



Evaluating ISO 9001:2000 Certified and Non-Certified Organizations in Brazilian Leather-Footwear Chain

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Abstract

This study analyzes the Management Practices and Results constructs from several ISO 9001:2000 certified and non-certified organizations in the Brazilian leather-footwear chain in order to identify possible differences in performance between those and to determine the Motivation construct that led these organizations to attain the certification. To achieve these objectives, a research survey was made by sending out an invitation by e-mail to complete a suitable questionnaire on the Internet. We received 130 replies, 45 from certified organizations and 85 from non-certified organizations. A validation process of the questionnaire was carried out. The factors extracted of the constructs presented positive and significant correlations in the certified organizations. These organizations also performed better in Management Practices and obtained superior Results than those of the non-certified organizations. It is suggested that the non-certified companies in the Brazilian leather-footwear chain should develop a specific motivation to obtain the ISO 9001:2000 certification in order to improve their businesses. The outcome of the research favors the implementation of such joint policies for quality along the value chain to improve industry competitiveness.

Keywords: ISO 9001:2000, management practices, survey, Brazilian organizations

Introduction

Organizations operating in the agro-industrial chain in developing countries depend primarily on lower costs to compete in the markets of the more developed economies. For over three decades, Brazil has participated in the global leather and footwear markets and now is the third largest manufacturer of footwear and the fifth largest producer of leather in the world. As a result an integrated chain of design/production/marketing of leather and footwear was developed which has generated solid positive trade balances for the country in recent years. However, Schmitz (1999) points out that other factors such as the lead time, flexibility and quality are also important for success in selling Brazilian products abroad. Unfortunately, the recent valorization of the national currency has made the export products more expensive and also exposed the domestic market to Chinese low-cost manufactured products obliging the Brazilian organizations to re-focus their efforts in two main directions. The first is the development of finer quality in the basic leather and the second is the search for specific niche markets for the exportation of footwear so as to avoid having to compete on cost alone. The companies are also being encouraged to adopt the ISO 9001:2000 quality management system as a means of facilitating the achievement of these new objectives, and indeed many of the organizations in the leather-footwear chain have obtained certification in the belief that it is in fact a positive competitive factor in the export market.

However, according to Dick (2000) it can be inferred from the studies published in the literature that the type of motivation driving the efforts for certification can be an important predictor of the new organizational performance that will be attained. The operational benefits may vary as a function of the motives for implementation. In addition, the certification does not affect all the financial indicators equally because the standard may act only, or mainly, on where the organization is interested in improving (Dimara et al., 2004). In this context, our study seeks to verify if certification leads to better Management Practices and improve overall Results in the certified organizations than in the non-certified, and whether the type of Motivation can affect the performance of either constructs in the Brazilian leather-footwear industry. To start with, we review topics related to ISO 9001 formulating the research hypothesis. In the



sequence we present the methodology utilized throughout this study. Finally, we discuss the results obtained and following conclusions are made.

The ISO 9000:2000 family of standards

ISO 9000 is a generic name given to a family of standards developed to provide a framework around which a quality management system (QMS) can effectively be implemented. ISO 9001:2000, the requirement standard, may be considered as a management system for the processes of the value added chain which is based on eight quality principles. However, it does not delegate the manner in which they can be attained. The family of standards stimulates the process of improvements by regular revisions of the system so as to ensure that the benefits are generated. Besides that, the standards themselves do not guarantee quality of the goods and services that are being produced because quality is evaluated in the final analysis by the customers. Therefore, the organization culture should be based on the final customer interests in order to achieve the desired performance results (Heras et al., 2002; Chow-Chua et al., 2003; Sharma, 2005).

ISO 9001 certification and the organization performance

There are evidences that the performance of organizations can be affected by ISO 9001 certification. A study by Sun (2000) in Norway suggests that certified companies obtain better productivity, have lower defect rate and less customer complaints than non-certified companies. Leung et al. (1999) researched certified firms in Hong Kong and concluded that there is indeed a strong correlation between the ISO 9001 and certain operational benefits. Terlaak and King (2005), in an eleven-year longitudinal study of American companies, found that the certified firms have higher production volumes than those without certification. The authors call attention to the fact that this advantage is not the result of quality changes in performance, improved stocks control or growth differences after certification. In fact, the increase of production results from the use of certification as a means of informing the buyers about the attributes of the quality management system, factors which could not otherwise easily be observed with other communication systems. The findings, however, are not consensual. For example, positive results are found in studies of ISO 9001 undertaken in countries such as Malaysia, Saudi Arabia and Spain (Naser et al., 2004; Casadesús and Kaapetrovic, 2005; Magd, 2006) and negative results or not influential studies are found in

Brazil, New Zealand, Singapore and Greek (Lima et al., 2000; Aarts and Vos, 2001; Quazi et al., 2002; Tsekouras et al., 2002) suggesting that contingency factors may influence organization's performance.

