9001 adoption/implementation/certification strategies

| | | Internal ISO 9001 certification motivations | |
		Strong	Weak
External ISO 9001 certification motivations	Strong	*Strategy*: Adopt ISO 9001 with formal registration. *Benefits*: The strongest. External benefits contribute to strengthen the internal benefits (Cândido and Ferreira, 2022, 2023). *Maintenance/decertification*: Maintenance is likely, but if external pressures weaken, the organization might (1) continue do adopt the standard without formal registration or (2) abandon ISO 9001 to adopt a more demanding QMS.	*Strategy*: Adopt ISO 9001 with formal registration. Registration is, in this case, a necessary condition for competitiveness and survival. *Benefits*: Positive, but not as strong as with internal motivations. *Maintenance/decertification*: If motivations weaken, the company will most likely lose or abandon the certification and the standard.
	Weak	*Strategy 1*: Adopt ISO 9001 with formal registration *Strategy 2*: Adopt ISO 9001 without registration. *Benefits*: Strong, lower than in companies with both motivations, but higher than in companies with only external motivations. In addition, ISO 9001 is a good starting point for other QMS. *Maintenance/decertification*: Once the company has internalized ISO 9001, it may wish to move on to other more demanding standards or QMS, with or without registration.	*Strategy 1*: Gradually experiment with ISO 9001 without registration. Manage the certification motivations. *Benefits*: Gradual adoption and experimentation can bring some benefits that may lead to motivation increase. *Maintenance/decertification*: n/a (no formal registration involved). *Strategy 2*: Do not adopt the standard and do not attempt certification. *Benefits*: Avoid a costly and probably unsatisfactory exercise. *Maintenance/decertification*: n/a

Source: Author's own work.

If both internal and external motivations are weak (bottom right cell), there are two alternative strategies. First, the organisation can experiment with ISO 9001 standards, slowly and gradually adopting more of the standards, at the organisation's own pace and without attempting formal registration. The organisation can manage motivations to strengthen them and convert the weak external motivations into internal motivations (Prajogo, 2011; Kim *et al.*, 2011; Castka, 2018; Tarí *et al.*, 2020). Gradual experimentation and adoption of standards can bring benefits that contribute to increasing internal motivations and eventually to full adoption of the standards. If this first strategy is not viable or sufficiently attractive to the organisation, then the only strategic alternative is to ignore the standard (Strategy 2), i.e., not to adopt the standard, much less to attempt certification. Given the weak motivations and the lack of interest in learning by experimenting, at the organisation's own pace, any exercise with ISO 9001 would very likely become costly and unsatisfactory.

4.2. ISO 9001 strategies for maintenance/decertification during the validity period

The second strategy matrix (Table 7) deals with the subsequent decision of whether to continue to adopt the standard and maintain the certification during the three-year validity period. The matrix suggests alternative strategic options to choose from, depending on the organisation's motivations and on the certification benefits achieved so far. Accordingly, the axes of the matrix are the firm's motivations (horizontal axis) and the firm's benefits already achieved (vertical axis). These are the axes chosen because the motivations are the major determinant of the future benefits of certification (Ferreira and Cândido, 2021) and the current benefits are indicative of how well the ISO 9001 standard was implemented and internalised (Naveh and Marcus, 2005; Allur *et al*., 2014; Cai and Jun, 2018; Tarí *et al*., 2022), which also provides an indication of future benefits. The following paragraphs discuss the available strategic alternatives for each situation (cell) in the second matrix (Table 7).

