

The relationship between ISO 9001 certification and financial performance

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Abstract:

The objective of this research is to assess the impact of certification according to the ISO 9001 standard on financial performance. Our study carried out on four certified companies shows the existence of a positive impact of certification on financial performance.

We adopted a qualitative approach by studying multiple. Data collection was carried out with four Tunisian SMEs certified ISO 9001. To conduct this collection, we used semi-structured interviews and documentation.

These data were then processed by a thematic analysis of intra- and inter-case content. This analysis was facilitated by the use of NVIVO software in its 12th version.

The results of the study carried out on four Tunisian companies certified ISO 9001 show that the standard had a positive effect on financial performance.

Key words: ISO 9001 certification; financial performance; SME.

Introduction:

There is growing interest today in certification. Indeed, firms are increasingly resorting to ISO 9001 certification, which concerns the quality management system. Studies of the relationship between ISO 9001 certification and financial performance show similarities and differences in results.

This research aims to analyze the impact of ISO 9001 certification on financial performance in the tunisian context.

This research is divided into four parts. The first focuses on the presentation of the standard and its contributions identified in the literature and presents the components of financial performance. The second part is dedicated to the presentation of the research methodology. The analysis of the results is carried out in the third part while the discussion of the results appears in the fourth part.

1. Literature review:

1.1. ISO 9001 and its contributions:

Quality has been a permanent concern of man for a long time. Until the 19th century, it was

the artisanal age, quality was the concordance between what was made and what was specified. In the 20th century, it is the industrial age; it is the birth of quality control and quality assurance [1].

In the late 1980s and early 1990s, quality took on a broader meaning. Indeed, the definition of quality and its management have become dependent on customer demand and their satisfaction [2].

It was at the beginning of the 1980s that the mission of developing standards and guides in terms of quality management and assurance was entrusted to the International Organization for Standardization (ISO). The development of ISO 9000 standards by ISO in 1987 and their revisions, the latest of which was in 2015, have made it possible to meet the expectations of industrial and service companies.

The literature dedicated to ISO 9001 certification in the context of companies has allowed us to highlight several conclusions that relate to the study of the relationship that may exist between this certification and the performance of firms.

However, these studies are contradictory. Some reported a positive effect and others a negative effect. For organizations, the benefits of the standard are divided into internal and external benefits. Internal benefits are represented by operational improvements (reduction of non-conformities and improved productivity). External benefits are characterized by marketing improvements (customer satisfaction and access to new markets). The negative contributions relate to the cost of implementation, maintenance of operation and the entrenchment of individual and collective knowledge [3]. Organizations adopt the ISO 9001 standard for internal and/or external motivations. Internal refers to the improvement of production and organization. Externals are focused on customer pressure and the promotion of the company's image [4]. The work of Kakouris and Sfakianaki [5], conducted four in four Greek agri-food companies, using interviews and documentary

analysis identified the internal and external benefits resulting from the implementation of ISO 9001. Following elements have been identified as benefits: improved quality assurance and documented procedures, improved production costs and productivity in general, improved efficiency and employee motivation, and reduced errors and defects. For external benefits, the authors identified improved customer satisfaction, increased sales, increased market share and improved corporate brand image. [6] identified internal and external benefits, but they were unable to directly prove financial benefits.

[7], in their study in 522 Italian companies, they noted that the main benefits of implementing ISO 9001 were related to internal organization, business opportunities and reputation.

[8], on the other hand, analyzed the implementation of ISO 9001 in textile companies in Poland and Slovakia. Customer satisfaction was cited as the main motivation for companies to adopt the standard. According to the study, the improvement of the relationship with customers and communication throughout the supply chain can be the main gains from the implementation of the standard.

In the United States, [9] verified that the adoption of the standard is generally linked to a broader quality management strategy than due to market pressure. Moreover, they found that the maturity of companies' quality management systems is greater in certified companies and that certified organizations tend to prefer certified suppliers or those who have just been certified.

[10], verifying the changes perceived in Italian companies after certification according to ISO 9001 V 2015 confirmed that the new version facilitated integration with other standards.

