

Multidisciplinary  
SCIENTIFIC JOURNAL  
OF MARITIME RESEARCH



University of Rijeka  
FACULTY OF MARITIME STUDIES

Multidisciplinarni  
znanstveni časopis  
POMORSTVO

<https://doi.org/10.31217/p.33.1.2>

# Improving Competitiveness of Small and Medium-Sized Enterprises with the Application of Quality Management System

Goran Kutnjak, Dejan Miljenović, Ana Mirković

University of Rijeka, Faculty of Economics and Business, I. Filipovića 4, 51000 Rijeka, e-mail: [goran.kutnjak@efri.hr](mailto:goran.kutnjak@efri.hr); [dejan.miljenovic@efri.hr](mailto:dejan.miljenovic@efri.hr); [ana.mirkovic@gmail.com](mailto:ana.mirkovic@gmail.com)

## ABSTRACT

In a modern global economy, small and medium-sized enterprises (SMEs) have inviolable importance and inclusion in the overall social development and economic growth. Regarding the high share of SMEs in the total number of companies, given the number of employees and the share in export orientation, the question of SMEs existence, as well as their market share and competitiveness in the global environment, represents prime relevance to any national economy. Therefore, the issue of quality becomes a critical component of achieving competitiveness in delivering products and services to their consumers (customers.) Due to this extremely delicate issue, each company establishes and implements a systematic process relationship or a quality management system as a part of its general management mechanism. This is a reason for SMEs management to strategically decide on the challenges of introducing a quality management system; thus, to improve their competitiveness on the domestic and foreign markets, which is a very demanding, exhaustive and time absorbing process requiring detailed preparation and collective engagement. The basic reasons for applying a quality management system are apostrophised in any business objectives – improving business processes, product quality and services, increasing spending as a factor of developing higher market share, better reputation (image) and sustainable business results. Due to the measurable quantitative and qualitative attributes and features that can significantly enhance the introduction of quality management systems into practice of SMEs, numerous studies have been carried out, some of which are conducted within the last two decades. For the authors, this was an initiative to conduct a survey, within this paper, in the Primorsko-goranska county (Croatia) during the month of July 2018, in which a number of SMEs were analysed in the crucial areas of quality management systems. The authors' objective was to assess the viability of SMEs regarding their application of a quality management system. The basic hypothesis was that introducing quality management systems into SMEs contributes to their foreign competitiveness i.e. strengthening their export activity in general. Beside positive outputs of applying quality management, the authors' research presented in this paper also established some relatively high and negative quantifications in relation to the application of the quality management system. Such outcomes represent justified reasons for future scientific research in this area.

## ARTICLE INFO

Review article  
Received 14 January 2019  
Accepted 6 February 2019

### Key words:

Competitiveness  
Small and medium-sized enterprises  
Quality  
Management  
ISO 9001:2015

## 1 Introduction

Entrepreneurship has an acceleration function for the entire national economy performing as a key element in generating growth and creating new jobs, generally increasing the competitiveness of the whole society. Importance and complexity of entrepreneurship delivered by SMEs manifests in many factors from economic, technological and social, to employment, development, and stability of society. Development of entrepreneurship

strengthens the economy overall output power with an objective of achieving high material independence and citizen's life standard. It is a constant challenge to remain competitive, to deal with technology and the pace of growth in competitive countries [1]. The quality of products and services based on rational and efficient quality management of overall business processes is definitely one of basic competitive prerequisites. According to the latest report of the Centre for Small and Medium Enterprises and Entrepreneurship Development (CEPOR) conducted

in the Republic of Croatia during 2016, SMEs accounted for 99.7% of the total number of enterprises, with 69.2% of structure in total employees' number and participating in total exports with 50.3% [2]. Respecting the given data, it is obvious that the importance of the SMEs for one economy is unquestionable, hence encouraging their further growth, expansion and market competitiveness. To increase the realization of such highly valued indicators, it is necessary to improve and enforce the implementation of quality management system in Croatian SMEs.

Business practice confirms that quality management systems are more commonly integrated in large companies, but also that the advantages of introducing quality management systems are far more pronounced in SMEs, which by implementing these systems achieve significant internal and external competitive advantages [3]. The concept of quality is quite broad and it may imply significant doubts. In order to better understanding the interpretation of the quality, theoretical views on quality are divided in two groups: 1) managerial perspectives and 2) critical points of view [4]. Managerial perspectives are interpreted as a phenomenon that can be managed, while in critical points of view in a business form it is also derived through sociological and political domains. These domains therefore, impact business. Sometimes the prevalence of price in consumer's analysis is a key factor of gaining competitive advantage, while consumers also increasingly analyse some other business elements, especially quality management. Consumer quality experience, therefore, becomes one of the company key strategic goals and the key factor of its competitiveness. The introduction of quality in the function of improving the business system is becoming more and more frequent, so, by this analogy, the concept of quality management in organizations is justified for analysis. Achieving a satisfactory level of quality reflects in the improvement of all segments of the business process, while their improvement results in satisfying the needs of all interest-influencing groups (the stakeholders). Enterprises that incorporate quality into their business philosophy produce high quality outputs (for example Toyota), ultimately resulting in improved market competitiveness.

In the context of SMEs that are facing numerous obstacles on their path of expanding on new markets, it is emphasized that the very establishment of a quality management system makes SMEs more competitive in international (global) environment. Opening up the European market to small and medium-sized entrepreneurs from Croatia has led to encouraging export activities and an increasing number of SMEs penetrating foreign markets. In the elements of international competitiveness, quality management systems are also considered to be a key driver of success. Furthermore, foreign partners expect from SMEs whom they cooperate with to have implemented systems of general quality guarantee. The introduction of a quality management system, which is extremely demanding, complex and time-consuming process, makes

it simpler later for any company to realise a solid market affirmation. Acquiring quality leads to a measurable valuation of products and services, as well as to the evaluation of quality maintenance. In Croatia, the trend of quality-grading in business is in the upstream phase, and companies that have been working on the introduction of an effective quality management system are experiencing a growing number of benefits in their operations outweighing the initial costs caused by the introduction of the system [5]. Quality in business operations may be ensured by several models, most notably by implementing generally and internationally accepted standard ISO 9001:2015. This system is also the most commonly certified quality management system, and for the companies implementing it, it is one of the ways of improving competitiveness in the entire benchmark or industry sector. In this paper, the authors have discussed and tested different variables related to certified quality systems.

