QUALITY PRACTICES IN SME'S – A STUDY PERFORMED IN A PORTUGUESE REGION

Luís António Fonseca Mendes
Universidade da Beira Interior

Dado que de acordo com vários autores, as PME (Pequenas e Médias Empresas) encontram-se no centro das atenções no que diz respeito às questões de qualidade, o propósito deste artigo foi o de analisar a situação das PME portuguesas relativamente ao factor qualidade, tentando analisar o seu compromisso com a qualidade, através de um estudo das práticas de qualidade, nomeadamente no domínio dos recursos humanos e em termos de organisação. Mais precisamente, o estudo incide nas PME de uma região portuguesa do interior do país. Além disso, a investigação tentou averiguar se as PME estão preparadas para as ISO 9000 e se nelas se nota algumas das características da GQT (Gestão pela Qualidade Total), nomeadamente ao nível do envolvimento dos recursos humanos, melhoria contínua da qualidade e orientação para o consumidor. A investigação utilizou dados micro-económicos recolhidos directamente das empresas através de um questionário enviado por correio a uma amostra aleatória de 250 PME.

Since, according to several authors, SME's are at the centre of interest in the quality debate, the purpose of this paper was to analyse the situation of Portuguese SME's regarding quality factor, trying to analyse their commitment with quality through a study of quality practices, mainly in the domain of human resources and organisation. More precisely, the study focused on SME's from a Portuguese region in the interior of the country. Furthermore, the research tried to find out if SME's are prepared to ISO 9000 standards and if they are embracing some of the key feature of TQM, mainly human resources involvement, quality continuous improvement and customer orientation. The research used micro-economic data gathered directly from firms through a questionnaire sent by post to a sample of 250 SME's selected at random.

PALAVRAS-CHAVE: PME; Qualidade; Recursos humanos; Melhoria Contínua.
KEYWORDS: SME; Quality; Human Resources; Continuous Improvement.

1. INTRODUCTION

As highlighted by Wilmshurst and Whitefield (1996), quality management has become recognised internationally as one of the key strategies for business. In fact, companies are more and more pressured by increasing requirements from their customers and from a more aggressive competition, directed by organisations even if geographically distant. In 1989, the McKinsey & Company developed a research project which objective was to congregate the points of view of top management on the importance of quality and the quality management practices in the largest European entrepreneurial organisations. One part of the research was performed through an inquiry directed to the CEOs of the 500 Larger European companies. More than 90% of them thought that quality factor was critical for the global competitiveness of their companies. More than 55% answered that it was totally critical for the success of their companies (Van Ham, 1991).

Thus, many companies feel increasing necessities in looking for something that could differentiate them from their competitors, different from price or technology, because according to Inchaurtieta (1991) these tend to equal more and more in markets characterised by strong competition.

It seems then that the best path passes necessarily through a refreshing of the competitive base, remembering that this means the assumption of a new entrepreneurial philosophy where quality assumes a strategical dimension.

Thus, the reality suggests that face to this competitive context more and more aggressive and face to markets which expect more and more from their suppliers, companies must focus on quality at all the levels. Then, quality should not be considered as a narrow concept, like product's quality, but in an holistic view, involving not only the quality of products, but also the quality of the organisation as a whole: quality infra structures, quality of work conditions, and even quality in terms of ambient, among others.

Currently, in the opinion of some authors such as Ross (1993), Halligan (1992) and MacDonald (1994) among others, the correct approach lays in the Total Quality Management concept, which objective is to satisfy customers (internal and external) in all phases of the productive cycle, at the lowest cost. According to theses authors, the correct approach lies in the development of processes able to provide uniform products and/or services which satisfy or exceed the customer's expectations. In fact, we can say that the quality goal is a "never-ending" process.