Motivation for obtaining the certification

Buttle (1997) cites a number of motivations which lead companies to pursue certification, whether for the internal processes improvement, or to obtain external benefits such as the marketing advantages the certificate can provide. Although the predominant motivation amongst the companies is related to the external benefits (Terziovski et al., 1997; Häversjö, 2000; Terziovski et al., 2003). This is a result of the ease with which certification can open commercial doors which had previously been closed to a potential supplier, or which would close if an existing supplier failed to obtain certification. It comes from the fact that the ISO standards are widely accepted in the Japanese, European and American markets. However, organizations that do not maintain adequate internal motivation by implementing a strategy of continuous improvement may prejudice the quality of their products and service over the long term (Terziovski et al., 1997; Gotzamani and Tsiotras, 2002). In addition to this, some organizations, once have obtained the certification, feel less (or even no) further pressure from their buyers and end up abandoning the objective of improving the quality of their products and services (Singels et al., 2001). Tarí and Molina (2002) point out that the certified companies who focus on giving complete product satisfaction to their clients are the most likely to get the improved business results the ISO system makes possible.

The certification procedure

An organization which has decided to obtain an ISO 9001 certificate needs to be prepared to accept the requirements of the respective standard. When the quality management system (QMS) is implemented, a set of rules is constituted regulating the company policies on quality, definitions of responsibilities and procedural manuals which help management to take corrective action for future continuous improvement. As soon as the standard is operating, the organization is integrated in two dimensions – the internal and the external. The internal integration corresponds to the coordination of those procedures created with the internal procedures already operating. The external co-ordination, however, involves the harmonization of the relationships between the customers, the company and the suppliers (Naveh and Marcus,



2005).

However, the two integrations can only become effective if a formal system of activities that develop into routines exists in the organization (Curkovic and Pagell, 1999). This can be achieved by cultural changes where the organization collectively assimilates the values related to quality in the same way as it learns to be competitive in the external environment. The culture of quality can be developed from alterations in the company's organizational system, such as (i) the creation of a mission and objectives based on a quality vision, (ii) the institution of formal and informal organizational structures, (iii) implementation of a bonus system, (iv) acquisition of appropriate technology and (v) attention to interpersonal relationships (Terziovski et al., 2003).

Finally, the adequate implementation of all the standard requirements permits the organization to obtain the ISO 9001 certification. The proper fulfillment of the requirements is confirmed by a specialized and independent external audit. After certification, internal audits are realized regularly to ensure that the company's processes are really being continually improved. Besides, external audits are conducted to check if the company is still adhering to the eight principles of the standard. Unsatisfactory results detected by the external auditors can lead to loss of the ISO registration (Sharma, 2005).

Internal and external benefits

The benefits provided by the ISO 2001 can start soon after the standards are implemented. However, Terziovski et al. (2003) hold that there are some uncertainties as the importance of obtaining the certification and the quantification of the operational and financial benefits. Singels et al. (2001) add that the consensus that exists is in the division between the internal and external benefits, as well as some disadvantages that the ISO 9001 certification may generate.

The internal benefits are those related to the processes and the organization structure such as the productivity increase, cost and waste reduction, better management of the control activities, motivation improvement and a clear definition of the structure and of the individual personal responsibilities. As regard the external benefits, we may cite increases in sales and in the competitive advantage, the possibility of breaking into new markets and the increasing customers confidence in the organization. In spite of the undoubted benefits generated by certification, it is said about some ISO 9001

disadvantages like extra costs in the certification, excessive documentation, too little attention to the support activities, failure to develop personalized products and a tendency to discourage critical thinking (Curkovic and Pagell, 1999; Singels et al., 2001; Gotzamani and Tsiotras, 2002; Tarí and Molina, 2002).