## 2 Correlation of Quality Management Based on Systematic Approach and ISO Standards

To achieve quality as an objective of business organization, certain models of managing human resources have also to be implemented. Efficient management models include quality issues regarding arrangement, procedures, processes and other means relevant for handling quality in a measurable manner. A regular management process and organization are prerequisites of achieving goals of business quality. According to Skoko [6], quality management represents a broad group of activities related to general management functions where policies, goals and responsibilities related to quality are being constantly defined. Achievement of these goals is based on a broad set of management activities including planning and monitoring, ensuring and quality enhancement [6]. The term of "Quality Management" implies business performing related to quality objectives. In modern business, quality management becomes a business function as any other, highlighting the high level of people interacting between all departments in the organization [5].

Quality management is a set of processes, consisting of documenting operational phases, their improvement possibilities and applying quality improvements. The constant improvements represent a feature of successful quality management in the organization, where the customer and his satisfaction come to the first place. As previously defined, quality management is a set of processes, and therefore it represents a process approach that is considered as a fundamental principle of quality management. According to this, for the efficient functioning of an organization, it is necessary to establish its interrelated processes and to manage them uniquely. The principle of quality management is therefore related to the principle of regular quality outputs monitoring. According to this, it is necessary to constantly improve the overall operational abilities of the organization. This methodology of a continuous improve-

ment is based on the principle of William Edward Deming, the so-called Deming Circuit or PDCA Circuit (acronym for Plan – Do – Check – Act). This circuit is the basic quality principle embedded in all management systems, including the ISO 9001:2015. Monitoring of PDCA circuit enables effective management and continuous improvement of the company efficiency. The PDCA represents a continuous mode of planning, implementation, verification and action that are based on a methodical approach to solving problems and implementing THE appropriate solutions [7]. The PDCA circuit is the basis for quality management in organizations, and at the heart of ISO 9001:2015 Standards. Figure 1 presents the PDCA quality process assessment elements [8].

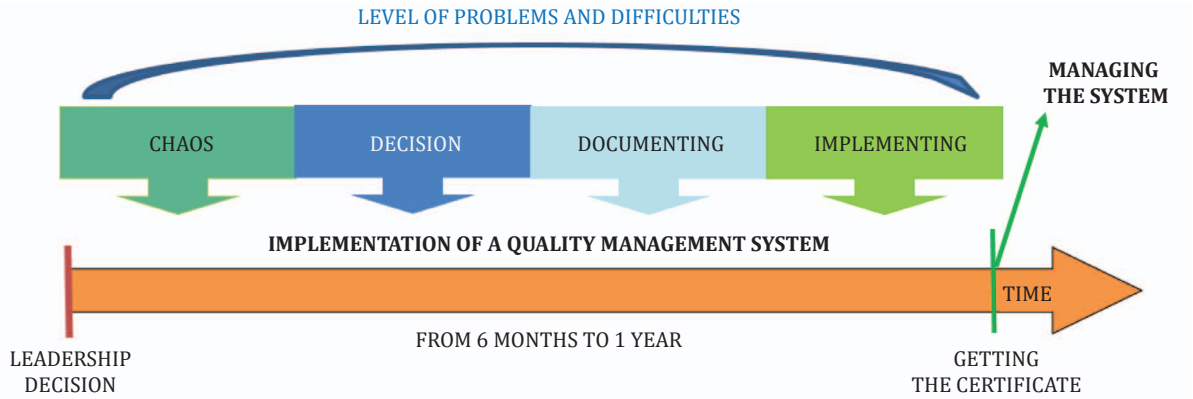
Figure 1 shows key elements (official sections) of the ISO 9001:2015 standard i.e. from the fourth section of the ISO 9001:2015 standard named: *4 Organizational context* to further on. The process approach to quality management from section 4 to section 10 *Improvement* indicates the need for implementation of the constant improvements that coincide with the PDCA circle. The merger of this proc-

ess approach and the PDCA methodology leads to the establishment of a unique quality management system.

Generally, the introduction of a quality management system, primarily in terms of quality standards, is attributed to larger business entities. The introduction of such systems often causes significant costs, making the process more challenging for SMEs. Beside over-priced implementation, SMEs are often not organizational or administratively prepared for the introduction of such a complex and demanding system [9]. However, the introduction of a quality management system for SMEs significantly initiated the opening of SMEs to the foreign market, especially following Croatia’s accession to the European Union. Companies whose operations are certified in accordance with the requirements of ISO standards became more recognized and competitive on domestic and foreign markets. Therefore, this has also implied a trend of introducing a quality management system to strategic development within a large number of SMEs. The next figure shows the basic procedure when implementing a quality management system.

PLAN				DO	CHECK	ACT
4. Organizational context	5. Leadership	6. Planning for QMS	7. Support	8. Working process	9. Evaluating measurable results	10. Improvement
4.1. Understanding the organization and its context	5.1. Leadership and commitment	6.1. Measures for undertaking steps related to risks and opportunities	7.1. Resources	8.1. Operational planning and supervision	9.1. Monitoring, measuring, analyzing and evaluating	10.1. In general
4.2. Understanding the needs and expectations of interested parties	5.2. Quality policy	6.2. Quality goals and planning their achievements	7.2. Qualifications	8.2. Products and services requirements	9.2. Internal audit	10.2. Nonconformity and corrective actions
4.3. Determining the area of implementing the QMS	5.3. Responsibilities and authorizations roles in the organization	6.3. Alterations (changes) planning	7.3. Awareness	8.3. Projecting and development of products and services	9.3. Management review	10.3. Permanent improvements
4.4. The quality management system and its processes			7.4. Communication	8.4. Monitoring the processes, products and services received from external suppliers		
			7.5. Documented information	8.5. Production process and provision of services		
				8.6. Releasing the products and services in circulation		
				8.7. Supervision of nonconforming outputs		

