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# TOTAL QUALITY MANAGEMENT IN THE FUNCTION OF VALUE CREATION: VIEW FROM THE STRATEGIC MANAGEMENT PERSPECTIVE

Menadžment ukupnog kvaliteta u funkciji stvaranja  
vrednosti sa stanovišta strategijskog menadžmenta

## Abstract

The contemporary business environment requires companies to be highly flexible in terms of adapting to customer requirements, to be consistent in quality and price-competitive, while the ultimate goal of the company is to create value for its owners. Therefore, in a long run, the sustainability of business is based on value creation for both customers and business owners. Total Quality Management (TQM) is a strategic approach to quality assurance that is based on continuous improvement of the quality of all activities in a company in order to achieve a sustainable competitive advantage. Competitive advantage is a consequence of creating value for customers to a degree which outperforms competitors, which results in value created for business owners, provided that the return on invested capital is greater than the invested capital cost. The subject of the research presented in this paper is the influence of TQM on creating value for customers and business owners. The empirical research was conducted on a sample of 141 companies in the Republic of Serbia that have a valid certificate of conformity of the quality management system with the requirements of ISO 9001. The relationship between the key TQM success factors and the market and financial performance was analyzed. Market performance indicators point to the value created for customers, while financial performance indicators correspond to the value created for business owners. The research results reveal a positive impact of TQM on creating value for customers and business owners, whereas the intensity of this impact varies depending on the used performance measurements.

**Keywords:** *TQM, strategic management, value creation, business performance, sustainable competitive advantage.*

## Sažetak

Savremeno poslovno okruženje zahteva od preduzeća visoku fleksibilnost u pogledu prilagođavanja zahtevima kupaca, konzistentnost u kvalitetu i cenovnu konkurentnost, dok je ultimativni cilj preduzeća stvaranje vrednosti za vlasnike. Stoga se održivost biznisa u dugom roku zasniva na stvaranju vrednosti za kupce i vlasnike preduzeća. Menadžment ukupnog kvaliteta (MUK) predstavlja strategijski pristup obezbeđenju kvaliteta koji se bazira na stalnom poboljšavanju kvaliteta svih aktivnosti u preduzeću u cilju dostizanja održive konkurentske prednosti. Konkurentska prednost nastaje kao posledica stvaranja veće vrednosti za kupce u odnosu na vrednost koju stvaraju konkurenti, a za rezultat ima stvorenu vrednost za vlasnike, pod uslovom da je prinos na investirani kapital veći od troškova kapitala. Predmet istraživanja u radu je uticaj MUK-a na stvaranje vrednosti za kupce i vlasnike preduzeća. U okviru empirijskog istraživanja na uzorku od 141 preduzeća u Republici Srbiji koja poseduju važeći sertifikat usaglašenosti sistema menadžmenta kvaliteta sa zahtevima standarda ISO 9001, analiziran je odnos ključnih faktora uspeha MUK-a i tržišnih, odnosno finansijskih performansi poslovanja preduzeća. Merila tržišnih performansi ukazuju na stvorenu vrednost za kupce, dok merila finansijskih performansi ukazuju na stvorenu vrednost za vlasnike preduzeća. Rezultati istraživanja pokazuju da postoji pozitivan uticaj MUK-a na stvaranje vrednosti za kupce i vlasnike preduzeća, s tim da se taj uticaj po intenzitetu razlikuje u zavisnosti od korišćenih merila performansi.

**Ključne reči:** *MUK, strategijski menadžment, stvaranje vrednosti, poslovne performanse, održiva konkurentska prednost.*

## Introduction

Total Quality Management (TQM) is the concept of managing a company which implies a holistic view of quality and pursuance of its continuous improvement. The term holistic refers to the effort of all employees in a company to ensure the quality of all activities, which leads to the achievement of business excellence. This approach to management creates a favorable climate for the development of intangible assets that in today's business environment play a predominant role in determining success. TQM represents a business philosophy based on the premise that the success of a company is built on quality. Market leaders usually take quality as the most important factor for achieving competitive advantage, which makes quality a strategic resource of a company. The International Organization for Standardization has formulated a group of ISO 9000 standards which contain a description, requirements and guidelines for building and improving the quality management system of a company. The latest version of the Standard incorporates all key factors for successful TQM implementation. It is therefore considered that ISO 9001 certified companies have adopted TQM as a business philosophy to a significant extent. The introduction of the Malcolm Baldrige National Quality Award by the U.S. Government in 1987 is one of the first attempts to promote successful business strategies based on quality and success metric associated not only with financial, but also with non-financial measures of success. The importance of non-financial performance measures is rooted in the growing significance of intangible assets, whose components can hardly be valued by financial performance measures only. Non-financial performance measures provide early signals of the extent to which goals are met, enabling thus a prompt reaction of decision makers. This is especially important for assessing the effects of a strategy whose financial effects can only be visible in the long term, such as the TQM concept. Non-financial performance measures are significant for evaluating both operating and market performance, which represent the drivers of future financial performance.

