

# STUDY ON THE IMPLEMENTATION OF QUALITY MANAGEMENT SYSTEM IN SMALL MEDIUM-SIZED ENTERPRISES FROM THE CENTRAL REGION OF ROMANIA

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## Abstract

*With over 12% share of the national total, small and medium enterprises from the Central Region of Romania, play the role of one of the pistons of the economic engine and social development of this country, finding them in all fields. Even if the global crisis has affected the region, however lately there is an improvement in the situation, thanks to the support either from foreign investment or from the Romanian state. Therefore, these organizations are striving through proactive involvement and long-term vision, to detect effective ways of implementing existing systems based on processes, balanced investment in human skills, technical and technological competence. This paper investigates the operation of the quality management system and the research methodology consists in the investigation based on online interviews of a total of 191 organizations from Central Region of Romania, with certified quality management system according to ISO 9001. The research was conducted during six months, the companies accessing the online questionnaire, specially created by the author, data being retrieved and analyzed by one of the most powerful and popular software, SPSS 17.0. The paper highlights some important factors that influence the operation of quality systems implemented in the SMEs of this region in order to increase their competitiveness.*

**Key words:** quality, standards, QMS certification, SMEs, SPSS program

## 1. Introduction

It is obvious that the onset in 2008 of the world economic and financial crisis has generated a dynamic market and highlighted the competitiveness of organizations that have managed to overcome true obstacles. But how can you get into a fierce competition, after that crisis, how can you be compete? Solving the problem lies in the quality of goods and services, but it does come by itself.

The market is so dynamic that today's latest generation products that bring customer satisfaction, will tomorrow probably no longer have the same value. Obviously, you need continuous improvement, a new organizational culture and a new style of management, but they are not isolated issues.

And then the question is how to combine the two solutions and how to proceed, not only to survive but also to look ahead to performance. The answer definitely lies in the quality management system (QMS) as a subsystem of the organization's

management.

But which quality management system has proved and is proving to be the most viable to prevent obstacles; put a diagnosis in case of problems, to “cure” and to eliminate non-conformities? Nothing more simple: quality management system according to ISO standard requirements, which demonstrated through examples of companies that have managed to overcome the crisis, that it can be the successful formula or system that “fits like a glove”, in periods of stability as well as those at risk [12]. According to Moldovan [6], quality management systems should be seen as systems specific to the organizations; they are not uniform and therefore cannot be standardized. Recommendations and general directives get standardized, not to “replace product-specific quality standards but as a supplement to ensure compliance by improving the capacity of the company to achieve quality”.

ISO standards can help large enterprises and small companies (SMEs), offering solutions and

bringing considerable advantages in almost all existing fields [13]. In Central Romania a lot of effort has been done for training employees in quality assurance [7] by employment of activity based training [8] and by using new learning environments [9].

Research question focuses on the operation of the quality management system, the identification of some factors that influence the operation, the extent and benefits of these systems implemented and developed in the SMEs of this region.

## 2. Relevance of the research question

Research problem is relevant in the following aspects:

- SMEs represent around 99% of all enterprises in Romania, and in the Central Region of Romania is about 70% of the number of staff;
- because more and more customers request that quality management systems (QMS) be certified or recertified, suppliers are seeking effective solutions to implement and develop these systems;
- implementation, development and improvement of QMS, can reduce or eliminate the weaknesses and inconsistencies of existing processes in the organizations;
- currently, external support and internal support from the Romanian state, through various projects and grants can support investment [13].

## 3. The research methodology

Descriptive aspects of the research have materialized in the investigation based on online interviews of a total of 191 organizations from Central Region of Romania, with certified quality management system according to ISO 9001. The target group was the small and medium companies (except micro), aiming at how ISO 9001 affects products/services, activities, processes, human resources. We did not take into account micro-companies due to the fact that these companies with ISO certified quality management system represent an extremely small number compared to the total number of SMEs

The research was conducted during six months, the companies accessing the online questionnaire, specially created by the author, data being retrieved and analyzed by one of the most powerful and popular software, SPSS 17.0.