Figure 1 Model of process approach in quality management system (QMS)  
Source: [8]

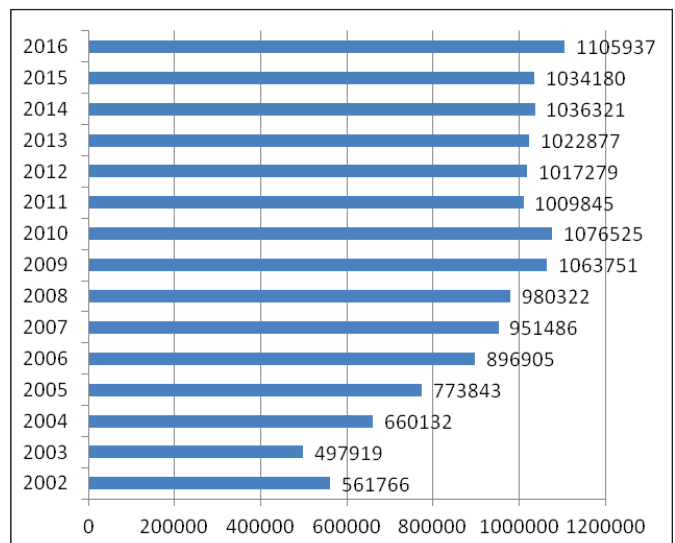


**Figure 2** Implementation of a quality management system  
Source: [7]

The quality management system is being introduced after an analysis that should indicate existing or potential business problems. After noticing these problems, a decision is made on introducing a quality management system, following detailed documentation respecting the business process as a whole. After that, a quality management system is starting to be implemented in all phases of business operations. Time span of this process, including decision making on introducing the quality system to obtaining a certificate from a selected certifier, usually takes from six months to one year. The certification of quality management systems defines SMEs as well-organized, documented, process-oriented and functional on the principles of quality and, thereby, contributing to increased organizational competitiveness [10]. Once a company gains the certificate of quality management, this system becomes a part of the company’s overall management hierarchy. This implies a constant quality monitoring and constant improvements on all levels, i.e. the continuous implementation of the PDCA cycle for ensuring continuous improvements. After the initial implementation of a quality system, once a year, the efficiency of the introduced system is being tested through planned internal audits and one supervisory audit carried out by external certification bodies. After three years, the certificate is renewed in the process of repeated certification where a company has to meet the quality requirements of the given ISO standard.

The introduction of a quality management system is part of the productivity, profit and living standards growth strategy [11]. The increasing number of quality management systems being implemented in modern organizations has demonstrated that the positive effects justify the system introduction. Therefore, the consequence of these effects is the steady growth in the number of companies having certified quality systems. Advantages of certified systems lead to higher sales, growing market share, improved efficiency, less scratch, higher customer satisfaction, lower costs, better planning and ultimately greater profits [7]. The given trends rapidly lead to the neutralization of negative effects, especially psychological

ones, leading to obligations and pressures placed on the management and the employees [12]. Each (individual) organization is able to independently choose the quality management system that will apply in its business operations. As stated, the most commonly introduced one is the ISO 9001 quality standard. The development of ISO standards began in 1946 when delegates from 25 countries made the decision to create a new international organization with the aim of facilitating international coordination and unification of industrial standards named International Organization for Standardization – ISO. A year after, ISO started with its official operations. So far, 22,217 international standards and related documentation have been published covering almost all industry sectors, from technology to food safety, agriculture and health. The ISO standard system has been proclaimed as a unique system in the worldwide use since 1987, with a



**Figure 3** Number of companies in the world with ISO 9001:2015 management quality system from 2002 to 2016  
Source: [13]

purpose to protect the interests of the users of products or services. This standard highlights the importance of quality management by emphasizing that no top-quality can be achieved without quality management and without the quality management system, competencies and standardized procedures [5]. That is why the next chart represents the positive outcomes of ISO 9001: 2015 adoption in the world from 2002 to 2016 [13].

Within the ISO standard family, the most emphasized are ISO 9000 and ISO 9001:2015. Generally, the group of international quality management and quality assurance standards ISO 9000 has been developed to help companies to effectively document all aspects of their quality system. These standards are applicable to all industries and all types of organizations. Although most commonly referred to ISO 9001:2015, this standard is part of the family of ISO 9000 standards. The ISO 9000 family of quality management systems standards is designed to help organisations to ensure that they meet the needs of customers and other stakeholders while meeting statutory and regulatory requirements related to a product or a service [14]. The ISO 9000 family of quality management systems standards includes the following set of norms [15]:

- ISO 9001: 2015 – Quality Management Systems – Requirements
- ISO 9000: 2015 – Quality Management Systems – Fundamentals and Vocabulary
- ISO 9004: 2009 – Quality Management Systems – Managing the Organization’s Sustainable Success
- ISO 9001: 2011 – Guidelines for Auditing Management System.

The evolution of ISO 9000 standards included a few versions across time: 1) the 1987 version (ISO 9000:1987), had the same structure as the UK Standard BS 5750, with three “models” for quality management systems, the selection of which was based on the scope of activities of the organization, 2) the 1994 version (ISO 9000:1994), 3) the 2000 version (ISO 9001:2000), 4) the 2008 version (ISO 9001:2008) and 5) the 2015 version (current ISO 9001:2015). The 2015 version is also less prescriptive than its predecessors and focuses on performance. This was achieved by combining the process approach with risk-based thinking, and employing the Plan-Do-Check-Act cycle at all levels in the organization [16]. The 2015 version focuses on performance, including stakeholder evaluation, risk analysis and Plan-Do-Check-Act cycle on all company levels. This version therefore has included some of the following key changes [16]:

1. High-Level Structure of 10 clauses is implemented in all new standards released by ISO;
2. Greater emphasis on building a management system suited to each organization’s particular needs;
3. A requirement that those at the top of an organization be involved and accountable, aligning quality with wider business strategy;
4. Risk-based thinking throughout the standard makes the whole management system a preventive tool and encourages continuous improvement;
5. Less prescriptive requirements for documentation: the organisation can now decide what documented information it needs and what format it should be in;
6. Alignment with other key management system standards through the use of a common structure and core text;
7. Inclusion of Knowledge Management principles;
8. Quality Manual & Management representative (MR) are no longer mandatory.