Competitive advantage arises from the creation of superior value for customers and, at the same time,

presents a precondition for creating value for business owners. In the commercial market, value for customers is generated by improving the quality-price ratio, while value for owners is achieved in the financial market. Since gaining competitive advantage results in business success, quality is of particular importance in the process of formulating a business strategy which is the focal point of the management process of a modern company. If a business strategy brings into conflict the interests of customers and those of owners, it is not possible to create value for one party without destroying value for the other. Only strategies that create value for both customers and business owners ensure the sustainability of the business in the long run. Therefore, strategy evaluation is of particular importance as a stage in the strategic management process. Consequently, the concept of value-based management, the basic idea of which is the continuous assessment of the strategy's effects on company's value, is gaining importance. Thus, the strategy becomes assessed on the basis of created or destroyed value for business owners. In this regard, all activities in the function of quality improvement must be reexamined in terms of their contribution to creating value for both parties.

The backbone of the TQM concept is the constant search for opportunities to add value for customers while reducing unnecessary costs. However, TQM as a complex strategic management tool is rarely properly implemented to fully realize its potential in the form of value created for owners. Since TQM is not a program or set of guidelines, but rather a business philosophy, company's management faces many challenges in the process of its implementation. First, a national culture has a significant impact on TQM, and, in some cases, it might limit its successful implementation. Besides, TQM is often seen as a quick solution to all company's problems and visible effects are expected in the short run. Being mainly oriented towards short-term profitability, managers often abandon further TQM implementation. Sometimes the causes of inefficient TQM implementation are the lack of employee motivation to reduce errors and improve quality, their resistance to change, inability to understand the potential of this approach, and the underestimation of the effort that must be put in to obtain the desired effects. Extensive research

around the world indicates that the top management commitment is of great importance for a successful TQM implementation. Inefficient implementation results in higher costs and employee dissatisfaction, consequently resulting in a diminished value for customers and business owners. Given the conflicting results in terms of contributing to business success, the impact of TQM on business performance has been explored worldwide for nearly 40 years. This impact is not yet completely clear and sufficiently explored, especially due to the influence of environmental factors. Since research of this type is scarce, usually accompanied by numerous doubts and conceptual differences, this paper seeks to fill this gap and raise a significant research question in the field of quality management. The results of an empirical study on the impact of TQM on value creation for both customers and business owners in the Republic of Serbia present a major contribution of this research. The context of TQM analysis is the concept of strategic management, the main result of which is the strategy which focuses on competitive advantage, resulting in superior business performance and, consequently, in value creation for business owners.

## The concept of TQM

TQM represents a modern paradigm of quality management. It is the last stage in the evolution of quality management and is often referred to as strategic quality management. The TQM principles provide guidance for linking activities and decisions to strategic quality goals, as well as for developing intangible resources crucial for sustainable development of a company. There are four principles underlying this strategic approach to quality assurance [21, pp. 1-2]: customer satisfaction, fact-based management, employee focus and continuous improvement. The first TQM principle refers to strengthening customer relations in order to encourage two-way communication. Obtaining the information on customer needs in a timely manner is the starting point in the process of creating superior value. As every management requires measurement, fact-based management as the second TQM principle refers to data collection, their processing and the analysis of obtained results in order to make the right decisions. Controlling

both value and cost drivers is a necessity in today's business environment. Employee focus involves empowering, motivating and encouraging employees to continually improve quality. This is achieved through trainings that raise the level of knowledge and competences for quality improvement, incorporating rewards for the improvements made in the compensation system, supporting employees, delegating authority and responsibility, as well as allocating necessary resources. Human capital represents the most significant intangible assets component, since only employees have the capacity to learn and, consequently, to develop other components of intangible assets. Therefore, employee empowerment is given special attention within the TQM philosophy. The discontinuous nature of the contemporary business environment, characterized by frequent changes in technology, and consequently by the changes in customer requirements and competing patterns, imposes the need for continuous improvement which implies a constant search for quality improvement opportunities. In such a way, quality becomes a key player in adapting a company to the changes in the environment.