As stated by Van der Wiele and Brown (1998), Small And Medium Sized Enterprises (SME's) are at the centre of interest in the quality debate for several reasons. One is that larger organisations will not be able to improve the quality of their products, services and processes, unless their suppliers or the second-tier suppliers also grow to a higher level of quality maturity. Amongst these suppliers there are many SME's, and although those organisations already have been forced to go for ISO 9000 series certification, they have to develop quality further if they want to maintain alignment with the increasing demands in a competitive environment (Van der Wiele and Brown, 1998). The ISO 9000 series certification can be defined as the starting point for entering the competition, the ongoing journey towards Total Quality Management (TQM) must deliver the competitive advantage (Van der Wiele and Brown, 1998).

Both TQM and ISO standards are concerned with quality issues. However, the emphasis in ISO standards is on systems instead of quality improvements strategies, and few other main features of TQM. According to Wilmshurst and Whitefield (1996), this key difference explains why many companies who achieve ISO accreditation do not improve after that. In fact, according to the same authors, meanwhile ISO 9000 seeks to control how things are done, TQM focuses on what is done. The latter modify business practices toward continuous change and improvement. The implication of this distinction suggest that TQM should be adopted prior to ISO 9000 standards (Wilmshurst and Whitefield, 1996).

2. PURPOSE AND METHODOLOGICAL PROCEDURES

Since, according to several authors, SME's are at the centre of interest in the quality debate the purpose of this paper was to analyse the situation of Portuguese SME's regarding quality, trying to analyse the commitment with quality through a study of quality practices, mainly in the domain of human resources and organisation. More precisely, the study focused on SME's from a Portuguese region in the interior of the country: Beira Interior region (districts of Guarda and Castelo Branco). Furthermore, the research tried to find out if SME's are prepared to ISO 9000 standards and if they are embracing some of the key feature of TQM, mainly human resources involvement, quality continuous improvement and customer orientation.

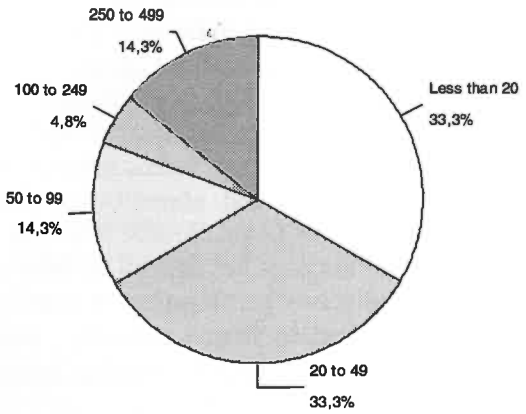
The decision about the methodology to be used in the study had in consideration the utility that results could have for a deeper knowledge of entrepreneurial reality of this region. Therefore, the research used micro-economic data gathered directly from firms through a questionnaire sent by post to a sample of 250 SME's selected at random. Forty four answers were returned, representing nearly 18% of the sample. The main data analysis had been performed through the use of SPSS (Statistical Package for Social Sciences). In this paper SME's have been defined as firms having less than 500 employees, while some definitions of SME's take 250 employees as the upper level.

The next sections present the findings of the analysis that covers both the profiles of responding firms, and how these firms cope with the challenge of quality growing importance, mainly through the analysis of the quality practices in course.

3. RESPONDENTS PROFILE

As highlighted by figure 1, almost 70% of respondents firms have less than 50 employees. Such observation confirmed in a certain way the large percentage of small firms in the region, which correspond more or less to the Portuguese industrial structure. As referred in Monitor Company (1994), 96% of Portuguese firms have under 50 employees.

Figure 1 – Firm's Dimension through Number of Employees



Regarding exports, data analysis showed that nearly 70% of respondents' firms do not export and from those that export, nearly 70% export less than 50% of their production, directing most of their production to the region or to the rest of the country.

We observed also that there is a statistical relation between firm's dimension and the condition of exporter or not exporter. In fact, results obtained through a crosstabulation between both variables suggest that the larger firms are those that export.

