

## Barriers to the Implementation of the Quality Management System in Small and Medium-Sized Enterprises

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### Abstract

*The study aims to highlight the barriers faced by small and medium enterprises (SMEs) in implementing the quality management system (QMS). For this purpose, we built the variable "Barriers in the implementation of QMS", composed of 13 primary variables. The statistical analysis was performed on a sample of 62 SMEs in the field of industrial production (micro-enterprises were not considered), from Romania, which implemented this system in accordance with the requirements of the international standards ISO 9001: 2015. As research methods, we used a survey based on the questionnaire and the interview to identify the main difficulties in implementing QMS. The results indicate that SMEs face many barriers in the implementation of QMS, which negatively affect both the effectiveness of quality management practices and organizational effectiveness.*

**Key words:** quality management, quality management system, barriers in QMS implementation, quality improvement

**J.E.L. classification:** M13, M14, M20, M21

### 1. Introduction

Small and medium-sized enterprises (SMEs) have an essential role in modern economy, therefore their ability to survive, to stay competitive and to act so their results meet the highest standards of quality is extremely important, both micro-economically and macro-economically. For this purpose, they have to elaborate and implement effective strategies among which the strategy of improving quality has a major role.

Regardless of their field of activity, SMEs are looking to gain competitive advantage by improving quality on a more and more competitive globalized market. The client-oriented policy has become a crucial factor to ensure competitiveness in an environment where the client's needs and requests get various and bigger.

In the field of quality improvement, getting results that meet high standards represents an important condition to ensure competitiveness. This is true not only for large enterprises, but also for SMEs, which are, in most of the cases, goods and services providers for the first ones. In this context, total quality management (TQM) is considered to be a valuable tool for permanent quality improvement.

In the current economic context, outlined by an extremely competitive and dynamic global market, SMEs are in search of tools which give them the opportunity to be successful on the market. Among these tools, TQM facilitates the improvement of their internal processes and the quality of their products and services which leads to significant improvement of the clients' satisfaction and loyalty, causing considerable effects in increasing the sales. (Garengo, 2009; Ghobadian, Gallear, 1998).

At the same time, implementing and certifying in SMEs the quality management system (QMS) on the basis of ISO 9001 international standards, along with the criteria for excellency embodied in the Deming, M. Baldrige, EFQM prizes for quality, and with J.Juran prize starting with the year 2000 (<http://www.fundatia-juran.ro>), make possible the differentiation of the competitors, which

facilitates their success in their field. Compared to large enterprises, SMEs have adopted a slower pace for implementing a QMS, according with TQM, on the basis of ISO 9001: 2015 international standards published in Romania as SR EN ISO 9001:2015.

Beginning with the peculiarities of SMEs, the scholarly literature points out a series of effective and efficient strategies to improve quality at all the levels of an enterprise. They all start with the idea of orienting the enterprise towards satisfying the clients' needs and expectations, which gives them a competitive advantage. The most common among these are: leadership; working in teams to more effectively solve the quality problems; the employers' innovations; the implementation of ISO 9000 international standards on the basis of the TQM principles. (Ghobadian, și Gallear, 1996, Quazi and Jacobs, 2004; Olaru, 2004; Oakland, 2004; Ilies, Crisan, 2011; Psomas, Kafetzopoulos, Fotopoulos. 2013).

As a philosophy of continuous improvement, TQM has become an essential instrument to ensure competitiveness, a crucial request for all SMEs, regardless of their sector of activity.

Implementing a QMS on the basis of ISO 9001:2015 standards in SMEs helps the managers to understand and apply the requests of the improvement process in their activity.

## 2. Literature review

In the last decades, regardless of their size, enterprises have been confronting decisive changes dictated by the consumers' growing awareness of quality, cost, product design, other functional parameters of the product, the outbreak of technology, the globalization of businesses etc. As a consequence, the majority of the challenges faced by SMEs are: quality improvement; assimilation of new products; efficiency; competitiveness; cost; on time delivery. (Garengo, 2009).