The managerial literature has marked studies oriented towards the impacts on financial performance: [11] argued that ISO 9001 improves financial performance by positively impacting profit margin, ROA (Return On

Assets), ROE (Return On Equity), debt-to-equity ratio and earnings per share.

In 2005, [12] tracked the financial performance from 1987 to 1997 of all US-listed ISO 9001 certified manufacturing companies using event study methods, and found that the companies' decision to seek their first certification was followed by significant improvements in financial performance 3 years after certification.

[13] conducted a comparative study that analyzed the relationship between firm profitability and ISO 9001 certification based on two samples of firms for a period of five years; a sample of certified companies and a sample of non-certified entities. To do this, they used ROA as a profitability indicator to conclude that certified firms are the most profitable, confirming the hypothesis that ISO 9001 is a growth engine for profitability.

[14] also studied the relationship between ISO 9001 and financial performance on a sample of 75 companies listed and registered in the United States for a period of 10 years, a period that covers a complete economic cycle of automotive industries.

To measure PF, [15] used ROA, ROS (Return On Sales) and Tobin'Q. These researchers noted a significant impact on the FP measured by the ROA and the Tobin'Q, but this is not the case for the ROS, demonstrating that the value of the market capitalization of certified companies tends to grow steadily once the certification is obtained.

However, not all studies have concluded that the standard improves company FP. [16] falls into this category. He analyzed the impact of ISO 9001 on the FP of American electronics industries, the industries with the most ISO 9001 certifications in the United States, using EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) as a measurement indicator. The results obtained by Morris do not support the hypothesis that the frame of reference leads to a higher FP (Financial Performance).

[17] conducted a study hypothesizing that ISO 9001 certification is associated with improvements in three dimensions of financial performance. These dimensions are operational efficiency, sales growth and overall financial performance. These dimensions are measured using profit margin, sales growth and earnings per share. Based on data from a sample of 70 companies listed on the Singapore Stock Exchange over a 6-year period, the results of the study were consistent with the assumptions in showing that the magnitude of improvement is primarily due to operational efficiency.

The results are explained by the fact that companies can follow ISO 9001 for other purposes other than FP such as international sales aspirations, competitive advantages or customer requirements.

[18] noted a positive effect on FP measured in terms of sales growth and ROS for Brazilian companies. [19] based on a sample of 58 listed Pakistani companies also noted a positive effect on FP.

In turn, [20], after studying a sample of 287 Greek companies, concluded that ISO 9001 does not directly influence business performance, including FP. But it has an indirect effect by increasing manufacturing quality and operational performance.

According to [21], the significant costs of implementing and maintaining the standard are not offset by the benefits it provides.

[22] conducted an empirical study based on real data to better understand the relationship between ISO 9001 registration efforts and customer satisfaction.

In this study, data was collected from manufacturing companies operating in the United States. This research indicates that ISO 9001 does not have a direct positive relationship with customer satisfaction but rather suggests that it leads to improved quality which contributes to customer satisfaction.

A diagnosis conducted by [23] shows that ISO 9001 may not always lead to an improvement in the level of customer satisfaction. Therefore,

a gap analysis should be implemented to define areas for possible improvements.

Research work that has focused on examining this relationship repeatedly reports the positive and significant effect of ISO 9001 on the performance of organizations.

In this sense, and within the framework of research that has studied the influence of certification on commercial efficiency, several studies have highlighted a positive effect of ISO 9001 on commercialization [24] [25] [26] [27].

In addition to business efficiency, the internal benefits of ISO 9001 have also been a focus of much research.

[28] as part of his study of the impact of ISO 9001 on the performance of Algerian companies, he focused on the primary motivations for certification on the one hand and on its impact on the somewhere else. He deduced that the external reasons significantly dominate the first motivations of the leaders, thus positioning themselves, in the first place, the pressure of the competition. Then comes the customer requirements. And third is the will to anticipate. As for the external reasons, the results revealed only one motivation relating to the improvement of products and services. Daoudi also found that ISO 9001 has a positive effect on performance, the improvements of which are perceived on the competitive position, document management, corporate image, product quality, control of production processes., employee mobilization and internal communication. This positive effect is accompanied with a disappointment on the commercial performance.