Regarding Certification in the region, data gathered through questionnaires revealed that none of the respondent firms is certified through ISO 9000 standards or any others. Furthermore, information obtained showed also that only 17% of firms are being certified (ISO 9000 standards). However, 81% of respondent firms consider that quality systems' certification is an essential element of quality strategy. Reasons given form these specific respondent firms for looking for certification are highlighted in table 1. Firstly it can be seen that all SME's were getting certified by themselves, and not forced by one of their customers. Secondly, these firms seem really worried with quality, since most of the answers focused on quality climate, quality continuous improvement and customers' satisfaction

Table 1 - Reasons for being certified

Reasons	% of responses
Imposition from customers	0
More employees' participation at all levels	0
Contribution to the detection and correction of errors	14,3
Competence to deliver products/services with pre-set quality	57,1
Reduction of auditing actions from national or international customers	0
Opening of a motivation climate for quality within firm	71,4
Preoccupation with quality continuous improvement	71,4
Obtaining a competitive advantage	28,6
Satisfaction of customers in order to consolidate the market position	57,1

4. HUMAN RESOURCES

A basic requirement in the TQM philosophy is to assure that everyone has a clear vision of what is expected from him, and how his tasks are related with the overall business (Dale, 1994). The information collected through the questionnaires, showed that nearly 86% of the respondent firms claimed that workers are clarified concerning its quality policy. Such observation suggests a reasonable descending communication, it means from the top to the bottom of the hierarchy. In fact, it

suggest a certain concern from top management in informing employees about the firm's quality policy and what is the duty of staff in its achievement.

However, face to the recognised importance of workers' opinions in the quality solving problems (e.g. Nevilles, 1995; Dale, 1994), the number of firms where there are some system to collect suggestions from workers (35%) seemed reduced. Furthermore, only 29,3% of respondents firms, considered that workers were involved in Quality Circles or something with this designation; it seems to strengthen the weak participation of workers in the quality problems solving.

Thus, contrasting with a good descending communication, the ascending information stream, i.e. from the bottom of the hierarchy to the top, seems reduced. However, such as highlighted by Dale (1994), the workers' motivation and commitment depends a lot on the degree of communication between the various hierarchic levels. The crosstabulation performed suggested that existence of quality circles or not does not depend on firm's size.

According to Sanz (1990), the effective participation of employees depends hardly on training and information in order to feel prepared to improve quality. However, regarding training, data showed that in only 36,6% of firms were developed training programs directed to quality topics. Furthermore, the panorama is even more worrying, when data analysis highlights that even in the few firms that propitiate training and development programs to workers, in quality field, the information gathered suggests that firms don't have an equitable training policy. In fact most of training programs are focused mainly on the more qualified employees, having little incidence on unqualified workforce.

5. FIRM'S CONSCIENTIOUSNESS ABOUT QUALITY AND QUALITY SYSTEMS FEATURES

One of the questions focused in the questionnaire was about the product's quality definition. The information gathered and showed in table 2 highlight that, for almost 88% of the entrepreneurs, a product has quality when it satisfies consumers expectations. Thus, at least in terms of concept, entrepreneurs seem to be in the "correct way", according to most of the quality researchers, such as Bank (1994), Cruz and Carvalho (1992), Dale (1994) and Juran (1993). In fact, the quality concept evolved across time; nowadays the consensual concept for quality product is related with the capability to satisfy or to exceed consumers expectations. Thus, in the generality, entrepreneurs seem to be conscientious about the new reality of markets in which, according to Cruz and Carvalho (1992), the customer started to occupy the centre of attentions. Furthermore four of the five firms that had not answered "Satisfy customers expectations", answered "Has guarantee and good/fast assistance", favouring customers' service.