Considering the opinion of more authors, within any organization, including SMEs, the effects of successfully implementing TQM principles are: quality improvement of processes, products and services; improvement of the employees' involvement; productivity rise; focus on satisfying the clients, employees and other stakeholders' needs and expectations; promoting teamwork; improving the clients' satisfaction and loyalty; improving competitiveness; focus on the process; promoting organizational values among which quality improvement is a crucial element; developing staff's potential by implementing effective training programs; creating and developing active partnerships with the main stakeholders; empowering all the employees to take decisions and approach job related issues. (Powell, 1995; Ghobadian *et al.*, 1998; Tricker, 1999; Prajogo și McDermott, 2005; Ilies, Crisan, 2011; Zimon, *Gajewska*, 2017).

The major barriers SMEs have been confronting in order to implement TQM are:

- managers' lack of competences and experience;
- weight on short term objectives;
- lack of technical command in the field of quality management;
- limited financial resources;
- lack of basic infrastructure to support the implementation of TQM;
- insufficient qualified personnel (Abusa & Gibson, 2013; Crisan, Ilies, 2011).

To successfully implement TQM in SMEs, the leadership commitment, the employees' empowerment and involvement, staying close to the client, being flexible, as well as radically changing the organizational culture at times are considered to be pivotal factors. (Powell 1995; Zairi, 2013).

Even though SMEs represent an important part of the economy of each country, many of them have problems with the successful implementation of the best practices of TQM because of the:

- lack of employees' involvement and actual participation to the efforts of improving quality;
- lack of managerial commitment and motivation;
- quality not being perceived as a major priority;
- the traditional conception that quality has a price;
- lack of effective cooperation between providers and distributors;
- not involving the clients in the improving quality processes. (Djerdjour and Patel, 2000).

This is why the successful implementation of TQM requires a cultural transformation that would assure: the involvement of all employees at any organizational level, a good work team spirit for all employees, increasing the employees' decision power, involving the clients in the quality improvement programs.

With regard to the TQM implementation, there are studies showing that SMEs can adopt TQM as efficiently and effectively as larger enterprises, putting a stress on using proper instruments for the continuous quality improvement, teaching, training and benchmarking. (Ahire and Golhar, 1996). At the same time, there are researchers who identify a series of barriers to an effective applying of TQM. Many of them refer to the organizational culture and some of its components: leadership, general management, quality, finance and training. (Schneider *et al.*, 2013).

As TQM puts an emphasis on client orientation, teamwork, continuous quality improvement and systematic process administration, TQM practices can support managers to administrate more effectively and efficiently their organizations with the purpose to improve operational performances and to achieve high quality standards during the production process. (Oakland and Porter, 1996). Even though the concept of TQM has risen many debates, there are few researchers in the scholarly literature who approached the issue of its implementation in SMEs in the last two decades. Still, there are surveys sustaining the idea that TQM could be successfully implemented in SMEs. (Ghobadian & Gallear, 1996; Quazi & Padibjo, 1998; Temtime & Solomon, 2002; Psomas, Kafetzopoulos, Fotopoulos. 2013).

Simultaneously, there is evidence which highlights the negative impact of TQM on the performances of an SME. (Ilies and Crisan, 2011; Prajogo, 2011).

Many researchers have pointed out the fact that TQM can help SMEs in being more efficient, effective and market-oriented. (Ahire și Golhar; 1996; Bayati & Taghavi, 2007; Temtime & Solomon, 2002). Deming (1986) considers that the application of TQM ensures:

- qualitatively improved products and services;
- low costs;
- satisfied clients and employees;
- improved financial performance. (Temtime & Solomon, 2002).

Assumed to be applied in larger organizations, TQM bears some problems when applied in SMEs if we are to take into consideration the complications arised by approaching its strategic dimension. The new version of Noua ISO 9001: 2015 standards merges better the requests of implementing QMS on the basis of ISO 9001 for the improvement of cooperation in the logistic chain and of the leadership commitment. (Ghobadian & Gallear, 1996; Psomas, Kafetzopoulos, Fotopoulos. 2013).