The most prominent standard ISO 9001:2015 includes the following contents:

- Section 1: Scope
- Section 2: Normative references
- Section 3: Terms and definitions
- Section 4: Context of the organization
- Section 5: Leadership
- Section 6: Planning
- Section 7: Support
- Section 8: Operation
- Section 9: Performance evaluation
- Section 10: Continual Improvement

Global statistics on the number of companies that have introduced quality management systems is being constantly updated. Hence, the ISO 9001:2015 certificate has been statistically analysed since 1994. The largest recorded growth was registered in 1995 when implementation of this standard stands up for 81% in comparison to certificates issued the previous year. Since 2011, the growth has been almost negligible at 1% per year, and, in 2015, the number of certificates decreased as compared to the previous year. According to the latest available data, in 2016, the number of the issued certificates ISO 9001: 2015 increased by 6.9%. The majority of the total number of certificates is usually issued in Asian countries (about 43% in 2016) and then in Europe (with about 40% in 2016) [16].

The following table shows the number of ISO certificates in Europe and in Croatia.

**Table 1** Companies with certified ISO 9001:2015 standards in Europe and Croatia

	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Europe</b>	455,303	500,286	532,896	457,654	466,929	458,814	453,628	439,477	451,415
<b>Croatia</b>	2,302	2,567	2,102	2,117	2,584	2,636	2,806	2,529	2,659

Source: [16]

The number of certified companies in Europe decreased in 2016 compared to 2010 and 2011, but was higher when compared to 2015. Certified companies in Croatia represent only a small part of the total number of certified companies in Europe. Although the number of companies holding the ISO 9001:2015 certificate in Croatia increased in 2016 compared to 2008, when their number was also compared to 2014, there was a noticeable decrease. Certain companies have decided to abolish the quality management system, and most often their management has not recognized the benefits of the system. The growing number of companies that certify ISO quality standards, or introduce the quality management system ISO 9001:2015, is a quantitative indicator of the importance and benefits generated by this system. The benefits of introducing a quality management system manifest in all aspects of business, from finances to management efficiency, product development, service delivery, sustainability and operational activities. The research car-

ried out by Miljenović [17] states that nowadays sustainability is a crucial issue in general, regarding products and services meeting environmental, social and stakeholder demands. These are all issues of the quality addressed through the company Triple Bottom Line i.e. financial, environmental and social sustainability [17]. Sustainability issues may be addressed through quality assessment and management in these three given areas.

In addition to many advantages that are achieved with the introduction of certified quality management systems, certain disadvantages are also present. The advantages of introducing a certified quality management system are multiple. These multiple advantages include marketing, organizational, psychological and financial aspects (just like the deficiencies). An overview of the advantages and disadvantages of certified systems in companies, such as those of SMEs in maritime and coastal transport, shows that the greatest drawbacks relate to financial expenditures, which trigger the introduction of a quality manage-

**Table 2** Advantages and disadvantages of certified management quality systems

	<b>Advantages</b>	<b>Disadvantages</b>
<i>MARKETING</i>	<ul style="list-style-type: none"> <li>• Better communication with the customers</li> <li>• Better understanding of customer needs</li> <li>• Increased customer confidence</li> <li>• High quality products and services</li> <li>• Higher customer satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>• Misuse of certificate through promotion</li> <li>• Misunderstanding by the suppliers</li> <li>• Elimination of the long-standing partners</li> <li>• Temporary loss of market due to innovations in products or services</li> </ul>
<i>ORGANIZATION</i>	<ul style="list-style-type: none"> <li>• The ability to monitor and measure the rate of individual goals achievement</li> <li>• Documentation of the business system</li> <li>• Optimization of the documentation quantity</li> <li>• Adopting new methods of improvement</li> <li>• Clearly defined responsibility at all management levels</li> <li>• Involving young professionals in the system</li> <li>• Resource management</li> <li>• Easier process management and higher efficiency of the processes</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate and sudden change of organizational structure</li> <li>• Not understanding a part of documents related to quality</li> <li>• Excessive production of unnecessary documents</li> <li>• Misunderstanding of functional and process responsibility</li> </ul>
<i>PSYCHOLOGY</i>	<ul style="list-style-type: none"> <li>• Unambiguous procedures interpretation</li> <li>• Preventive education</li> <li>• Higher level of employees satisfaction, motivation and engagement at all t levels</li> <li>• Improved internal communication</li> <li>• Better informed employees</li> <li>• Higher level of corporation culture</li> <li>• Higher awareness of quality (importance)</li> </ul>	<ul style="list-style-type: none"> <li>• Lower employees satisfaction</li> <li>• Innovation, optimization, reengineering process</li> <li>• The necessity of permanent education</li> <li>• The impossibility of free interpretation of the procedures</li> <li>• Fear of additional obligations</li> <li>• Severance with the models of current work and behaving</li> <li>• Ability to measure work contributions</li> <li>• Fear of responsibility</li> <li>• The possibility for easier detection of the error causes</li> </ul>
<i>FINANCES</i>	<ul style="list-style-type: none"> <li>• The possibility of quantitative analysis for all business operations</li> <li>• Reducing the need for additional control</li> <li>• Reducing production costs related to quality monitoring</li> <li>• Increase of productivity</li> <li>• The ability to predict and reduce errors</li> <li>• Improving the profitability</li> </ul>	<ul style="list-style-type: none"> <li>• Excessive investments in quality after reaching the optimum quality</li> <li>• Unnecessary excessive controls</li> <li>• Changes in the structure of total costs</li> <li>• Reduced financial effects due to the higher influence of psychological effects</li> </ul>

ment system. There is also and inadequate knowledge, i.e. the need to educate employees due to the complexity of the system. Often, this complexity negatively reflects the motivation of employees, which is an additional limiting factor in introducing an efficient quality management system [18].