Table 2 . Quality products concept

Concepts	% of positive answers
Satisfy customers expectations	87,8
Inspire reliability	43,9
Has guarantee and good/fast assistance	24,4
Has acceptable costs	24,4
Has a pleasant, modern and functional design	14,6
Lack polluting characteristics	4,9

Respecting to the engagement in quality problems (cf. table 3), one evidences that nearly 70 % of respondents firms had mentioned as more important (level of importance 1 plus 2) to "*Maintain/increase customers' fidelity*". Another factor that seems having significant importance is to *"Gain a better image through devolutions/complaints' reduction"*. Thus the information gathered suggests that what moves firms through quality is basically its image close to customers; in this way, the collected data seem to suggest that the customer is the main catalyser of actions undertaken in quality areas, what, once again highlights entrepreneurs' conscientiousness regarding the new market's conditions. In fact, it can be said that data seems to suggest that firms are customer oriented focused.

Table 3 : Main reasons for quality commitment

Reasons	Importance 1 (more important) to 5 (less important)				
	1	2	3	4	5
	1	2	3	4	5
Significant elimination of non-quality and therefore costs reduction	21,05	10,53	23,68	26,32	18,42
Significant elimination of non-quality and therefore costs reduction	21,05	10,53	23,68	26,32	18,42
Market share Consolidation	5,26	26,32	13,16	34,21	21,05
Market share Consolidation	5,26	26,32	13,16	34,21	21,05
Motivate, integrate and hold responsible every employee at every levels	7,89	2,63	26,32	21,05	42,11
Motivate, integrate and hold responsible every employee at every levels	7,89	2,63	26,32	21,05	42,11
Maintain/increase customers' fidelity	55,26	13,16	15,79	7,89	7,89
Maintain/increase customers' fidelity	55,26	13,16	15,79	7,89	7,89
Gain a better image through devolutions/complaints' reduction	10,53	47,37	21,05	10,53	10,53
Gain a better image through devolutions/complaints' reduction	10,53	47,37	21,05	10,53	10,53

Another important observation is that 60% of respondent firms have some methods to obtain feedback from customers and gather information about customers' needs and expectations, which suggest a relative worry from entrepreneurs in order to look for customer's needs. The method more used seems to be direct meetings with clients.

However, as highlighted in literature, selling what customers need is not enough. In fact, as referred by Cruz e Carvalho (1992), quality and service are 2 inseparable elements: a good product associated with a bad service can't succeed. Thus it seems relevant to highlight that contrasting with this entrepreneurs' awareness about the importance of customers, data gathered also showed that only 43% of firms have a after-sales service.

Respecting to Quality Policy, the analysis of data collected evidenced that only 39% of firms have a quality policy well defined and documented. However, such as referred by Ganhão (1994), the quality realisation needs the integration of a certain number of elements which, if well articulated, allow to reach the desired objective. The main of this elements is Quality Policy, which gives the firms' intentions and directions regarding quality.

Thus, the collected information suggests a certain deficiency at the level of quality's policy definition. However, it has to be pointed out that, regarding firms that have affirmed to have one quality policy, 87,5% had also affirmed that this policy was well divulged at internal level, suggesting that firms that worry in delineating quality policy are conscientious about the necessity to divulge these guidance lines to everyone within the organisation.

Another important feature of quality systems deals with the quality manual. As stated by Ganhão and Pereira (1992), the quality manual is a document that allows a clear idea of organisation, responsibilities and procedures of quality management. The quality manual is therefore, in the opinion of the same authors, one basic key in the quality system. Thus, face to the importance attributed by many authors to the quality manual, the number of firms in the region that have such tool appears very reduced. In fact, only 14,3% of respondent firms had elaborated a quality manual. However, it is interesting to note that if we analyse only the firms that were being certified, only one didn't have a quality manual. Such observation is very important regarding benefits of ISO 9000.

From data analysis, another observation had been highlighted. In fact, only five of the respondent firms had a well documented quality continuous improvement plan. Such observation is worrying because it suggests a lack of rigour in the planning of quality improvement. Again, it is worth to highlight that analysing only the firms that were being certified, only one didn't have a well documented quality continuous improvement plan. Here again such observation is very suggestive regarding positive aspects of ISO 9000.