Managers are not interested to share their vision of implementing TQM with the employees and to set objectives to adequately and realistically improve quality and performance indicators.

There is a series of authors who believe that TQM in SME is inadequate, as it can be successfully applied only in larger enterprises. As for SMEs, they support the idea that there is a bit of confusion regarding the basic concepts and its success factors, based on the following opinions:

- TQM implementing and putting into practice requires an excessive amount of time and other resources;
- there is too much focus on processes and non-financial aspects of the performance, which might imply that it doesn't adequately define quality as an organizational goal;
- there are problems in adapting HR practices to TQM principles;
- TQM implementation is not suitable for the SMEs features. (Ghobadian & Gallear, 1996).

Those who are in favor of the adequateness of TQM implementation in SMEs appeal to the idea that in most of the cases, TQM implementation is based on the context and experience of larger enterprises. (Yusof și Aspinwall, 2000).

Even though the literature identifies a large range of TQM practices considered to be effective, one has to take into consideration that in this field there is no consensus over one well-defined set of practices. This is due to the characteristics of the SMEs, the company's field and the market. To conclude, we can acknowledge that the practices of TQM are very different, not only in the production sectors, but also within the same sector.

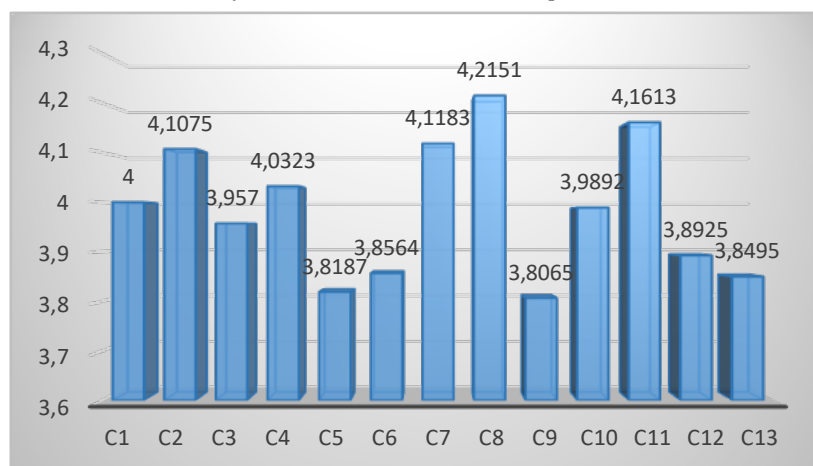
### 3. Research methodology

The empiric study was performed over a sample of 51 SMEs belonging to the production sector, excluding micro-enterprises, SMEs which implemented QMSs based on the international standards ISO 9001:2015, but of which only 8 (15,68%) are certified. The purpose of this study was to identify the main barriers in implementing and putting into practice QMS with the purpose to improve its effectiveness. The employed research tools were the questionnaire and the semi-structured interview. For credibility and quality of information, we addressed the personnel in charge of quality management in these SMEs, who have the training and the accountability for effectively putting into practice and maintaining QMS according to the standards. The main source of our data is represented by the answers offered by the interviewees to the 16 questions of the questionnaire and semi-structured interview, organized with 14 persons. The questions from the questionnaire have been measured according to a Likert scale from 1 to 5 (1- total disagreement; 5- total agreement). For this survey, we have employed the "Barriers to implementing QMS" indicator, represented by the aggregate variable "*Br.QMS*", which comprises 16 adequate items to the purpose of the study. At the end of the reliability test, 3 items have been eliminated and we have obtained an aggregate variable having a 0,834 Alpha Cronbach coefficient, which expresses a good internal consistency. For data processing, analysis and interpretation we have used descriptive statistics indicators and correlation analysis for linear regression.