Table 7. ISO 9001 maintenance/decertification strategies for the certification validity period

		ISO 9001 certification motivations	
		Mainly internal	Mainly external
Certification benefits attained so far	High	**Strategy 1**: Keep the certification. Conduct external audits, continue to internalize the standard and to improve quality. **Benefits**: Stronger than most strategies. **Strategy 2**: Abandon certification and adopt a more sophisticated QMS. The organisation can abdicate external audits while at the same time improving the QMS. **Benefits**: Stronger than all other strategies	**Strategy 1**: Keep certification[1], conduct all external audits. **Benefits**: maintain positive benefits, but lower than with internal motivations and higher internalization. **Strategy 2**: Keep certification[1], conduct all external audits, and try to improve the internalisation of the standard (applicable if internal motivations increased or can be increased sufficiently) **Benefits**: Stronger than strategy 1
	Low	**Strategy 1**: Try harder to internalize the standard, conduct all external audits, maintain the certification. **Benefits**: Strong **Strategy 2**: Try harder to internalize the standard, conduct the external audits, maintain the certification, and change to a better-quality certification body to avoid ceremonial certification on the part of the registrar. **Benefits**: Strong **Strategy 3**: Try harder to internalize the standard without maintaining the certification (applicable if external pressures are null or low) **Benefits**: Lower than strategies 1 and 2.	**Strategy 1**: Keep certification[2], conduct external audits, gradually experiment with components of ISO 9001 not yet internalized. Do this together with suppliers (or other stakeholders) to improve coordination, motivations, and benefits. **Benefits**: Positive **Strategy 2**: Keep certification[2], conduct external audits, revise internal aspects that constitute certification maintenance barriers. Gradually experiment with ISO 9001 and convert motivations. **Benefits**: Positive **Strategy 3**. Abandon the certification[2] and, if certification is mandatory, search for other markets. **Benefits**: Ending an unsatisfactory certification experience

Notes: [1] This may be a ceremonial certification with low to moderate internalization of the standard. [2] Probably a ceremonial certification with very low (or no) internalization.
Source: Author's own work.

If internal motivations predominate and the certification benefits are high (top left cell), the organisation can choose between two alternative strategies, depending on whether the level of external pressures is null-low or moderate (in this cell they are not high). The first strategy is to keep the certification, submitting to all external audits and continuing to internalise the ISO 9001 standard. This strategy is easily justified because the motivations are internal, the results so far have been good, and the future prospects are also good. This strategy is suitable under moderate external pressures, or even when they are low. In case of absence of external pressures (or even low pressures) the organisation can opt for the alternative strategy, abandoning the certification (but not necessarily the standard) and moving on to a more sophisticated QMS. Results should be higher in this last option because the organisation saves external costs of certification, while adopting a better QMS (Ferreira and Cândido, 2021). In this case, the organisation must be willing to increase employee involvement, implement statistical process control, and make use of other advanced methods that are not required by

ISO 9001 certification (Laskurain-Iturbe *et al.*, 2020).

If external motivations predominate and the benefits achieved so far are high (top right cell), the organisation can choose between two alternative strategies, depending on whether the degree of internal motivations is null-low or moderate (in this cell they are not high). The first strategy is to maintain the certification by conducting all external audits. This strategy, however, does not guarantee the internalisation of the standard. Thus, the alternative strategy is to keep the certification and try to improve the internalisation of the standard. This option is applicable only in cases where the organisation has strengthened its internal motivations to a low or moderate degree (as a result of witnessing the external benefits of certification) or where it can increase the internal motivations (as a result of motivation management). The organisation can manage the motivations to convert external motivations into internal motivations (Prajogo, 2011; Kim *et al.*, 2011; Castka, 2018; Tarí *et al.*, 2020) by experimenting with ISO 9001 components that have not been internalised. The benefits of this second strategy should be higher than those of the first alternative strategy for this cell.