Such as stressed by Cruz and Carvalho (1992), "the existence or not of an autonomous quality department depends basically on the firm's dimension. The authors add also that, when firms are relatively small, instead of overloading the structure, the firm should consider the solution that consist in delegating the normal responsibilities of a quality department in an employee and to appeal eventually, in specific situations, to an external consultant. Face to these considerations, and given the Portuguese enterprise structure, the weak percentage (14.3%) of respondent firms in which there exists

a quality department would have been predictable. To confirm the possible relation between the existence or not of a quality department and the dimension of the company, a crosstabulation had between performed between both variables which revealed a statistically relevant relation using Pearson Chi-square (significance: 0.024). This result suggest that the existence or not of a quality department depends frequently on firm's size, maybe due to lack of resources in smaller firms, or even because in many small firms most of the decisions are centralised in the entrepreneur.

A further crosstabulation covering quality department variable and firm's being certified highlighted also a statistically relevant relation using Pearson Chi-square (significance: 0.000). In fact, it showed that only one of these firms didn't have a quality department.

In the opinion of some authors (for example Munro-Faure and Munro-Faure, 1994; Ganhão, 1991; Macdonald, 1994), one of the main underlying activities regarding corrective actions are the periodic audits in order to verify if the quality system still performs in accordance with what has been defined previously. In fact, as stated by Cruz and Carvalho (1992) periodic audits allow a control of the system's evolution over time through corrective actions when necessary. The data analysis highlighted that in the region of Beira Interior, only 14.6% of firms perform periodic audits in order to control the course of the quality system. This observation seems to suggest a great deficiency in the industrial sector of this region regarding quality.

Another important requirement in quality management deals with quality records, and this was also one of the aspects approached in the questionnaire. In fact, it was inquired if quality records were adequately identified and stored in order to be readily consulted when necessary. Answers obtained are synthesised in table 4. There, we can evidence that less than 30% of respondent firms use such practice in a systematic manner. Moreover, one can note a relatively significant percentage of firms whom never or almost never use this practice.

Table 4 - Periodicity of identification and storage of quality records

	% of Answers
▪ Always	27,0
▪ Sometimes	32,4
▪ Never or almost never	40,5

Data analysis showed that 72.5% of respondent firms use quality control methods; in fact, only one firm didn't use any quality control method applied to end-product.

However, as highlighted in Table 5, half of firms still use non-statistical quality control. Furthermore, it is worth to enhance that only 2 firms have a SPC (Statistical Process control) implemented. This is a worrying observation, since based in the philosophies of Deming, SPC' goal is the quality continuous improvement. In fact, CEP is based on the idea that quality improvement depends on process improvement. Firms cannot continue to work separating, at the end, the bad products from the good ones. It means that it is necessary to reduce or to eliminate the firm's dependence on large inspections, mainly due to its high costs.

It is also interesting to note that the main reason given from respondent firms that didn't use statistical quality control deals with the lack of qualified staff in the area of the mathematics/statistics and the high implementation costs.

Table 5 - Quality Control Methods used

	% of Answers
Non statistic Quality Control	50
Statistic Quality Control	
• Sampling	46.7
• Statistical Process Control (SPC)	6.7

6. FINAL REMARKS

The purpose of this research was to determine the general state of the Beira Interior companies' situation with respect to quality concerns. Thus, the situation of companies in this region, concerning quality practices, including all the relevant aspects related to quality improvement, was analysed.

Results showed that the quality management constitutes a major concern of firms in this region and is recognised as an important factor of their competitiveness. Thus, in the actual panorama of national industry, and face to a market growing in terms of expectations, data analysis suggested that Portuguese SME's are aware of the great importance that quality factor plays in firm's competitiveness.