In Kamer's view, "one of the problems to be solved when organizing a sample research, is the rational sizing" the requirement that the sample size is as small considering the economic criteria [2]. With no centralized database of companies in Romania, whose quality management system is certified

according to ISO standards, we have reported to the total number of SMEs in the region, considering it the research population.

According to the data provided by the Chambers of Commerce and Industry of the counties of Central Regional, the National Agency for Small and Medium Enterprises and Cooperatives (ANIMMC), the County Departments of Statistics [14], we have identified a population of 8,022 small and medium businesses operating in this region of Romania.

To determine the sample size for random sampling, we have considered both the precision of the estimation (error) and confidence interval.

In order to obtain a significant sample we opted for proportional stratified sampling, method through which a population is divided into subpopulations, called layers, following after that the selection of the main samples. The studied population (N = 8022) was divided into layers based on the activity and size of the company.

Given the weighting in the three sectors (industry, trade, services) the sample was composed of 191 companies, of which 159 small and 32 medium-sized.

Figure 1 and Figure 2 shows sample structure by: county, employment, industry and position of the respondents in the organization.

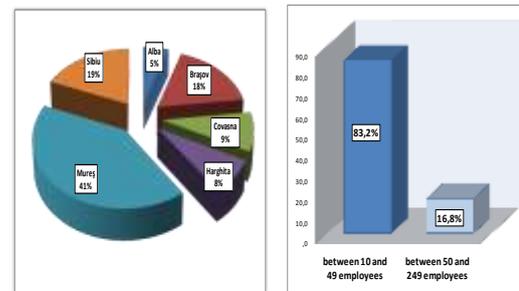


Fig. 1: Sample structure by county and employment

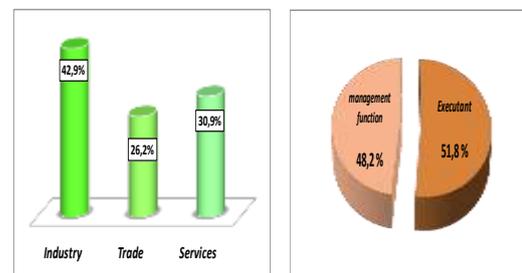


Fig. 2: Sample structure by industry and position of the respondents in the organization

## 4. Analysis of the status of QMS implementation

It is very important that the *quality policy* is communicated to all the employees, either by training or by displaying it in every room of the organization or by publishing it on the website. In the case of

SMEs, due to lower organizational structure which provides direct connections between management and employees, there is the advantage of a more easy way to implement the quality policy [10].

From the organization's policy regarding quality, derives **quality objectives**, which may be general or specific and are compliant with the organization chart of the company, taking into account the SMART principles: **S** - Specific, **M** - Measurable, **A** - Achievable, **R** - Realistic & relevant **T** - Time based.

In the questionnaire we tried to find out to what extent policy and quality objectives are known, given their importance, and if it is taken into consideration to achieve these goals (table 1).

Table 1. Crosstabulation: Are you known for quality policy and objectives in the organization in which you work? / Do you consider the objectives to be achieved now?

		Do you consider the objectives to be achieved now?			Total
		undecided	agree	strongly agree	
Are you known for quality policy and objectives in the organization in which you work?	disagree		100,0%		100,0%
	undecided	6,3%	91,7%	2,1%	100,0%
	agree	7,3%	79,7%	13,0%	100,0%
	strongly agree			100,0%	100,0%
Total		3,3%	46,7%	50,0%	100,0%

Using the SPSS function to find a various distributions, it appears that 100% of respondents who answered “yes” in terms of knowing the quality objectives, have also answered “yes” to the question “Do you consider the objectives to be achieved now?” This shows that for these respondents there are positive prospects, an extra point to be motivated in the activities of the organization.