Results of the initial certification can be lower than expected due to low internalisation of the standard, a bad or inconsistent certification body that performs ceremonial/ symbolic certifications, or other internal or external barriers (*Cf.* section 2.4). If the internal motivations are strong, but the benefits (and internalisation) are lower than expected (bottom left cell), then the organisation can choose between three alternative strategies, depending on the degree of external pressures and the quality of the certification body. The first strategy is 'Try harder' to internalise the standard, submit to all external audits, and maintain the certification. The second strategy is similar, but the organisation believes that the registrar performs symbolic certifications. In that case, the organisation might as well switch to a better-quality registrar (and certification consultant) while trying harder to internalise the strategy. Castka (2018) suggests several certification maintenance initiatives that can help the organisation maintain certification while at the same time extracting higher quality feedback from the registrar and increasing the degree of internalisation of the standard. These two strategies are suitable when there are moderate external pressures for certification. If the pressures are low or non-existent, the alternative is to try harder to internalise the standard without maintaining the certification. Results so far have been low, but with a higher internalisation, the results should improve. This improvement, however, may be lower than that of the two previous alternatives, due to the lower external motivations and the consequent lower external benefits (Boiral and Roy, 2007; Ferreira and Cândido, 2021; Cândido and Ferreira, 2022).

Lastly, if the motivations are mainly external and the benefits so far are low (bottom right cell), the organisation has probably obtained a ceremonial or symbolic certification (Boiral and Roy, 2007; Nurcahyo *et al.*, 2020) with very low internalisation and is in a difficult dilemma. The organisation needs ISO 9001 registration because there are external pressures, but may be inclined to abandon it, due to the low results. In this situation, there are three alternative strategies that are difficult to succeed. Strategies consist of removing the causes of the low certification results, or circumventing them, hence the difficulty. The choice between alternatives depends on (1) the type of certification barriers that led to the low results (internal or external), (2) the degree of dependence on certification to compete and survive, and (3) the existence of alternative markets with stakeholders that do not demand certification.

The first strategy deals with external barriers (e.g., difficult coordination with suppliers, subcontractors, or other stakeholders). The strategy is to keep the certification while at the same time experimenting with selected components of the ISO 9001 standard not yet internalised. The organisation should try to involve the difficult stakeholder (Wahid and Corner, 2009; Wahid *et al.*, 2011; Kukaev *et al.*, 2020) in this experimentation and to manage both organisations' motivations to convert them into internal motivations (Prajogo, 2011; Kim *et al.*,

2011; Castka, 2018; Tarí *et al*., 2020). This should improve the benefits for both organisations but may be difficult to implement given the difficulty to coordinate with the stakeholder. In this strategy, the organisation may prefer to keep its certification body 'ceremonial', at least temporarily, while experimenting with ISO 9001.

The second strategy deals with internal barriers (e.g., unfavourable culture, poor employee attitude, or lack of resources; Low and Omar, 1997; Wahid and Corner, 2009). Besides maintaining certification, the organisation must review the organisation's internal communication, management support, training policies, resource availability, and other internal aspects that prevent the internalisation of the standard. Simultaneously, the organisation can gradually experiment with selected components of ISO 9001 not yet internalised and, as internalisation increases, manage the motivations to increase internal ones. In this strategy (as in the previous one) the organisation may prefer to keep its certification body 'ceremonial', while experimenting with ISO 9001.

The third and last strategy is to abandon the symbolic certification and continue to operate in the organisation's current markets. This strategy is only viable if the external pressures are not too strong and do not come from important stakeholders. In this case, the organisation can abandon the certification while continuing to compete and survive in its current markets. If, however, certification is mandatory for the organisation in its current markets, then the ISO 9001 abandonment strategy must be combined with the search for other alternative markets. The risks of this strategy are high, and the only benefit might be the abandonment of a long and unsatisfactory experience with ISO 9001 certification.

4.3. ISO 9001 strategies for re/decertification after the end of the validity period

The third strategy matrix (Table 8) deals with the decision to recertify or decertify after the three-year validity period of the certification. The matrix suggests alternative strategic options, whose choice depends on the organisation's motivations for certification and decertification. Therefore, the axes of the matrix are the firm's certification motivations (horizontal axis) and the firm's decertification motivations (vertical axis, according to the groups of motivations in Table 4). These are the axes chosen because certification motivations are the main determinant of certification benefits and decertification motivations are an important known determinant of certification withdrawal (Ferreira and Cândido, 2021) as well as of the expected performance after decertification (Cândido and Ferreira, 2022). The following paragraphs discuss the strategic alternatives available for each situation (cell) in this matrix (Table 8).