Research hypothesis

This study is focused on three constructs that attempt to represent the context in which the certified organizations operate. The first construct, Motivation, concerns the motivations which led the company to obtain the ISO 9001:2000 certification in the first place. The second construct reviews the Management Practices and is based on the eight principles that are adopted by the certified organization. And the last construct, Results, presents the organization performance both from operational and financial standpoints. Therefore, we selected five hypotheses to be tested in relation to certified and non-certified organizations of the leather-footwear chain in Brazil. The first three hypotheses test whether the three constructs are positively intercorrelated, that is, whether Motivation is correlated to Management Practices and Results and if the Management Practices correlate with Results. The other two hypotheses examine the certified companies to find out if their performance in the Management Practices and in the Results is in fact superior to the non-certified firms.

Methodology

The research survey methodology was used throughout in this study. Giuffre (1997a,b) comments that this methodology requires two types of validation: the internal validation which is concerned with how well the instruments measure what it is intended to measure, and the external validation that refers to the hypothesis that the sample in fact represents a probably situation in the population.

Traditionally, studies on ISO 9000 are realized with printed questionnaires sent out by the post (Escanciano et al., 2001; Rahman, 2001; Pan, 2003; Terziovski et al., 2003; Wiele et al., 2005) with a few exceptions where the forms are sent out by post and returned filled out by the Internet (Naveh and Marcus, 2005) or where both procedures are conducted by the Internet (Briscoe et al., 2005). Boyer et al. (2002) made a study comparing

printed and electronic questionnaires and found that in general both systems could be considered comparable in most respects. Therefore, for simplicity, we collected our data by sending out an invitation by e-mail to the sample companies who were asked to complete the form in a dedicated website.

The target populations for this study were Brazilian organizations operating in the leather-footwear chain. Because there is no unified data bank of all the companies in this chain, we created a system to obtain the greatest number possible of elements for the sample. We first identified the Trade Associations that represent each productive sectors of the chain (components, chemical products, tanneries, footwear, machinery and equipments) so that through their members we could obtain lists of firms and e-mails to contact. A total of 1453 companies made up the final sample population for our study and each received an invitation by e-mail every week during the month of September 2006.

Zhang (2000) comments that, although there is still considerable argument as to how to calculate the response rate from electronic means, good results can be obtained by excluding the returned e-mails. The total of e-mails sent out in our study was 1453 and the weekly failure delivery was 250, resulting, therefore, in 1203 potential repliers. We obtained 148 replies of which 130 were valid (45 certified and 85 non-certified organizations) which represent a rate of 10.8% of replies. The sample was composed of 65.38% of companies with up to 99 employees, 25.38% with from 100 to 499, and 9.24% with more that 500 workers.

The questionnaire was divided into two parts. The first one identified the company. The person answering was asked about his/her position and activity area in the company and to provide some details about the company such as, the manufacturing sector, where located, number of employees and whether the company was ISO 9001:2000 certified or not. Organizations in process of certification were excluded because they would still adapting to the requirements of the standards and thus would not yet be able to fully identify the implementation benefits. This procedure was adopted by Terziovski et al. (1997). The second part was divided into three constructs: (i) the Management Practices based on the eight ISO 9000:2000 principles (21 questions); (ii) the Motivation for a organization to be ISO 9001:2000 certified (seven questions); and (iii) the Results presented by the company (11 questions). In addition, the questions were distributed randomly so as disperse contagion of the possible

factors that might emerge within each construct (Black and Porter, 1996). The five-point Likert scale was used where (1) is “strongly disagree” and (5) is “strongly agree”. The questionnaire was based on the following works: Powell (1995), Black and Porter (1996), Buttle (1997), Leung et al. (1999), Sohal and Terziovski (2000), Wilson and Collier (2000), Escanciano et al. (2001), Rahman (2001), Singels et al. (2001), Gotzamani and Tsiotras (2002), Chow-Chua et al. (2003), Kaynak (2003), Conca et al. (2004). It should be noted that Tables 1, 2 and 3 present a summary of items and do not reflect the exact way they were formulated in the questionnaire. When questioning the behavior of the Results construct, we used two years as a temporal indicator (Wilson and Collier, 2000).