We have also proposed to evaluate the perception of the employees regarding continuous improvement as a permanent objective of the organization (fig. 3): **Is the continuous improvement (PDCA - plan, do, check, act) a permanent objective of the organization?**

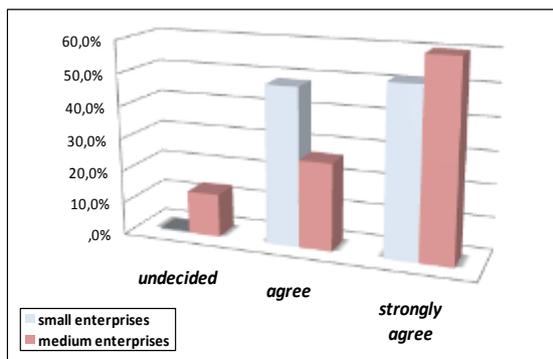


Fig. 3: Is the continuous improvement a permanent objective of the organization?

From figure 3, it can be seen that the companies are very concerned about continuous improvement within them.

The **quality manual** describes the QMS, more specifically describes clearly how the responsibilities, activities, processes and documentation of the organization are treated [1].

The procedures provides information about how a process takes place, it will answer the questions: **who?, what?, when?, how?, where?**, information that can be contain text, flowcharts and tables. From the questionnaire we wanted to know if the quality manual and procedures for QMS are well written and easy to understand, making a comparison between the responses of small and medium enterprises (fig. 4).

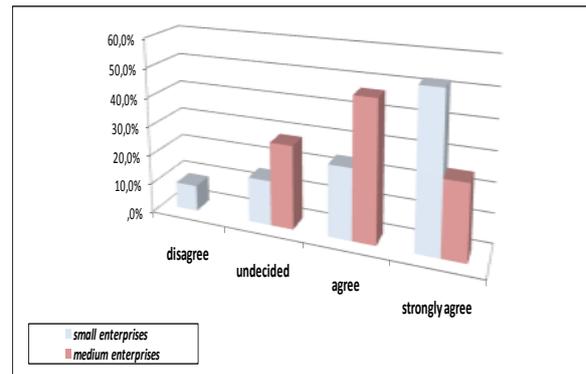


Fig. 4: Do you consider that the quality manual and procedures for QMS are well written and easy to understand?

From the respondents' answers it results that the quality manual and procedures are easy to understand in a large and very large extent. In a comparison between the two types of enterprises results that there are no problems understanding the quality manual and procedures in any of the two businesses

Next we wanted to find out if employees believe that the implementation of computer systems specific documentation developed according to ISO standards brought added value.

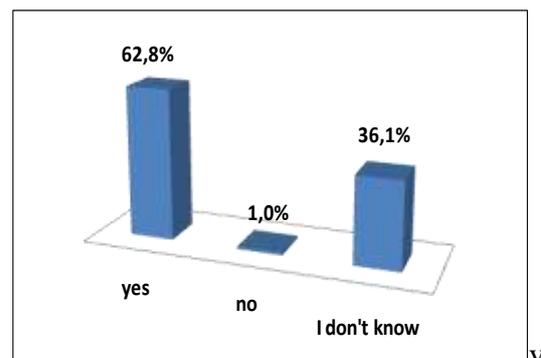


Fig. 5: Did implemented computer systems brought value?

As shown (fig. 5), 62.8% agree that these systems have brought added value, so we decided to check the connection between the answers to the two questions.

Table 2: Crosstabulation: To reduce the amount of paper, are there implemented computer systems specific documentation developed by ISO standards? / Did implemented computer systems bring added value?

		Did implemented computer systems brought value?			Total
		yes	no	I don't know	
To reduce the amount of paper, there are implemented computer systems specific documentation developed by ISO standards?	yes	99,1%		,9%	100,0%
	no	15,5%	3,4%	81,0%	100,0%
	I don't know	2,3%		97,7%	100,0%
Total		62,8%	,5%	36,7%	100,0%

By finding distribution variation in SPSS, it appears that 99.1% of respondents who answered “yes” regarding the existence of information systems in companies have the same positive response on the added value of this, another reason to find effective implementation solutions with significant advantages.

Companies that had as motivation *customer focus* in their efforts made to certify the quality management systems were more aware of quality, having the best chance of success. According to Păunescu [11], customer orientation is justified for certain reasons: “growing demands, enhancements introduced by competition to overcome innovative companies, evaluating changes by the customers”.