An internally motivated organisation that wants to adopt a better standard or QMS (top left cell) can keep ISO 9001 certification and at the same time adopt the new QMS. ISO 9001 is a good starting point for the adoption of other standards or QMS (Lakhal, 2014; Kakouris and Sfakianaki, 2018; Laskurain-Iturbe *et al*., 2020). Once the ISO 9001 standard has been internalised, the company can decide to move towards a more sophisticated QMS. As there is no intention of saving the money involved in external payments to obtain ISO 9001 recertification – and there may be some external benefits in recertification – the company can renew the certification while adopting a better QMS. In this case, the company should reap higher benefits from recertification and the new QMS, as its motivations are mainly internal. Abandonment of quality practices that have been internalised is unlikely (Kafel and Nowicki, 2014), unless they conflict with the practices of the new QMS.

An externally motivated organisation that is under pressure to adopt a better standard (e.g., the automotive industry has replaced its demand for ISO 9001 certification with a demand for IATF 16949 certification, Laskurain-Iturbe et al., 2020) should not recertify under ISO 9001 (top right cell). Since the motivations are mostly external, this organisation is no longer interested in recertifying according to the ISO 9001 standard and should replace this certification with the new standard that is being requested by its customers. With this standard

replacement strategy, the organisation can benefit by keeping its current customers, possibly acquiring new customers, and maintaining or increasing its performance. The abandonment of quality practices, not demanded by the new standard, can be expected in this situation (Kafel and Nowicki, 2014), because the organisation is externally motivated.

Table 8. ISO 9001 re/decertification strategies for after the end of the validity period

Decertification motivations		ISO 9001 certification motivations	
		Mainly internal	Mainly external
Internal or external decertification motivation	Adoption of better standard or QMS	*Strategy*: Renew ISO 9001 certification and simultaneously adopt new standard or QMS. *Justification*: There may still exist benefits of ISO 9001 certification and there is no need to save the money involved with recertification. *Benefits*: Increase the already high benefits.	*Strategy*: Adopt new standard, do not renew ISO 9001 certification. *Justification*: No motivation to renew *Benefits*: maintain current customers, acquire new customers, maintain or increase performance.
Internal decertification motivation	No additional benefits expected from certification/ Save money	*Strategy*: Do not recertify. *Justification*: Standard has been internalised, but the customers do not demand certification. *Benefits*: Savings involved in external payments to ISO 9001 registrar and consultants.	*Strategy*: Do not recertify. *Justification*: No demand from customer, weak internalization, weak internal benefits. *Benefits*: Savings involved in both payments and in internal resources consumption.
External decertification motivations	Did not pass an audit	*Strategy*: Make additional efforts to renew the certification. In addition, change to a better-quality certification body and/or certification consultant. *Justification*: The organisation is internally motivated but has not fully internalised the standard. A better registrar, consultant, or both, can help. *Benefits*: To fully internalize the standard and reap the internal benefits from ISO 9001.	*Strategy*: Make additional efforts to renew the certification. *Justification*: Customers still demand certification, the company wants to recertify, and should benefit from it because customers require the standard. *Benefits*: Lose no current customers, may acquire new customers.
	Customers no longer demand certification/ No competitive or marketing advantage from recertification	*Strategy 1*: Renew the ISO 9001 certification. *Justification*: The organization did not fully internalise the standard. *Benefits*: Full implementation of the standard. *Strategy 2*: Do not recertify but continue to adopt the standard. *Justification*: Standard has been internalised and stakeholders do not demand certification, but the firm is internally motivated to use the standard. *Benefits*: To reap internal benefits without formal registration and associated external costs.	*Strategy*: Do not recertify. *Justification*: Similar to the 'No benefits/ Save money' situation. Customers no longer demand the standard, and the company does not want it because their motivations were external and there is no competitive or marketing advantage to extract from formal certification. *Benefits*: Saves certification costs. Management may focus on other initiatives.