[29] found that certification led to better productivity. Indeed, they concluded that certified companies avoided the phenomenon of substantial productivity degradation.

[30] pointed out that ISO 9001 certification improves internal communication within the company. This improvement is explained by the progress of the mastery of the processes by the managers and by the employees.

On the social level, there is research that has dealt with the influences of the norm on employees.

In 2010, [31] noted that they had developed the first research that examines the effects of ISO 9001 on employees such as employment and health and safety effects. They analyzed a sample of 1,000 firms in California to find a reduction in death rates and injury rates and an increase in growth rates in sales, jobs, payrolls and average annual profits.

The perceived impact of the standard on staff remains an under-explored theme in the literature [32].

According to [33] the standardization of practices can contribute to discouraging critical and creative thinking.

Companies may interpret the standard in different ways to yield different results [34].

Indeed, the standard can take three aspects: It can appear as a device for regulating quality and performance and coordination adopting action models such as the PDCA. It can also be presented as a tool for learning and innovation by capitalizing on experience, practices and activities to improve by resorting to reflection on feedback, for example. Finally, the standard can appear as a control and governance device by acting on the process of verifying the effects and the achievement of the [35].

Based on the four recommendations of the standard in terms of Human Resources Management, [36] conducted a study that highlights the impact of the ISO 9001 standard on HRM practices in industrial firms. The results show that certified companies frequently set up a global policy in terms of training, recruitment and information sharing. This consequently develops the culture of HR audit.

[37] proposed a tool for detecting and mitigating harassment within ISO 9001 certified companies based on three indicators capable of identifying situations of harassment, which are staff satisfaction, turnover rate and the remarkable increase in the rate of absenteeism.

The standard contributes to improving the skills of employees. In fact, quality experts agree that certification must begin with training and end with training [38].

[39] conducted a comparative study between certified and non-ISO9001 certified SMEs to deduce that the standard significantly improves qualitative performance and relatively quantitative performance. To frame the quantitative performance, the indicators presented in this research are the turnover, the number of customers, the net result, the material investment, the number of staff, the cost of production and the cost of non-quality. . While the qualitative performance indicators are the quality of the products and/or service, brand image, customer satisfaction, customer loyalty rate, staff involvement, staff satisfaction, control of the production process and the formalization of the company's know-how.

[40] pointed out that the standard contributes to cost control, improved internal organization and good management of customer complaints.

[41] find that the standard has a significant impact on the organizational performance of SMIs (Small and Medium Industries). These authors used the measurement model proposed by [42] who defines four dimensions of organizational performance such as: internal processes, innovation, customers and the financial dimension.

[43] developed a study that aimed to verify the impact of ISO 9001 on the performance of Brazilian companies based on the BSC. These authors revealed positive effects on employee involvement, top management, process management and customer orientation.

When analyzing the impact of ISO 9001 on operational performance (OP), there are studies that have shown the absence of significant impacts of the standard [44]. On the other hand, other studies have proven an increase in operational performance by acting positively on productivity and internal communication and by reducing internal conflicts [45]; [46].

Still speaking of the PO, the repository can act on the sales and distribution processes. [47] noted a positive effect on marketing. But this is a weak and sector-dependent effect: A positive effect in the electronic equipment and computer equipment sector and a non-existent effect in the chemical industry sector.

The majority of research shows disappointment with the impact of the standard on commercial efficiency despite being cited as one of the first motivations for certification [48].

Although, the majority of research has shown a positive relationship between ISO 9001 certification and organizational performance [49]. There is another current that affirms that the presence or absence of this certification influences neither performance nor quality [50]; [51].

The review of the literature reveals that the effects are not obviously positive. [52] concluded that there are no financial advantages over uncertified competitors.

In addition, [53] found an increase in costs and demotivation on the part of employees linked to high bureaucracy.

Furthermore, [54] inferred the lack of resolution of embedded problems. Economically, a study conducted by [55] reveals lower ROA .