Internal validity

In this section, the techniques used for internal validity are explained. The first was content validity in which we checked if the elements making up the questionnaire were representative and relevant to that which it is desired to evaluate. For content validity we followed the points suggested by Haynes et al. (1995). As the questionnaire did not include direct measurement criteria for the attribute one sought to measure (for example, a particular construct), it is necessary to verify that the construction itself has validity. If it is found that there are factors in the construct, the problem resides in the degree of variance assigned to each indirect measurement, that is, to each factor (Cronbach and Meehl, 1955). To allocate the variance of the items to each factor it is necessary to check if the factors are unidimensional. This signifies that it is not possible to extract other factors from it and may be verified by means of confirmatory factor analysis (CFA) (Bagozzi et al., 1991).

We also measured the reliability of the questionnaire as to the precision of the measurement independently of what was being measured. The internal consistency, as a measure of reliability, indicates how differently the items measure the same concept (Nunnally, 1978). The estimator most often used for internal consistency is Cronbach’s alpha and 0.7 is an acceptable value (Peterson, 1994). Finally, we realized a detailed item analysis to check the correct allocation of the items in the factors. We considered the correlation between each item with each factor to verify if the item belonged or not to the factor to which it had been allocated. If an item allocated to one factor had shown greater correlation with another factor to which it had not been assigned, that item should be eliminated or reallocated (Saraph et al., 1989).

External validity

Statistical tests are applied to verify the validity of hypothesized conditions which have been created. However, the most appropriate tests for ordinal data (such as the Likert scale) are non-parametric tests because these do not specify conditions about the population parameters from which the sample was obtained (Siegel, 1988). For this reason, Spearman's coefficient was used to correlate the extracted factors and the Kruskal-Wallis test to compare the certified and non-certified companies. All statistical tests of internal and external validity were performed using the SPSS 13th version software package.

Results and discussions of the internal validity

A questionnaire is composed of a number of questions (items) that attempt to translate a general concept into an established construct. Frequently, the items can be grouped in factors to explain this construct in a lesser number of variables. Therefore, the questionnaire validation involves in the first place a test to find out if the items are susceptible of being grouped by the use of exploratory factor analysis (EFA). In this study, EFA of the three constructs was indicated since it satisfied the statistical fitness criteria of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test.

The factors extraction for the Motivation construct was realized only with the 45 certified companies as it would not be appropriate to extract motivational factors that lead to certification from organizations not yet certified. The latent root criterion was used to determine the number of factors and the Varimax rotation with the Kaiser normalization to define the allocation of the items in the factors. Tables 1, 2, and 3 demonstrate the number of factors extracted, the factor loadings after rotation, and the Cronbach alpha for each construct. Hair et al. (2005) comment that an extraction of 60% of variance is acceptable for exploratory social researches. The validity of construction via the CFA verified the unidimensionality of the factors and a detailed item analyses confirmed that all the items were correctly allocated to their respective factors.

Having completed the analyses of internal validity it is now possible to name the factors. Black and Porter (1996) point out certain difficulties in naming factors empirically related to the quality management. The authors state that the grouping of the items by the EFA is more complex to understand than those grouped by non-empirical means, such as Malcolm Baldrige and EFQM, or even the ISO 9000:2000 itself. In this study, each factor was given

a name in accordance with the composition of the most representative items of each factor, that is, those that present themselves in greater numbers in similar concepts.

Table 1 - Allocation of the items of Motivation construct.

Motivation items	Factor loadings after rotation		Communality	Alpha of the factor if item eliminated	
	Internal Pressure Motivation	External Pressure Motivation		Internal Pressure Motivation	External Pressure Motivation
Competitors already have certification		0.825	0.682		0.629
Client pressure		0.765	0.597		0.688
Opening new markets		0.575	0.551		0.690
Marketing tool		0.679	0.669		0.647
Cost reduction*	0.610		0.446	0.792*	
Base for TQM	0.854		0.730	0.313	
Continuous improvement	0.827		0.702	0.571	
Eigenvalue	2.23	2.15	4.38		
Variance explained (%)	31.8	30.7	62.5		
Alpha of the factor				0.649	0.727
Note: * Item eliminated					

Table 2 - Allocation of the items of Management Practices construct.