Source: Author's own work.

Some organisations, however, may consider that there are no additional benefits to be gained from ISO 9001 recertification (second row in the matrix). These organisations may want to save money spend on recertification, registrars, and consultants, or on internal resources consumption, or on both. If the organisation is internally motivated (left cell in second row), it can continue to adopt the standard without renewing the certification. Assuming the organisation believes it has already internalised the standard and its customers do not require certification, it does not need to recertify. In this case, the organisation saves on payments to registrars and consultants, but not on consuming internal resources as it continues to adopt the standard. However, since the organisation is internally motivated, it continues to benefit from the standard even without registration (ISO, 2012; Cai and Jun, 2018).

There may also be externally motivated organisations that believe they will not continue to benefit from ISO 9001 certification (right cell in second row). Their customers no longer demand the standard, and the companies do not want it because their motivations are external. These organisations had only minor *internal* benefits, or none, in which case their certifications

may be dropped. Their best strategy is not to recertify under ISO 9001. This abandonment strategy saves money from an investment (ISO 9001 certification) that was not taken seriously by the organisation and as such did not bring substantial internal benefits.

Many organisations fail the recertification audit but may still have motivations to recertify (third row in the matrix). In this situation, both the internally and externally motivated organisations should try harder to renew their certification. The internally motivated organisations (left cell) should try harder and possibly change their registrar, consultant, or both. These organisations have not fully internalised the standard but are motivated to do so. Switching to a better registrar can contribute to getting the necessary feedback and guidance (Castka et al., 2015). Certification bodies themselves can obtain ceremonial accreditation and can contribute to ceremonial certification of their clients, which is not intended by internally motivated organisations (Castka et al., 2015). The internally motivated organisations should benefit from recertification with better registrars because of their type of motivations.

The externally motivated organisations that failed the audit (right cell) should also make additional efforts to recertify. These organisations have not internalised the standard, but their stakeholders demand certification and, consequently, they risk losing customers if the certificate is not renewed. These organisations should therefore benefit from recertification.

Lastly, there is the situation in which external pressures for certification ceased to exist (last row). In this situation, the best ISO 9001 strategy depends on the type of certification motivations. If the organisation is internally motivated (left cell), it may consider renewing the certification, to fully internalise the standard with the help of external consultants and registrars. This involves a cost (payments to registrar and consultants) but can yield high benefits from fully internalising the standard. Alternatively, organisations that have already fully internalised the standard may prefer to continue to adopt it, without formal registration and, in this case, save money. The standard has been internalised, stakeholders do not demand certification, therefore the organisation does not need it. However, the organisation continues to adopt the standard, without formal registration, because of its internal motivations and of the benefits the standard provides.

Externally motivated organisations that no longer feel pressure from their stakeholders may choose not to recertify (right cell). This case is similar to the 'No benefits/ Save money' situation (on the second row). Customers no longer demand the standard, and the company does not want it because their motivations are external and there is no competitive or marketing advantage to be gained from formal certification. The benefits of this strategy are savings on registrar payments and the opportunity to focus on other strategic initiatives.

5. Contributions

This work has three main contributions. The first, and most important contribution, is theoretical and consists in the development of the first typology of organisational strategies for the stages of the ISO 9001 certification life cycle. The typology takes all relevant knowledge gained from a comprehensive literature review and condenses this knowledge into a systematic strategy typology that emphasises the main strategic alternatives available to companies at each stage of the life cycle. The proposed framework has several practical implications. Although the framework is original and the first for the ISO 9001 QMSs, the practical implications are comparable to those of other strategy matrices in the strategic management field (*e.g.:* Meldrum and McDonald, 1995:121; Seveg, 1995; Johnson *et al.*, 2017:387). For instance, the framework can be used by organisations to generate strategic alternatives for each stage of the certification life cycle, to access and evaluate the strategic alternatives, and to help managers make a final decision (*Cf.* Table 5; Johnson *et al.*, 2017:387). The framework can also be used to provide structure to the strategic thinking, facilitate managerial communication, analyse competitors'