However, although some companies have already undertaken some measures directed toward the quality factor, practices in course suggest some reflections:

- Deficiencies suggested at the level of quality policy, quality organisation and quality objectivity in companies make it difficult to implement measures in permanent and consistent manner in order to assure quality continuous improvement;
- Needs of education programs in quality areas are apparent.

Such observations suggest that even if SME's seem aware of quality's importance, many of these firms still didn't realise fully the implications of quality problematic. This observation seems to suggest a great deficiency in the industrial sector of this region regarding quality, subject which would be opportune to deep given its importance.

Data analysis showed that some firms seem to be already embracing some of the key features of TQM. However, the study suggests also a lack of organisation, a lack of structured thinking.

Regarding ISO 9000 it could be seen that all SME's were getting certified by themselves, and not forced by one of them customers. Such observation is very interesting, since it suggest that these SME are really worried and committed with quality. In fact, most of the answers from these firms focused on quality climate, quality continuous improvement and customers' satisfaction.

Finally, a further study would be opportune in order to check out the possible problems SME's are facing with quality implementation, since data gathered in this study suggest a great awareness for quality's importance.

REFERENCES

Bank, John (1994), *Gestão da qualidade Total*, CETOP, Mem Martins.

Cruz, Carlos Vasconcellos and Carvalho, Óscar (1992), *Qualidade - uma filosofia de gestão*, Texto Editora, 1 Ed., Lisboa.

Dale, Barrie. G. (1994), *Managing Quality*, Prentice Hall, 2 Ed., Londron.

Ganhão, Fernando Nogueira (1991), *A qualidade Total*, CEDINTEC, Lisboa.

Ganhão, Fernando Nogueira and Pereira, Artur (1992), A Gestão da Qualidade - Como implementa-la na empresa, Editorial Presença, Biblioteca de Gestão Moderna, Lisboa.

Halligan, Beate (1992), "ISO 9000 Standards Prepare You to Compete", *Industrial Distribution*, Vol. 1, nº 6, May, p. 100.

Inchaurtieta, Ramon Benguria (1991), "Calidad Total y Estrategia: Un camino a recorrer", *Boletin de Estudios Económicos*, Vol. XLVI - nº 143, August, pp. 211-221.

Juran, J. M. (1993), "Why quality initiatives fail", *Journal of Business Strategy*, Vol. 14, nº 4, July-August, pp. 35-38.

MacDonald, John (1994), *A Gestão da Qualidade Total com sucesso*, Ed. Presença, Gestão Essencial, Lisboa.

Monitor Company (1994), *Construir as vantagens competitivas de Portugal*, sob a direcção de Michael Porter, Ed. from 'Forum para a competitividade', Lisboa.

Munro-Faure, Lesley e Munro-Faure, Malcolm (1994), *La calidad total en accion*, Folio, Biblioteca de empresa, Barcelona.

Nevilles, John E., (1995), "Continuous improvement Process Teams", article appeared in *'TQM in Manufactoring and Service Industries' Discussion List* (Quality@PUCC.PRINCETON.EDU).

Ross, Joel E. (1993), *Total Quality Management - Text, Cases and Readings*, St. Lucie Press, Delray Beach.

Sanz, Ana Paula (1990), "Qualidade Total", *VESTIR*, nº 7 April-May-June, pp. 31-33.

Van der Wiele, Ton and Brown, Alan (1998), "Venturing down the TQM path for SME's", International *Small Business Journal*, Vol. 16, No. 2, Jan-Mar, pp. 50-68.

Van Ham, Kees J. (1991), "El movimiento Europeo De Gestion de Calidad", *Boletín de Estudios Económicos*, Vol. XLVI, nº 143, Agosto, pp. 223-231.

Wilmshurst, Trevor and Whitefield, Despina (1996), "Total Quality Management in Small Business – Small Business Saviour?", *Small Enterprise Research*, The Journal of SEAANZ, Vol. 4, Nº 3, pp. 65-81.