Observing the obstacles that may emerge when introducing the ISO quality management system in SMEs, several key types of issues have been identified: inadequate financial resources, insufficient or inadequate human resources, insufficient knowledge of process management regarding quality objectives, planning not covered by strategic objectives, inadequate or even non-existent documentation for all business processes [7]. It is especially important to emphasize the fact that the introduction of a quality management system (certified or not) is not a guarantee of successful business. The quality management system certificate, according to ISO 9001:2015, enables companies to compete in the global market being also a necessary prerequisite of new business creation [19]. This system represents a useful tool in the organization and improvement of its operation. However, it is not a catalyst that solves and/or neutralizes quality issues and doubts in a short period of time. Different and global researches have defined some crucial negative factors that often limit the introduction of the ISO quality management system in SMEs. These factors are: high costs (consultations, reviews and registrations), long time of implementation, high formalism, a double customer ethics (regarding their insistence on quality system introduction and then doubting the growth of the price caused by higher quality) [20].

### 3 Previous Research Results on Management Quality Systems

In the past few years, the attention of domestic and foreign researchers was fixed to inputs and outputs of introducing the quality management system in SMEs. In this paper some of the results of previous researches have been represented chronologically. These results focused on some of the researches carried out in the last two decades, being based on completely different research assumptions ultimately leading to interesting, segmented conclusions. Some of the researches reported that solving an issue of introducing a quality management system is based on the correlation with international competitiveness of the company. This correlation showed to be positive in a significant number of researches, stating that quality management systems were introduced for the purpose of improving international competitiveness and that in practice these systems could contribute genuinely to the improvement of international competitiveness [9]. These findings, confirmed also by in other researches, pointed out to the existence of a positive correlation between competitiveness and the introduction of a quality management system [21, 22], but also more favourable effects for companies operating on foreign markets [9, 23].

Although quality management systems and their contributions were considered to be more appropriate for large corporations, due to the size of SMEs and their limited promotion opportunities, it was important to observe and analyse their contributions to any type of business organization. A number of domestic and foreign authors [22, 21, 9, 23, 24] addressed this problem. In addition, worldwide researches suggested that key factors why the SMEs engagement in introducing quality management systems was constantly related to sales. This was explained by the pressures of the existing and potential new customers, larger market shares and competitive pressures [20].

Chronologically, one of the earliest researches in this area was carried out in 1997 including 700 Western-European companies implementing quality management systems, which recognized a significant number of benefits from introducing it. The most important advantages were highlighted as: higher customer satisfaction, increased staff engagement, increased awareness of quality importance, cost reduction and generally improved business results [25]. One of the most time-consuming researches in Croatia was carried out in the period from 2000 to 2004 relating to the business aspects of the 400 most successful Croatian companies [26]. This research confirmed the positive effects of certified quality management systems on business operations i.e. on the success of economic entities, especially in companies with a high degree of export orientation. The results of the research indicated that companies were constantly increasing the number of certified quality systems with a growing number of companies having high export shares. The share of certified companies among the largest exporters was almost a quarter higher than among the largest importers [21]. A comparable research, dating from the year 2003, was carried out on a sample of 550 companies with a total of 105 responses and confirmed that 19% of the companies had introduced quality management systems [27].

The research of Ionita et al. in 2009 [22] was focused on identifying the efficiency and impact of the international business operations of Romanian SMEs after the introduction of a quality management system. The authors concluded that the dominance of SMEs in Romania's economy required a carefully elaborated growth and development strategy in which quality and quality management systems had a significant role. Opinions expressed in the research stated that only those companies that introduced certified quality management systems in their operational processes could offer their products and services on the European countries markets. Their research showed that companies that introduced a certified ISO 9001:2015 quality management system were actively involved in domestic and foreign affairs, and that the quality assurance provided by the certified system led to an increased competitiveness, increased efficiency and, hence, better market positioning among European countries [22].

The research carried out by Hudson and Orviska in 2012 [28 in 19] analysed the correlations of introducing a

quality management system with business features. The following variables were used: focus on domestic or foreign markets, manager experience, company size, geographic distribution, type of ownership structure and location. On a sample of 11,668 companies in Central and Eastern Europe and Asia, it was found that certified quality management systems were most common in export-focused companies and least frequent in companies operating only on domestic markets.

Tunjić et al. [21] carried out a survey in 2013 for the purpose of analysing the impact of quality management system certification on the competitiveness of Croatian companies. Their research has shown that SMEs are aware of the importance of certifying quality management systems in their business operations and that their introduction contributes to the improvement of corporate image in the world economy. Increasing competitiveness is the goal of any small business, which can be achieved, among other, through the high quality of business processes and their final products. The authors concluded that the certified quality management system according to ISO 9001:2015 provides all the prerequisites for achieving defined business goals and raising the scale to a higher level.

Zambelli and Rajić [9] in 2014 analysed the question of justified introduction or non-adherence to certified quality management systems. The conclusion of their research is that certification of the quality system is relevant for the development of the organizations in accordance with the demands of the modern market. The introduction of a quality management system and its certification (based on ISO 9001: 2015) is affecting the growth of exports. The existence of a company's quality system represents a measure of stability and business performance on the domestic market, but it also becomes a benchmark for their inclusion into international market mainstreams. The research has supported the assumption that export-oriented companies are highly aware of the importance of certifying a quality management system. This is understood as a certain proof of the acceptance of international principles and business standards and best quality assurance on the foreign markets. The authors argued that the underlying motive for introducing and then certifying a quality management system is precisely the company emergence on international markets.

In general, the effects of introducing quality management systems to SMEs and relation to their international competitiveness have not been more seriously investigated in available literature i.e. they stood only for chosen sectors and industries. Gundić, Jugović and Čulin [18] explored the effects of introducing the quality management systems in the operations of SMEs in maritime and coastal transport in Croatia. Their research confirmed that the introduction of this system increased the efficiency of the business and as a final result improved their market competitiveness along with the improvement of the end users' satisfaction. Due to the specific nature of maritime and coastal activity, there is an extremely small number of SMEs that have introduced quality management sys-

tems. Based on the research results and attitudes of the respondents, the authors came to the conclusion that the introduction of a quality management system contributed to increasing the efficiency of SMEs by influencing their competitiveness and increasing the customer satisfaction.