behaviour, and even to predict competitors' moves (*Cf.* Porter, 1980:364,367; Seeger, 1984; Martinet, 1992:97; Strategor, 1993:119; Meldrum and McDonald, 1995:121; Segev, 1995; Johnson *et al.*, 2017:387) in relation to ISO 9001. Besides these similar advantages of the framework, the framework contrasts with other strategy matrices, because many strategy matrices do not offer insights into how to successfully implement a strategy (*e.g.*, Segev, 1995:48), but this framework offers suggestions on how to achieve successful implementation. For instance, the framework makes suggestions on when to change the certification body and quality consultants, as well as when to experiment with specific components of the ISO 9001 standard to help organisations gradually internalise the standard.

However, as with other strategy matrices, managers should be aware that the analysis and decision making cannot be based solely on this framework. A careful analysis may depend on the consideration of other variables, peculiar to each organisational situation, and other management tools or information (*Cf.* Porter, 1980; Seeger, 1984; Johnson *et al.*, 2017:387). Managers should be aware of both the risks and advantages of using strategy matrices (Section 2.8) and use this framework with both risks and advantages in mind.

Unfortunately, the current problem with ISO 9001 decision making is that there are no frameworks that can help managers make theoretically supported decisions concerning certification maintenance, recertification and decertification (Camango and Cândido, 2023). This is probably one of the reasons why, paradoxically, some organisations seem not to obtain the benefits of certification but remain certified (Yadav and Heriyati, 2023), delaying or avoiding the decision to decertify. Conversely, non-certified organisations that could potentially benefit from the adoption of ISO 9001 may be postponing or avoiding the decision to adopt the standard. The strategy framework proposed in this study can help managers to assess their company's situation and make timely and better-informed strategic decisions.

The second major contribution of this study is the potential impact on current and future research. The strategy framework developed here can have significant implications for future research, which can now start to consider the influence of the distinct ISO 9001 strategies. For instance, current research on the impact of ISO 9001 on firm performance, the largest branch of the research on ISO 9001, shows contrasting results (Lo and Yeung, 2018; Cândido *et al.*, 2016; 2021). This branch of research can use the strategy framework suggested here, distinguishing the different strategies adopted by organisations, to help researchers explain why some studies show contradictory results. Different contexts and situations can lead organisations to different ISO 9001 strategies, which can lead to very different levels of performance, which in turn would help to explain why ISO 9001 certified organisations perform differently. Thus, this approach can contribute to explain why studies achieve contrasting results. Future research can also take this strategy framework into account to establish new avenues for investigation that consider, for instance, (1) how organisations make strategic decisions in relation to ISO 9001, (2) how and why specific strategies are chosen in each stage of the ISO 9001 life cycle (adoption, certification, maintenance, recertification and decertification), (3) whether organisations are making careful ISO 9001 strategic decisions, (4) whether organisations are making timely strategic decisions about ISO 9001 or delaying these decision due to lack of information and theoretical support, and (5) whether some organisations automatically recertify without careful analysis of all available information and available alternatives. Chiarini (2019) observed that many organisations lack objective information on quality performance and Camango and Cândido (2023) noted that there is a lack of theoretical support for ISO 9001 strategic decisions. This lack of information and theoretical support can lead organisations to make decisions without sufficient support, delay decisions beyond reason, avoid decisions, blindly imitate other organisations, or automatically replicate past decisions without careful analysis. These aspects also need research.