The implications of the norm that emerge from the literature remain largely debatable for several reasons according to [56]: Compared to the scale of the phenomenon, the number of studies carried out on this subject is limited. The majority of studies carried out in terms of ISO9001 certification are published in journals specializing in quality, thus generating a categorical reading that lacks a critical perspective. The majority of studies are done in developed countries despite the strong growth in the number of certifications in developing countries. The reduced number of international comparative studies. And finally, the lack of studies on the contingency factors that necessarily impact the contributions of the standard.

1.2. Financial performance:

Performance has long been a one-dimensional concept based on a purely financial logic and measured by quantitative indicators [57] [58].

The notion of performance has aroused the interest of several academics working in the various fields of research and development. These areas include economics, strategic planning, accounting and finance [59]

Finance can be defined as the provision of money when needed. However, as a management function, it has a special meaning of funds and their efficient use. Finance is essential for the conduct of business. It is considered the lifeblood of a commercial enterprise. Indeed, in the modern money-oriented economy, finance is one of the bases of all kinds of economic activities. It has been rightly said that businesses need money to make money. It is also true that money only becomes more interesting when properly managed [60].

Financial statements provide the basic data for analyzing financial performance. They provide useful information reflecting the financial position at a given date in terms of assets, liabilities, equity, etc. Much can be learned about a company from a careful examination of its financial statements, which are an invaluable document [61]. Financial analysis focuses on key figures and the meaningful relationship between them. This analysis is a process that consists of evaluating the links between the constituent elements of the financial statements in order to obtain a better understanding of the situation of the company and consequently of its financial performance [62].

The presentation of financial statements is the main interest of stakeholders because it reflects the financial performance leading to the sustainability of the [63]. [64] noticed that financial performance gives a more accurate perspective of a company's performance. This performance presents the most important metric for profitable businesses. Generally, the results of an organization have been assessed through the use of financial measures.

Since the first monetary crises, investors have gradually shown themselves to be more concerned about the financial performance of manufacturing companies [65].

Financial Performance (FP) corresponds to the achievement of the profitability desired by shareholders [66]. This profitability corresponds to the ratio of profits to invested capital [67]. With [68], the notion of FP goes beyond the point of profitability to also encompass the creation of value for shareholders.

Before the 1990s, the evaluation of FP focused on indicators that suggest that the performance of the company is just a matter of shareholder wealth. These indicators were mainly Return on Investment (ROI), results and turnover. Subsequently, there was an improvement in the financial indicators to ensure better representativeness. Among these indicators, there is the Return On assets (ROA), the Return On Equity (ROE) and the Economic Value Added (EVA) and the Cash-Flow Return On Investment (CFROI) [69].

[70] pointed out that FP measurement can be accounting or market based. The FP is generally assessed from the accounting documents. And to measure it well, it is necessary to determine its measurement indicators and its determinants [71]. For his part, [72] indicated that accounting measures encompass a range of measurement indicators. Despite its importance, financial performance seems insufficient to understand the performance of the company, hence the need to include other forms of performance [73].

2. Research methodology:

We adopted a qualitative approach by studying multiple cases which allowed us to analyze the impact of ISO 9001 certification on financial performance.

This method, which is compatible with research questions of the “how” and “why”

types, is ideal with any study conducted in depth [74].

Data collection was carried out with four Tunisian SMEs certified ISO 9001. To conduct this collection, we used semi-structured interviews and documentation. These data were then processed by a thematic analysis of intra- and inter-case content. This analysis was facilitated by the use of NVIVO software in its 12th version. The following table presents the four cases studied.

Table1 : The Cases studied

Case	Sector	Total staff
Case A	Chemical industry	36
Case B	Furniture industry	104
Case C	Chemical industry	232
Case D	Chemical industry (pharmaceutical)	180

3. Analysis of the results:

The analysis of the results is generally carried out in two stages. The first is an intra-case analysis which seeks to present the results by case studied. The second step, called the inter-case analysis, will identify the similarities and differences between the studied cases [75].