### 4. Barriers to implementing and putting into practice a QMS

With the purpose of identifying the main barriers to implementing and putting into practice a QMS, variable *Br.QMS* has been created. It is relevant due to its internal coherence, with a Cronbach's Alpha coefficient 0.803. The structure of the variable is presented in figure 1.

Figure no.1. The structure of the variable „Barriers to implement QMS”



Source: Authors' contribution

Based on the data from tabel 1, the mean variable „*Br.QMS*” is 4,006, for a standard deviation of 0,317 and a standard error of 0,032, which shows a that our mean variable is quite close to its real value considering the total population. Therefore, the real mean value is somewhere between 3,942 ( 4,006 – 0,064) and 4,070 (4,006 + 0,064). The variation coefficient (*cv*) 0,0822404 shows that the statistic population on which this variable has been determined has a good level of homogeneity.

Table no. 1. tabstat Br\_impl\_QMS , statistics( mean count sd semean cv)

variable	mean	N	sd	se(mean)	cv
Br.QMS	4.006021	93	.3173091	.0329034	.079208

Source: Authors' contribution

According to our respondents, the barriers encountered to implementing and developing QMS in line with ISO 9001 are:

- focusing more attention on main, routine activities such as production, sales, marketing, etc. and less on activities that ensure systems and processes improvement, C8, (4,2151);
- lack of short-term benefits, C11, (4,1613);
- insufficient knowledge in quality management and application of ISO 9001 requirements, C7, (4,1183);
- compliance with the main stakeholders' requirements, C2, (4,1075);
- insufficient knowledge at an adequate technical level about quality management, C4, (4,0323);
- the fact that the client satisfaction based on quality improvement doesn't have the expected results, C9, (4,0000);
- high costs for implementation and maintenance of QMS putting into practice, C10, (3,9892);
- lack of specific expertise to implement and put into practice a QMS, C3, (3,9570);
- resistance to change, C12, (3,8925);
- more focus on documents, less focus on results, C6, (3,8564);
- difficulty in getting the employees involved and keeping up their morale, C13, (3,8495);
- lack of strong commitment of the top management, C5, (3,8187);
- constrains in providing human and financial resources, C1, (3,8065). (Annex.1.1)

Moreover, the interview proved the existence of these barriers and it also proved difficulties in adapting QMS to ISO 9001:2015 requirements. Besides, it showed that 42,85% of the respondents consider that the general nature of some of the ISO 9001:2015 requirements cause difficulties to adapt it to the SMEs peculiarities; 35,71% of the respondents invoke resistance to change; 28,57% of the respondents invoke difficulties to maintain the employees' morale; 14,28% of the respondents accuse the lack of experience in approaching formalized systems.

With reference to QMS implementation, maintenance and certification costs, on the basis of ISO 9001:2015, 64,28% of the respondents complain not only about high costs, but also about the existence of some unprofessional consultancy services in this field. Furthermore, 71,42% of the respondents show little interest in the initiatives of the enterprise management , for periodical determination and analysis of quality costs, and 42,85% denounce the lack of experience in quality internal audit.

To sum up, the interviewees say that the most invoked barriers to comply with the ISO 9001:2015 norms and to introduce new processes and procedures in SMEs according to the QMS requirements based on ISO 9001:2015 are:

focusing attention on main, routine activities such as production, sales, marketing, etc. and not on activities that ensure systems and processes improvement;

- focusing more on documents;
- the managers' and employees' lack of commitment;
- lack of trust of having potential benefits after implementing a QMS;
- lack of specific expertise to implement and put into practice a QMS;
- insufficient knowledge in quality management and application of standards;
- compliance to all the stakeholders' requirements and lack of experience in quality internal audit;
- relatively high costs of implementation and putting into practice.

Statistic relationships between the aggregate variable *Br.QMS* and the compounding variables. In order to establish to what extent the primary variables for *Br.QMS* significantly correlate among them and with the aggregate variable, we make use of the results from Table 2 and the correlation coefficients obtained on the basis of an econometric STATA model.