Principles of the ISO 9000:2000	Management Practices items	Factor loadings after rotation				Alpha of the factor if item eliminated		
		Process Management	Leadership for Continuous Improvement	Quality Strategy	Communnality	Process Management	Leadership for Continuous Improvement	Quality Strategy
Customer focus	Measurement of client satisfaction	0.761			0.654	0.907		
	Product improvement due to complaints/suggestions			0.646	0.637			0.710
Leadership	Managers drive improvements		0.470		0.500		0.894	
	Managers stimulate staff in the improvements		0.711		0.711		0.880	
Involvement of people	Team work in the improvements	0.464			0.477	0.917		
	Improvement rewards			0.674	0.603			0.725
Process approach	Documentation of the activities	0.822			0.741	0.905		
	Product traceability	0.751			0.615	0.911		
	Project revision	0.505			0.500	0.916		
System approach to management	Client-focused strategy			0.669	0.687			0.688
	SWOT analysis	0.808			0.809	0.899		
	Employees know organizational objectives		0.601		0.662		0.883	
	Continuous improvement culture		0.703		0.658		0.885	
Continual improvement	Waste reduction program		0.673		0.607		0.889	
	Quality training	0.600			0.558	0.912		
	Corrective and preventive action program	0.628			0.686	0.908		
Factual approach to decision making	Use of quality tools	0.729			0.633	0.908		
	Data collection		0.481		0.526		0.893	
Mutually beneficial supplier relationships	Incentives for suppliers to improve		0.796		0.668		0.894	
	Development of joint strategies		0.621		0.600		0.887	
	Quality as a factor in supplier selection			0.783	0.629			0.736
	Eigenvalue	5.41	4.48	3.27	13.16			
	Variance explained (%)	25.8	21.3	15.6	62.7			
	Alpha of the factor					0.919	0.901	0.769

Table 3 - Allocation of the items of Results construct.

Result items	Factor loadings after rotation			Alpha of the factor if item eliminated	
	Internal Organizational Results and Customer Satisfaction	External Organizational Results	Communality	Internal Organizational Results and Customer Satisfaction	External Organizational Results
Higher quality of the products	0.805		0.688	0.876	
Lower defective rate	0.707		0.674	0.868	
Higher productivity		0.569	0.636		0.802
Lower cost*		0.482	0.293		0.854*
Higher employee satisfaction		0.616	0.585		0.806
Lower lead time	0.739		0.635	0.874	
Lesser client complaints	0.870		0.821	0.835	
Higher client satisfaction	0.788		0.714	0.856	
Higher sales		0.722	0.643		0.800
Higher profits		0.854	0.757		0.793
Higher market share		0.755	0.608		0.815
Eigenvalue	3.84	3.21	7.05		
Variance explained (%)	34.9	29.2	64.1		
Alpha of the factor				0.887	0.839

Note:* Item eliminated

We extracted two factors for the Motivation construct. The first factor was denominated the Internal Pressure Motivation because it represents the desire for organization internal changes, such as the effort to attain total quality management (TQM), continuous improvement and the cost reduction - although this last was eliminated in the questionnaire validation. Now the second factor, External Pressure Motivation, is the consequence of the external environment influence into the organization. The certification is desirable because the organization is being pressured in that direction by their customers or because the organization want to use the certification as a marketing tool in opening new markets.

The second construct, Management Practices had three factors extracted. The first factor of the Management Practices construct was called Process Management. This factor represents the organization management as it transforms inputs (raw materials, energy, information, etc.) into outputs



(products and services). The second factor, Leadership for Continuous Improvement is the leadership that ought to be present in the organization. The leaders are responsible for coordination, participation, creating incentives and decision making to develop the organization by continuous improvement using PDCA cycle. The last factor of this construct is the Quality Strategy. This factor declares that in the company quality matters play a leading role which extends to the careful selection of suppliers and the satisfaction of customers and employees.

Two factors also were extracted in the last construct – the Results in the organizations. The first factor, Internal Organizational Results and Customer Satisfaction, concerns items associated to characteristics of product processing, such as quality, defective rate, lead time that can result in a lesser number of complaints and in higher client satisfaction with the products or services. The second factor was entitled External Organizational Results as it deals with results that derive from the interaction of the organization with the external environment, viz., opening new markets, profits and sales. It should be observed that the item productivity was allocated to this factor rather than to the first factor. This may have come about because the companies that answered our questionnaire, understood the term productivity as applying to the quantity produced rather than to efficiency of the process.

Results and discussions of the external validity

The Table 4 presents the correlations between the Motivation, Management Practices and Results factors for the 45 certified organizations. The correlations were moderate, but significant, except for the correlation between the Motivation factors.

Table 4 - Spearman correlation (significance) between factors for the certified organizations.