Zambelli, Rajić and Burilović [23] explored the role of the Croatian export management system in 2015. The carried out survey proved that the introduction of the quality system and quality certification of the company increases its exports, which is confirmed by statistical correlations between the introduction of ISO standards and the increase in the company export activity. In the research on introducing quality management systems, the authors identified the following most prominent benefits: increased exports, increased employee satisfaction, lower costs, increased market competitiveness, greater customer satisfaction and a positive image of the company. Quality management systems in business operations have long been recognized as a way of improving business, even when, globally, the existing quality management systems (ISO) were not so present in business practices.

In 2016, Kristić [24] carried out a research on the efficiency of introducing the quality management system in agricultural SMEs for the purpose of the doctoral thesis confirmation. The research showed a positive relationship between the introduction of quality management systems and the improvement of both quantitative and qualitative indicators, among which the following are strictly highlighted: the positive impact on price competitiveness, competitive advantages in general, better and higher customer satisfaction and the growth of export. In a study done by Spanish and American scientists, the financial performance of companies that own ISO 9000 were analyzed and compared to companies in the same sectors with no quality management certificates. The research proved that a standardized (i.e. the regulated) quality management system led to improved financial performance that could also be measured with return on investment (ROI). Holistically, the research showed that as many as 80% of companies are doing business better since they have adopted ISO 9001: 2015 [29].

The given research review has shown that the introduction of the quality management system has been the preoccupation in many of previously segmented researches. It is also obvious that benefits and advantages of introducing quality management will represent numerous and different motives and challenges in future scientific researches.

#### **4 Application of the Quality Management System in Small and Medium-sized Enterprises in the Primorsko-goranska County - the 2018 Research Results**

Encouraged by the results of the previous research and by personal research motives, the authors of this paper carried out a survey, during the period from 7<sup>th</sup> to 20<sup>th</sup> July 2018 in the Primorsko-goranska County (Croatia) within export oriented SMEs, some of which had not implemented the quality management system ISO 9001:2015. The



research was carried out by using an online questionnaire form, which greatly facilitated its completion, thus offering a much simpler procedure for statistical data processing. A total of 137 companies were surveyed, of which only one survey was invalid (unfulfilled), and of the remaining number only 42 companies have introduced a quality management system ISO 9001:2015. Out of a total of 136 respondents, 111 were small and 25 were medium-sized companies. Out of the given sample, 94 companies have had a quality management system, while the remaining 42 companies have implemented a quality management system. Nevertheless, all the respondents' answers were eval-

uated in the survey, as they justified the potential reasons for introducing a quality system that was evaluated precisely by this research. Due to this, the number of respondents' answers to certain questions was higher than the number of respondents. On the other hand, in the created questionnaire, there was a possibility for the respondents to give multiple-choice answers i.e. one question could be answered to by more than one answer (respecting manager's attitudes related to the introduction of the quality systems). The empirical representativeness of the survey was achieved due to the number of respondents ranging from 44 to 49 respondents, after the initial filter.

**Table 3** Application of a quality management system in SMEs of the Primorsko-goranska County in 2018 – research results

Questions	Number of respondents	Responses (percentage share and number of responses)	
1. What's the size of an enterprise/a company	136	Small 81.6% = 111 responses	Medium 18.4% = 25 responses
2. Is there an existing quality management system in your company?	136	NO 69.1% = 94 responses	YES 30.9% = 42 responses
3. What are your reasons for introducing a quality management system?	49	<ul style="list-style-type: none"> <li>- self-initiative for the purpose of improving the quality of a business process (65.3% = 32 responses)</li> <li>- self initiative due to market penetration (24.5% = 12 responses)</li> <li>- customer initiative (4.1% = 2 responses)</li> <li>- other reasons (6.1% = 3 responses)</li> </ul>	
4. What benefits do you recognize from introducing a quality management system?	48	<ul style="list-style-type: none"> <li>- improvement of quantitative and qualitative business indicators (41.7% = 20 responses)</li> <li>- improvement of qualitative indicators (22.9% = 11 responses)</li> <li>- improvement of quantitative indicators (2.1% = 1 response)</li> <li>- we have not recognized any benefits (33.3% = 16 responses)</li> </ul>	
5. What is the highest degree of present benefits from introducing the quality management system in company business (by ranking list)?	48	<ul style="list-style-type: none"> <li>- increasing customer satisfaction (18 responses)</li> <li>- benefit from increasing interest in the quality of the company (16 responses)</li> <li>- cost reduction (16 responses)</li> <li>- introducing new products (16 responses)</li> <li>- export growth (15 responses)</li> </ul>	
6. Have you noticed any changes in market competitiveness after the introduction of a quality management system?	48	YES 64.6% = 31 response	NO 35.4% = 17 responses
7. What changes did you notice regarding market competitiveness after the introduction of a quality management system?	47	<ul style="list-style-type: none"> <li>- increased interest of foreign entrepreneurs for cooperation (27.7% = 13 responses)</li> <li>- increased interest of domestic entrepreneurs for cooperation (12.8% = 6 responses)</li> <li>- better position compared to large enterprises (21.3% = 10 responses)</li> <li>- easier financing by financial institutions (8.5% = 4 responses)</li> <li>- we did not notice any benefits (48.9% = 23 responses)</li> </ul>	
8. In what markets do you recognize a higher interest in quality management system?	48	<ul style="list-style-type: none"> <li>- foreign (39.6% = 18 responses)</li> <li>- domestic (12.5% = 6 responses)</li> <li>- both markets (14.6% = 7 responses)</li> <li>- none of the above (33.3% = 16 responses)</li> </ul>	
9. Do you recognize the benefits of introducing a quality management system in international business?	48	YES 50% = 24 responses	NO 50% = 24 responses
10. What are the benefits for your company from introducing the quality management systems in international business?	44	<ul style="list-style-type: none"> <li>- increased interest of foreign companies (29.5% = 13 responses)</li> <li>- increased export value (11.4% = 5 responses)</li> <li>- simplified export process on foreign markets (29.5% = 13 responses)</li> <li>- decrease of operating costs in foreign relations (11.4% = 5 responses)</li> <li>- I did not recognize benefits (45.5% = 20 responses)</li> </ul>	