According to Evans (1996), correlation, as association static relationship among variables, implies the following intervals for the absolute value of „*r*” correlation coefficient: 0,00-0,19 (very weak); 0,20-0,39 (weak); 0,40-0,59 (moderate); 0,60-0,79 (strong); 0,80-1.00 (very strong).

Excepting the regression coefficients of the variables considered in pairs C6-C8 (0,2508); C9-C11 (0,2785); C9-C12 (0,2203), all the other coefficients are higher than 0,30, which is a proof of the fact that there are positive and significant correlations for all the other pairs of variables.

Therefore, we can opine that the correlation/association static relationships of the aggregate variable *Br.QMS* are significant, positive and:

- very strong with the variables: the customers’ satisfaction based on quality improvement doesn’t have the expected results (C9); the lack of specific expertise to implement and put into practice a QMS, (C3); insufficient knowledge at an adequate technical level about quality management, (C4); lack of strong commitment of the top management, (C5); more focus on documents, less focus on results, (C6), (the coefficients are ranged between 0,8242 and 0,9423);
- strong with the variables: compliance with the main stakeholders’ requirements, (C2); lack of short-term benefits, (C11); resistance to change, (C12), (the coefficients are between 0,6352 and 0,7889);
- moderate (acceptable) with the variables: difficulty in getting the employees involved and keeping their morale, C13, (3,8495); focusing attention on main, routine activities such as production, sales, marketing, etc. and not on activities that ensure systems and processes improvement, (C8); constrains in providing human and financial resources, C1; (the coefficients are between 0,3178 and 0,4789). (Table 2).

One of the reasons of this failure of the implementation and putting into practice a QMS, underlined by numerous respondents, refers to the fact that SMEs mostly appeal to consultancy services, which are highly costly, therefore a QMS focuses more on conformity and less on customer’s satisfaction, an essential premise for the success of the enterprise and for keeping the certification. Under these circumstances, a QMS doesn’t sufficiently facilitate the relationship with quality performance. The lack of knowledge in the field is another reason, knowing that many SMEs don’t have a well-trained manager/a person in charge who puts a stress on adequate and efficient managerial practices meant to improve quality.

With reference to the lack of specific expertise in quality management and application of ISO 9001 standard, it can be mostly ensured by a specific and professional training that would determine an increase of motivation and an effective involvement of all the employees in searching the solution to quality. At the same time, responsibilities of those involved in the process of quality improvement should be established and shared out.

Besides this, we have to add the lack of formalized strategies and policies that have clearly defined objectives, especially in small enterprises (with less than 50 employees). Referring to the quality management training, it has been done mostly by self-development. According to our study, 57,14% of the respondents declared that the training had been done with the purpose to obtain the “quality manager” and “quality auditor” certificates, without showing interest towards this after that.

#### 4. Conclusions

In order to eliminate or even eradicate the problems generated by the barriers in implementing and putting into practice a QMS in the SMEs from our survey, the management of the enterprise has to take into account the following aspects:

- clearly defining on long term the QMS objectives and requirements, on the grounds of ISO 9001:2015, in order to improve customers’ satisfaction;
- establishing the roles and responsibilities for all the members of the organization;

- promoting a strong commitment to compliance with the QMS requirements at all organizational levels;
- ensuring leadership competencies to communicate and share with the employees and stakeholders the issues of QMS effectiveness improvement;
- adequately promoting a quality culture, that would sustain the implementation, putting into practice and maintenance effectiveness of a QMS;
- process-oriented approach for the QMS implementation, from a perspective that would take into consideration the needed resources, SMEs features and expected results.

The solution to all these problems requires firstly the awareness of the top management and other employees about the importance of QMS effective performance on the basis of ISO 9001:2015 requirements and carrying out the necessary organizational changes to achieve the objectives, the changing of the leadership style and behavior being included.

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