If the customer is satisfied, he will return and also will make recommendations to other potential customers. The indicator showing his confidence in an organization is precisely the indicator that evaluates his satisfaction. No matter how and on how many levels this assessment is made, it is imperative to act in this direction, so we wanted to find out if customer satisfaction is measured periodically, depending on the size and scope of the company (fig. 6 and fig. 7).

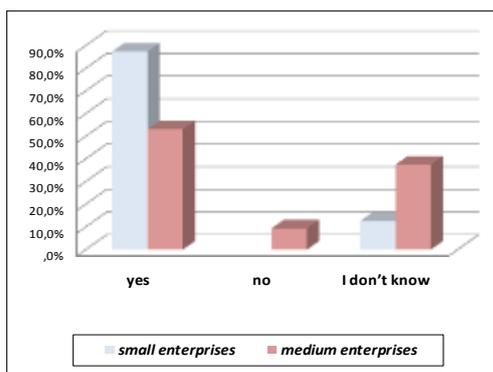


Fig. 6: Is customer satisfaction measured periodically? (depending on the size)

From the charts it appears that employees of the two types of companies, in proportions greater than 50%, say that customer satisfaction is measured regularly.

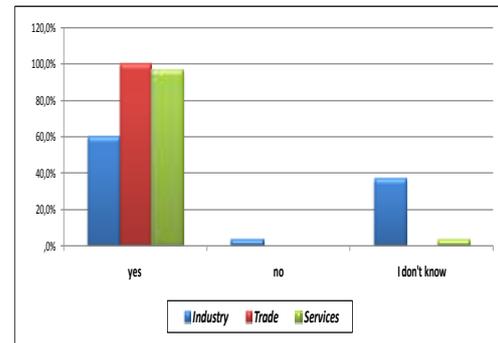


Fig. 7: Is customer satisfaction measured periodically? (depending on the scope of the company)

If a customer files a complaint to the certification body, regarding the products of a company, and if after an audit, major non-conformities are found, this certifying body may suspend/withdraw the certificate of conformity of QMS to ISO. Because we considered this fact of great importance, we wanted to find out if employees know this detail (fig. 8).

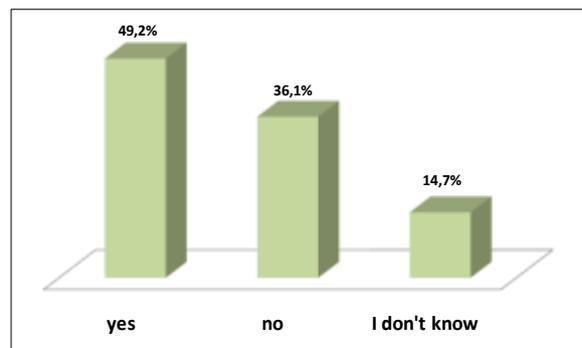


Fig. 8: Do you know that if a customer files a complaint / formal complaint related to the products / services of your organization , ther ISO certification body, following an audit, may suspend / withdraw the certificate?

We note that the percentage of those responding “yes” is almost 50% and I consider important that those who ticked answers “no” and “not responsible” should also take note and act accordingly.

## 5. Conclusions

According to Marian [4], ISO model as a reference frame in organizing a quality management system, enables identification of the main sources of dysfunctions within companies by removing them so that it could prevent defects, scrap and poor quality.

The main contribution of the paper consists in concluding as regards the success in developing and

improving QMS in SMEs that is guaranteed in Central Region, by some factors:

- knowledge of the employees of the principles, policy and quality objectives, targets considered by them to be achieved, which shows that employees are optimistic in regard with the prospects of the company. The results of the development of the quality management system are presented to the employees because they are involved in the development and improvement of it. At the same time there is a perception of continuous improvement (plan-do-check cycle-act) as permanent objective of the organization;
- we also found that most employees know that the level of customer satisfaction is measured, they know the interdependencies between customer satisfaction and loyalty, and that there is a link between customer satisfaction and that of their own;

ISO 9001 certification must direct the company towards “a competitive way of doing business”, an internal organization that creates an appropriate framework for creating competitive products/services compared to those provided by EU companies” [3]. In the Central Region of Romania, there are a lot of small and medium companies that are competitive on the foreign market [5] and play the role of one of the pistons of the economic engine and social development of this country.

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