Source: Authors research carried out in the SMEs of the Primorsko-goranska County in July 2018

The research objectives were to define the quality management systems in the SMEs of the Primorsko-goranska County, with a special emphasis on the precise definition of the ISO 9001:2015 standards. The general objective was the confirmation of the underlying hypothesis of the research stating: *Quality management in SMEs contributes to their foreign competitiveness as well as to the strengthening of their export activity.* Following the main hypothesis, the following sub-hypotheses were investigated and confirmed: 1) quality management systems in SMEs result in the improvement of qualitative and quantitative business indicators; 2) the introduction of quality management systems contributes to the increased competitiveness of SMEs on domestic and foreign markets; 3) the implementation of quality management systems significantly contributes to the growth of SMEs on foreign markets. The relevant share of the enterprises confirming the reliability of the research is also reflected in the answers presented in the table 3.

A significant contribution of this study initially targeted at SMEs was identifying that 30.9% (out of a total of 137) have some kind of an implemented quality management system. Although the majority of respondents (64.6%) noticed changes in market competitiveness after the introduction of quality management systems, the concrete definition of benefits in international business after the introduction is just semi-significant (50%). It is interesting to note that 41.7% of the respondents have the most benefits from introducing quality management systems related to an objective of long-term improvement of quantitative and qualitative business performance indicators. An increased interest in business cooperation after the introduction of quality management systems has been observed by foreign business partners (confirmed by 39.6% of the respondents) along with an increased consumer satisfaction of the analyzed SMEs products and services, which is highlighted by the respondents as the most important benefit.

On the other hand, it is indicative that 33.3% of the respondents did not benefit from the introduction of a quality management system and that 48.9% did not notice any changes in the market competition relations after the introduction of a quality management system. Furthermore, 45.5% of the respondents did not see any benefits from introducing a quality management system in their international business relations. Given all the apparent advantages and disadvantages that have come out from the research results confirming the main hypothesis and the sub-hypotheses, it is obvious that the scope for further evaluation and implementation of the quality management system certainly has a relevant and growing potential. This is likely to contribute to a larger number of enterprises (SMEs primarily) that will implement the quality management system in future business practice.

## 5 Conclusion

Small and medium-sized enterprises are exposed to an increasing market pressure on a daily basis due to the fact

that they represent a significant aggregate and generator of the economic activity, social growth and development. Therefore, a struggle for existentiarity puts SMEs in front of new demands where competitiveness and the increase of the market share certainly has a specific significance. Accomplishments based on efforts to achieve and maintain these prevalent significances are multiple, and appreciation of the quality of products and services is certainly a critical component of the company added value. The question of quality is only one-dimensional called the "consequential" aspect, while the question of the system of process quality management, is a part of the control mechanism and is a matter of a "causative" character. Quality management systems in SMEs must converge in order to realize their planned goals and objectives – improving business processes, further perfecting the products and services that increase satisfaction and consumer needs. The ultimate objective is to increase the company's business performance and customer added value in products and services. Accordingly and in order for SMEs to be competitive and compatible on a global scale (export-oriented), they have to implement standards and protocols respected in the world's most important economies.

The quality of products and services has become one of the crucial prerequisites for the integration within the EU member states and the global market in general, acquiring the introduction of quality management system for increased competitiveness. As a result, quality itself and the introduction of a quality management system have become both the theoretical and the practical part of many scientific researches confirming different causes, reasons and importance of implying quality management systems in everyday business operations and society. The results of these researches carried out by foreign and Croatian researchers have been complemented by the results of the study presented in this paper and carried out by the authors during the month of July 2018, in the SMEs of the Primorsko-goranska County and based on the analysis of 137 respondents made out of the total of 150 distributed questionnaires. The empirical method has confirmed a high level of correlation regarding the results of the reviewed previous research. The results of this research have undoubtedly confirmed the main hypothesis stating that the introduction of a quality management system in SMEs contributes to their foreign competitiveness as well as to the strengthening of their export activity. The main hypothesis is based on the sub-hypotheses that have been confirmed by this research stating that: 1) quality management systems in SMEs result in the improvement of qualitative and quantitative indicators of business operations; 2) the introduction of quality management system contributes to increasing the competitiveness of SMEs on domestic and foreign markets; and 3) the implementation of quality management system significantly contributes to the growth of SMEs on foreign markets. Certain discussion issues in terms of this research relate to the realistically high participation of the respondents who have confirmed

that they have not recognized any benefits from the introduction of the quality management system (33.3% of the respondents) and a high participation of the respondents who have not noticed any changes in market competitiveness after the introduction of a quality management system (48.9% of the respondents). There is also a great number of respondents who have not seen any benefits from introducing a quality management system in international business (45.5% of the respondents). These recent findings in each case oblige all relevant factors to re-examine their ambiguities and possible omissions in each of the quality management domains, so that the introduction of an appropriate management system really justifies strategic quality goals, which will certainly represent new research challenges in the upcoming research regarding this topic.