Construct	Factors	1	2	3	4	5	6	7
Motivation	Internal Pressure Motivation	1.000 (0.000)						
	External Pressure Motivation	0.183 (0.228)	1.000 (0.000)					
Management Practices	Process Management	0.566 (0.000)	0.329 (0.027)	1.000 (0.000)				
	Leadership for Continuous Improvement	0.433 (0.003)	0.406 (0.006)	0.735 (0.000)	1.000 (0.000)			
	Quality Strategy	0.504 (0.000)	0.415 (0.005)	0.641 (0.000)	0.674 (0.000)	1.000 (0.000)		
Results	Internal Organizational Results and Customer Satisfaction	0.370 (0.012)	0.337 (0.023)	0.515 (0.000)	0.611 (0.000)	0.648 (0.000)	1.000 (0.000)	
	External Organizational Results	0.547 (0.000)	0.349 (0.019)	0.632 (0.000)	0.641 (0.000)	0.649 (0.000)	0.749 (0.000)	1.000 (0.000)

It can be seen that the Internal Pressure Motivation factor is slightly more correlated with Management Practices construct than with the second factor, External Pressure Motivation. This may be connected to the fact that, in the first case, the organizations obtaining certification are motivated by a search for continuous improvement and TQM, that is, they are intrinsically interested in better management practices than what is needed merely to satisfy the external demands. Furthermore, both Motivation factors are correlated with the Results factors. Therefore, the concern to attend the demands of the customers and to keep up with the modifications in the external environment may induce the organization to recognize the utility of continuous improvement and TQM to achieve the desired Results construct.

In the same way as Motivation affects the Results directly, this in turn affects them indirectly via the Management Practices. This may be verified by observing that the correlations of Management Practices with Results is greater than that of Motivation with Results. This fact was expected because actual management practices based on ISO 9001 principles can generate better results in the organization than just a desire for certification. Similarly, the three factors of the Management Practices are intercorrelated. That is, if, as Terziowski et al. (2003) argument, both Motivation factors need to be present in an organization in order to generate Results the same must be true with the

three factors of Management Practices. It is essential that an organization has a quality strategy and adequate leadership to sustain continuously improve the processes management.

The best correlation found was between the factors of Results. These two factors may be interpreted in the following manner. The first Results factor related to the external environment indicates that opening new markets leads to greater sales, which call for production increases to meet the new demand and consequently, potentially to greater profits. Nevertheless, this cycle can only occur if the factor of Internal Organizational Results is also operating, because the orders will be awarded to companies offering high quality, low costs (by the reduction of rework), short lead time and having a history of keeping the customer satisfied. Figure 1 summarizes a correlation model of the constructs studied and the respective factors for the certified organizations.

In addition, a comparison between the certified and non-certified companies may be visualized on Table 5. In both Management Practices and Results, the certified organizations demonstrate superior performances to the non-certified. However, two observations are needed that one should be careful in extrapolating the findings of the sample to the leather-footwear chain as a whole.

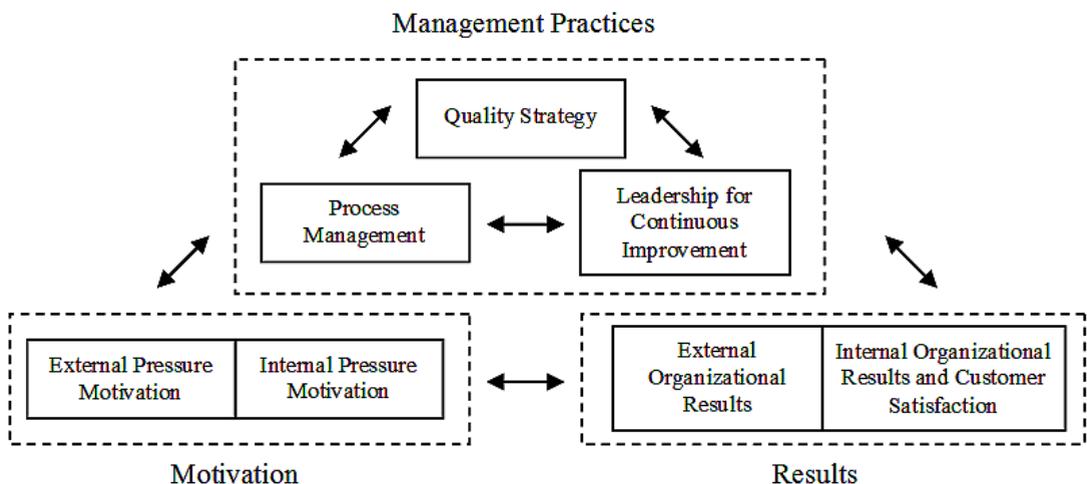


Figure 1 - Intercorrelation model of the constructs and factors for the certified organizations.