3.1. Intra-case analysis:

Case A:

To identify the impact of ISO 9001 certification on the financial performance of SME A, we first contacted the financial manager, to whom we chose to ask an open question given the great preservation vis-à-vis financial information. Then, we discussed the information collected with the QSE manager to understand the relationship between these impacts and the certification.

To answer our question, the financial manager underlined *"I can tell you that there has been a continuous increase in turnover since certification"*. After having noted that the

certification had a positive impact on the turnover, we informed the QSE manager that this increase comes firstly from the increase in customer satisfaction measured by the complaint rate: *"The purpose of the certification ISO 9001 is customer satisfaction and in this regard, we noted a decrease in the complaint rate from 0.35% in 2013 to 014% in 2017"* (Verbatim QSE manager).

The increase in turnover is also due to the increase in sales prices: *"The company which does not measure the increase in costs relating to certification and which keeps the old prices of its products will not mark a financial improvement"*. (Verbatim QSE manager)

According to the QSE manager, improving customer satisfaction essentially comes down to the process approach and continuous improvement: *"The process approach and continuous improvement are two principles of the ISO 9001 V 2015 standard which help to 'ensure that customers get good quality product'"* (Verbatim QSE manager).

The process approach is a modeling of the processes which makes it possible to have a clear vision of the organization thus helping the actors to act and to improve: *"A process is the whole of correlated activities and which transform input elements into output items. Mapping these processes will help us to act effectively on these dysfunctions and to continuously improve our managerial system"*. (Verbatim QSE manager)

Regarding the principle of continuous improvement, the QSE manager points out that the ISO 9001 standard is structured according to the Deming wheel. This wheel makes it possible to constantly repeat actions such as setting objectives by process accompanied by appropriate action plans, carrying out the work to achieve them, evaluating the results obtained and the corrective and preventive actions to be taken: *"To perpetuate the continuous improvement approach, ISO 9001 is conceptualized according to the logic of the Deming wheel PDCA (Plan-Do-Check-Act). This wheel makes it possible to constantly*

repeat the actions: Plan: it is necessary to set precise and transparent objectives with clear and understandable action plans. Accomplish: Taking action to achieve the objectives set. Check: the results obtained must be continuously monitored by audits. Improve: Take corrective and preventive actions after management reviews that occur regularly at planned intervals.” (Verbatim QSE manager)

Case B:

QSE certification, in particular ISO 9001, has significantly reduced Non-Quality Costs (CNQ) in company B.

“The financial results show a slight improvement in several indicators. On the other hand, there is a significant reduction in CNQ (Non-Quality Costs).” (Verbatim CFO)

The QSE manager attributes this reduction to the elimination of the root causes of non-quality thanks to the principle of continuous improvement of ISO 9001. Therefore, the CNQ indicator reflects the relevance of the production process and consequently the quality of the products. . This relevance could only improve the brand image of the company and optimize its financial performance.

“The principle of continuous improvement of ISO allows the organization to improve and save the costs of non-qualities by eliminating the root sources of non-qualities which can negatively impact its brand image and make it lose, therefore, potential customers and markets. Indeed, a QMS based on the principle of continuous improvement of ISO 9001 will make it possible, through the maturity of its processes, in particular the production process, to optimize the organization and make operations more and more efficient. This will of course bring many financial benefits to the organization.”(Verbatim QSE manager)

Case C:

Company C shows a significant increase in its turnover of 20% and an increase in its market share between the year of certification and the following year.

“Our turnover increased by 20% between 2016, the year of certification (year N), and 2017, the year (N+1): 20% is a significant increase. This increase in turnover has led to an improvement in our market share as well.”

(Verbatim CFO)

The increase in turnover and market share is the result of conquering new markets thanks to QSE certification.

“Customers in our sector are increasingly demanding the use of QSE certification. So meeting this requirement can only expand our market and obviously our turnover and our market share.” (Verbatim QSE manager)

Case D:

Company D shows continuous improvement in turnover, return on investment and market share since QSE certification.

“Over the past few years, we have seen a continuous increase in our revenue, return on investment and market share.” (Verbatim CFO)

The QSE manager attributes this to normative inputs. ISO 9001 improved the quality of products on the one hand and disseminated the image of a responsible company vis-à-vis its customers on the other. OHSAS 18001 and ISO 14001 contributed, on their part, to projecting the image of a responsible organization vis-à-vis its employees and its environment.