## References

- [1] Kutnjak, G.: Europska unija u funkciji poticanja i razvoja malog i srednjeg poduzetništva, *Poslovna izvrsnost*, Vol. 4, No. 2, pp. 79-91, (2010).
- [2] CEPOR – SMEs and Entrepreneurship Policy Center: Report on SMEs in Croatia–2016, Zagreb: CEPOR, (2017).
- [3] Priede, J.: Implementation of Quality Management System ISO 9001 in the World and Its Strategic Necessity, *Procedia – Social and Behavioral Sciences*, Vol. 58, pp. 1466-1475, (2012).
- [4] Kelemen, M.: *Managing Quality: Managerial and Critical Perspectives*, Sage, London, (2003).
- [5] Funda, D.: Sustav upravljanja kvalitetom u logistici, *Tehnički glasnik*, Vol. 4, No. 1-2, pp. 94-98, (2010).
- [6] Skoko, H.: *Upravljanje kvalitetom*, Sinergija, Zagreb, (2000).
- [7] MINPO – Ministry of Entrepreneurship and Crafts: Managing quality systems and risks, Zagreb: MINPO, (2017).
- [8] Adelsberger, Z.: *The challenges of ISO 9001:2015 implementation*; Hrvatska gospodarska komora. Tribina: *ISO FORUM CROATICUM*, Zagreb, 20.04.2017. Lecture presentation. Available at <https://vdocuments.site/izazovi-u-primjeni-norme-iso-90012015-hgkhr-nbsppdf-file2042017hrvatska.html> [Accessed 4th January 2019].
- [9] Zambelli, S., Rajić, D.: Analiza sustava kvalitete u certificiranim i necertificiranim hrvatskim vanjskotrgovinskim poduzećima, *Poslovna izvrsnost*, Vol. 8, No. 1, pp. 83-101, (2014).
- [10] Drljača, M.: Quality management system and management systems quality, *Kvalitet & izvrsnost*, Vol. 1, No. 7-8, pp. 16-19, (2012).
- [11] Mencer, I.: Osiguranje kvalitete – osiguranje strategijske konkurentnosti, *Ekonomski pregled*, Vol. 52., No. 11-12, pp. 1226-1242, (2001).
- [12] Miletić, A., Krajnović, A, Bosna, J.: Upravljanje kvalitetom hrvatskih tvrtki-izvoznica u EU, *Tranzicija*, Vol. 16, No. 34, pp. 93-103, (2014).
- [13] ISO – International Organization for Standardization, (2018), *Metrics and Data*. Available at: <https://isotc.iso.org/livelink/livelink?func=ll&objId=18808772&objAction=brrowse&viewType=1> [Accessed 11th July 2018].
- [14] Poksinska, B. Dahlgaard, J. J., Antoni, M.: The state of ISO 9000 certification: A study of Swedish organisations, *The TQM Magazine*. Vol. 14, No. 5, pp. 297-306, (2002).
- [15] ASQ: The Global Voice of Quality. Available at <http://asq.org/learn-about-quality/iso-9000/overview/overview.html>, [Accessed 30th July 2018].
- [16] ISO – International Organization for Standardization, <https://www.iso.org/about-us.html>, [Accessed 30th July 2018].
- [17] Miljenović, D.: Testing sustainable value added as an integrative measure of business sustainability, *Proceedings of Rijeka Faculty of Economics and Business: Journal of Economics and Business*, Vol. 36, No. 1, pp. 155-181, (2018).
- [18] Gundić, A., Jugović, A., Čulin, J.: Uloga sustava upravljanja kvalitetom u unaprjeđenju poslovanja malih i srednjih poduzeća u pomorskom i obalnom prijevozu, *Naše more*, Vol. 61., No. 5-6, pp. 134-139, (2014).
- [19] Šuman, S., Kovačević, A., Davidović, V.: Norme kvalitete – još uvijek neiskorišten potencijal, *Zbornik Veleučilišta u Rijeci*, Vol. 1, No. 1, pp. 291-306, (2013).
- [20] Papak, S.: Strategija za uspješno uvođenje ISO 9000 u malim i srednjim poduzećima i put ka TQM, *2nd Croatian conference on quality*, 24th August 2011, Zagreb, (2011). Available at [https://issuu.com/kvaliteta.net/docs/papak\\_s---strategija-za-uspjesno-uvodenje-iso-9000](https://issuu.com/kvaliteta.net/docs/papak_s---strategija-za-uspjesno-uvodenje-iso-9000), [Accessed 30th December 2018].
- [21] Tunjić, Đ. et al. (2013) Utjecaj certifikacije sustava upravljanja kvalitetom na konkurentnost u hrvatskom gospodarstvu, *14. Međunarodni simpozij o kvaliteti, Kvalitetom protiv recesije*, Rovinj, 21-22 March 2013, Rovinj, Croatia.
- [22] Ionita, I. et al.: Quality – a Factor for Competitiveness Improvement for Small and Medium Enterprises, *The Annals of "Dunarea de Jos"*, Vol. 15, No. 2, pp. 215-224, (2009).
- [23] Zambelli, S., Rajić, D., Burilović, L.: Uloga integriranih sustava upravljanja u hrvatskom izvozu, *Poslovna izvrsnost*, Vol. 9, No. 1, pp. 191-207, (2015).
- [24] Kristić, J.: The application of quality management (TQM) to enhance the competitiveness of agricultural entities (PhD thesis summary), *Poljoprivreda*, Vol. 22, No. 2, pp. 70-70, (2016).
- [25] Schuurman, H.: *Quality management and competitiveness: The Diffusion of the ISO 9000 standards/in Latin America and Recommendations for Government/Strategies*, United Nations, Division of Production, Productivity and Management, Santiago, Chile, Desarrollo Productivo, Report Number: 41, (1997).
- [26] Drljača, M.: Kvaliteta sustava upravljanja i poslovna uspješnost u Hrvatskoj, *8th Croatian conference on quality*, Zagreb, (2011). Available at <https://issuu.com/kvaliteta.net/docs/drljaca-m1>, [Accessed 29th January 2019].
- [27] Dumičić, K.: Survey research on quality system implementation in croatian companies, *Proceedings of the Faculty of Economics and Business in Zagreb*, Vol. 2, No. 1, pp. 45-66, (2003).
- [28] Hudson, J., Orviska, M.: Firms' adoption of international standards: One size fits all?, *Journal of Policy Modeling*, Vol. 35, No. 2, pp. 289-306, (2012).
- [29] Prskalo, N.: Čak 80 posto tvrtki bolje posluje otkako su usvojile ISO-norme, *Lider*, (2008). Available at <https://lider.media/arhiva/48884/>, [Accessed 30th January 2019].