Table 5 - Kruskal-Wallis test for certified and non-certified organizations.

Construct	Factors	Certified Organizations		Non-certified Organizations		Sig.
		N = 45		N = 85		
		Mean	S.D.	Mean	S.D.	
Management Practices	Process Management	4.65	0.45	3.47	0.86	0.000
	Leadership for Continuous Improvement	4.44	0.63	3.87	0.79	0.000
	Quality Strategy	4.43	0.52	4.06	0.76	0.007
Results	Internal Organizational Results and Customer Satisfaction	4.50	0.63	4.10	0.74	0.001
	External Organizational Results	4.26	0.67	3.64	0.88	0.000

The first one is that, in a longitudinal study by Heras et al. (2002), the certified companies, even before they obtained certification, were already turning in superior performances to the non-certified. Consequently, the authors conclude that the more dynamic companies are more inclined to obtain certification and the performance may not necessarily have improved after certification. The second observation is that the comparisons made in this study concern two major groups. About 78% of the certified companies are concentrated in the components and chemical products sectors while 61% of the non-certified companies operate in the other three sectors (footwear, tanneries, machines and equipments). Many of components and chemical manufacturers considered in our study also supply products to other production chains, for example, the vehicle assemblers. This may have obliged some of these companies to get ISO 9001:2000 certification in order to stay in those markets as most of the customers pressure their suppliers to obtain this certification. For that reason, it is suggested to the other sectors of the value chain that they become motivated to obtain the certification and consequently improve their Management Practices and Results. For smaller firms with fewer resources, the ISO suggests using the ISO 9000:2000 family of standards to implement a quality management system (QMS) without actually seeking certification (ISO, 2007). This procedure would assist such organizations to be more efficient without incurring the expense of the process of formal certification. However, this implementation effort may not necessarily result in greater facility for the company to penetrate new markets, because they



will not have the ISO seal of approval which guarantees the adequacy of their QMS.

Conclusion

The objective of this study was to evaluate three constructs of ISO 9001:2000 certified and non-certified organizations in the Brazilian leather-footwear chain. The constructs analyzed were the Motivation for certified companies to obtain the ISO certification of quality management system, the Management Practices adopted in the certified and non-certified firms, and the Results presented by both.

The factors extracted of the three constructs demonstrated moderate but significant correlations. Those business that detect modifications in their external environments understand the need to apply the best possible Management Practices in order to remain competitive. These motivations – external and internal – led them to pursue certification. The Management Practices adopted with the help of the ISO 9000 standards result in a strategy focused on quality and on the leadership that would constantly improve the processes management. The study suggests organizations that had been motivated to obtain certification, and that had adopted better Management Practices based on the ISO 9000:2000 standards, in fact, presented correlation with the desired Results. Besides, the sample of 45 certified firms had superior performance to the 85 non-certified. Therefore, it was verified that the ISO 9001:2000 certification, as a quality management system can indeed provide better Management Practices and better Results for the organizations.

The present study is a contribution to the research about quality management in the organizations operating in the Brazilian leather-footwear chain. The conclusions may also be used as a guide for the development of a quality policy. It could stimulate the implementation of ISO 9001:2000 in all sectors of the value chain. In addition, the exchange of information and experiences on the quality management could reduce the disparities between companies and sectors. These efforts would improve the chain competitive so as to generate lower costs, greater flexibility and better quality in the final products promoting the opening of new markets, especially export markets.

Finally, this study has certain limitations which we believe justify more profound study in the near future. Firstly, the factors of Results were based on the perceptions of those who answered the questionnaires. A more accurate

method would be to collect factual data on the rate of defects, the volume of sales and the levels of profits. Secondly, the study used a cross-sectional analysis. So it would be appropriated to repeat the study as a longitudinal research collecting the same information over the next five or ten years so as to keep track of the evolution of quality management in the entire value chain. Extending the research to other productive value chains in Brazil would be opportune and produce data of great utility and interest. Such studies could verify the performance of the different organizations and thus identify those in need of incentives to improve the quality of their products and services.

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