The third contribution of this work is the identification of research gaps related to the ISO 9001 life cycle. First, the lack of research on the concept of ISO 9001 life cycle. Previous research has used the concept of *stages* in the certification process as a tool or instrument for research addressing mainly other topics (such as ISO 9001 implementation, certification benefits, maintenance activities, and so on, See studies in Section 2.1). However, there is no research primarily focused on a rigorous analysis and definition of the ISO 9001 life cycle concept. The first study to talk about the life cycle (Castka, 2018) is very recent and does not develop much about the concept. Second, the lack of research on ISO 9001 life cycle strategies. This study begins to fill this research gap, but there is a need for more research, including empirical research such as case studies and surveys, to support, complement, and improve the strategic proposals made here. Third and last, the lack of empirical research and literature reviews covering the recent and underdeveloped topics of ISO 9001 maintenance, withdrawal, and recertification. Except for Camango and Cândido (2023), none of the previous literature reviews have addressed these issues. However, research on these specific stages of the life cycle can provide insights to (1) further advance research on ISO 9001 as a whole and (2) clarify the controversies on more traditional ISO 9001 research topics (*e.g.*, the controversies on the impacts of certification (and loss of) certification on firm performance; *Cf.* Ferrera and Cândido, 2021; Cândido and Ferreira, 2022, 2023).

6. Limitations and further suggestions for future research

The main limitation of this study is the lack of empirical testing of the proposed strategy framework. Empirical testing is important for the advancement of this topic. However, the scope of this study precludes the inclusion of empirical data collection and analysis. Future research should consider empirical testing of the framework suggested here.

Another limitation of the study is that it is focused on ISO 9001, the most popular ISO standard, and does not consider other management systems such as those based on ISO 14001, IATF 16949 or SA8000. Future research may consider assessing the applicability of the framework to other certifiable management systems and eventual adaptations of the framework to the corresponding standards.

Lastly, as with other strategy frameworks, the framework developed here is based on a limited number of variables. The variables were carefully chosen, according to the current literature, and only the most important ones were considered. However, other variables can also be important, depending on the organisation and its context. Managers should take this limitation seriously, because a careful analysis and decision making may depend on the consideration of other variables, other management tools and information. They should not base their analysis and decision making solely on this framework. Similarly, researchers can consider this limitation to further develop the strategy framework.

7. Conclusion

While there are several strategy typologies in the strategy literature (*e.g.*, Ansoff, 1957; Porter, 1980; Campbell *et al*., 2014:104; Johnson *et al*., 2017:265-266), the ISO 9001 literature lacks a strategy framework, particularly one that encompasses the main stages of the ISO 9001 life cycle. To fill this gap, this research aims to develop a framework of the alternative strategies available for the stages of the ISO 9001 life cycle in an organisation. The research methodology is based on an extensive literature review and a systematic assessment, (re)conceptualization and integration of the main findings of that literature. The study identifies the main variables that influence strategic decisions regarding the adoption, maintenance, and recertification of an ISO 9001 QMS. These variables (motivations, benefits, obstacles, internalization degree, and quality of the certification body) are then used to define a set of different organisational situations (cells of a matrix) for which the study identifies, describes, and discusses the

available strategic alternatives. Although the literature provides sufficient information on these main strategic variables, there is no conceptualisation of the main strategic situations in which organisations may find themselves, nor of the strategic alternatives available at any stage of the ISO life cycle. The main result of the study is, therefore, a framework with three strategy matrices, one for each stage of the life cycle. The conditions under which each alternative strategy is applicable and has the best chance of success are discussed. This framework condenses the results of previous research on ISO 9001 and offers an original, coherent and comprehensive set of alternative strategies for every type of organisational situation. Thus, this framework has the potential to impact future research on ISO 9001. Strategy frameworks such as the generic strategies (Porter, 1980), and others, have had a major impact in the strategy field. Likewise, the ISO 9001 strategy framework developed here (StrategISO) can serve as a starting point for empirical studies that address (1) how organisations make ISO 9001 strategic decisions, (2) which decisions organisations favour at each stage, (3) how timely these decisions are made, (4) what is the impact of these decisions on performance, (5) how performance varies with different types of life cycle stages and strategic decisions, and (6) what types of certification and maintenance strategies are adopted by organisations that subsequently decertify. This research can contribute to the development of a supporting theoretical framework to assist managers in the strategic decisions they need to make in relation to adoption of ISO 9001, certification, maintenance, recertification, and abandonment of the standard.

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