“These financial contributions are due to the contributions of the three standards: The principles and requirements of ISO 9001 have improved the quality of our products, which is reflected in the constant reduction in the rate of non-compliance produced. ISO 9001, which aims to satisfy customers, clearly conveys the image of a responsible company vis-à-vis its customers. At the same time, the other two certificates obviously conveyed the image of a responsible company vis-à-vis its employees and its environment.” (Verbatim QSE manager).

3.2. Inter-case analysis:

The four cases studied confirm that ISO 9001 certification had positive financial impacts. However, the implications differ from case to case. These are the continuous increase in turnover for case A, a significant reduction in CNQ for case B, a significant increase in turnover and an increase in market share for case C and a continuous increase in turnover, of the RSI and the market share for case D.

The divergence is also evident in the explanations provided by the actors. For case A, the contributions come down to the improvement of customer satisfaction thanks to the application of the principles of the process approach and the continuous improvement of the ISO 9001 standard. The increase in turnover is explained also by increasing the sale price after certification. The actor in case B attributes the significant reduction in NQFs to the principle of continuous improvement of ISO 9001, which led to the elimination of the root causes of non-quality by strengthening the production process. The reduction of non-qualities led to the improvement of the company's brand image, thus generating financial performance.

The increase in turnover and market share in case C is explained by the conquest of new markets thanks to QSE certification.

For case D, according to our interviewee, the increase in turnover, ROI and market share comes down to the three standards: ISO 9001 improved the quality of products on the one hand and disseminated the image of a company responsible vis to your its customers on the other hand.

4. Discussion of results:

The managerial literature marks the absence of research dealing with the relationship between ISO 9001 Certification and financial performance. And in this regard, our empirical study reveals the existence of a positive relationship between these two variables.

Some interviewees attributed these impacts to the ISO 9001 standard and others attributed it to the integration of the three QSE standards.

The positive relationship between ISO 9001 and FP corroborated the results of several researchers such as those of Heras et al. (2002), Chow-Chua et al. (2003), Sharma (2005), Benner and Veloso (2008), Starke et al. (2012) Fatima (2014) and opposed the results presented by other researchers such as those of Tazovski et al. (1999), Wayhan et al. (2002), Martinez-Lorent and Martinez-Costa (2004), Quazi and Jacobs (2004), Souris (2004), Morris (2006) and Martinez-Lorent and Martinez-Costa (2007).

From our confrontation on the ground, we understood that ISO 9001 caused positive financial impacts thanks to the improvement in customer satisfaction which results from the application of the principles of the process approach and continuous improvement. , which is in line with the results of Han and Chen (2007) and Arnaud Eve and Pierre - Antoine (2017) and we have also drawn that the principle of continuous improvement reinforces the production process, thus leading to the elimination of the causes roots of the non-qualities resulting in an improvement of the brand image of the firm. Field research also underlines that ISO 9001 improved product quality and created the image of a responsible company vis-à-vis its customers. These results are consistent with the work developed by Corbett et al. (2005), Sampaio et al. (2009), Boulfoul et al. (2014) Daoudi (2014), Kafetzopoulos et al. (2015), Ayadi et al. (2016) and by Arnaud and Pierre Pantoire (2017) who cited the increase in customer satisfaction, the improvement of quality, the strengthening of the production process and the improvement of the brand image as contributions of the 'ISO 9001.

The positive financial impacts of QSE certification are not limited to the contributions of ISO 9001. Indeed, the transition to QSE

certification allowed the conquest of new markets and the dissemination of the image of a responsible company towards its customers, its employees and its environment. In addition, the increase in sales prices after certification was indicated as a cause of the increase in turnover in our field research.

Conclusion:

The results of the study carried out on four Tunisian companies certified ISO 9001 show that the standard had a positive effect on financial performance.

Like any research, our study is not exempt from certain limitations. Indeed, given the qualitative aspect of our research, we are faced with a problem of generalization of the results.

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