Lynch [27, p. 542] describes TQM as a modern strategic approach to quality, with a threefold nature of its strategic importance. Namely, it (1) emphasizes the necessity of observing the company as a whole, (2) requires active support of top management, and (3) can significantly contribute to the achievement of competitive advantage. TQM emerges from applying the principles of quality management to all aspects of the company's business [10, p. 784]. The need for a holistic view of quality is rooted in the fact that there is no single point where quality should be incorporated into a product or service. Rather, it arises from a large number of activities. Therefore, quality management as a function must pervade all other functions within the company. Furthermore, it should not be perceived as a support function for value creation, but rather as a key one. Bearing in mind that a modern organization is driven by a strategy, TQM should be seen as a subsystem of strategic management. The companies that accept quality as the core of business strategy are able to achieve success in the global market. An empirical study conducted in Germany in 2005, involving 400 quality managers, shows that quality management is of increasing

importance in Germany and that the approach to quality is the factor which separates successful companies from less successful ones [13]. Successful companies have a holistic approach to quality management and are internally motivated to implement it, as opposed to less successful ones that are externally motivated. Internal motivation refers to the desire for improving the quality of business, while external motivation is primarily based on satisfying customer requirements and regulations regarding the existence of a formal quality management function.

Exploring the strategies of successful companies and leaders in the world market, Simon [34, pp. 154-155] concludes that in most cases successful strategies are aimed at creating high value for customers based on quality. However, when the focus of the competitive strategy of the observed companies is cost reduction, this objective is achieved by increasing the process efficiency, which means that the issue of quality is headlined again. Giebel [13] states that in the modern business conditions all business activities have to prove their ability to add value, which is also the case with quality management practices. Identifying the mechanism of value creation through quality management creates the basis for effective management of this process. While the concept of value-based management focuses more on financial value, other concepts such as the EFQM Excellence Model or the Balanced Scorecard indicate the values that underlie and drive future financial success.

The basic competence of a modern company is the ability to formulate an effective strategy and to implement it efficiently. TQM as a holistic approach to quality management can also be seen as a strategic management tool for formulating and implementing the strategy. TQM is a goalless race that involves a constant search for improvement opportunities, while the commitment to finding and implementing best practices represents an integral part of the strategy implementation process. Strategic management involves analyzing the environment and the position of a particular company within it, formulating the strategy as an essential planning decision, assessing the effects of the strategy, and implementing it. It is a way for a company to obtain a sustainable competitive advantage, which is a precondition for creating value for business owners [10, p.

xiii]. The importance of strategic management is reflected in the fact that it helps the company to successfully operate in a dynamic and complex environment, which imposes the need for continuous adaptation. The transformation of conventional management into strategic one involves the transformation of business function management into business process management and value-based management [10, p. xvi]. The focus is no longer on costs, but on collaboration with customers and other interest groups. Furthermore, performance is measured by value created for customers and business owners instead of using measures such as net profit and rate of return [10, p. 9]. The process of formulating goals, making and implementing different planning decisions seeks the involvement of a larger number of relevant individuals. Having been formulated, the goals must be linked, coordinated and considered from different perspectives.

Janošević et al. [20, p. 33] highlight the importance of TQM as a means of ensuring distinctive competence, which reflects the strength of a company that is not easy to imitate. Its role is reflected in the management of strategic resources through their continuous improvement and adaptation to the needs of the company. As a result, invisible relationships are created, which builds up the capacity of the company, at the same time preventing competitors from learning the secret of success. TQM strengthens the linkages both within the company and between the company and its stakeholders. The key to success lies in an integrated network, where all members of the supply chain see themselves as the beneficiaries of an overall efficient system. The TQM philosophy strives for creating value for all, rather than considering buyers and suppliers as opposing parties [35, p. 347]. TQM becomes a way of life and a part of the company's culture. Its implementation sometimes requires radical changes in organizational culture and structure, which refers to redefining connections and relationships within the company and between the company and its stakeholders. Since the change is inevitable, the starting point is the awareness of both management and employees of the need for change. The most difficult part of the TQM implementation process is changing the organizational culture and sustaining that change. Kumar and Sharma [24] maintain that TQM

is a corporate culture characterized by an increase in customer satisfaction due to a continuous improvement of quality in which all employees take an active part. They point out that, in order to attract customers in an era of hypercompetition, companies set above-average criteria for the quality of their products and services.

Brah et al. [5] argue that TQM relates not only to the management of quality, but also to the quality of management, because the largest number of errors in a company's operations emerges from inadequate planning. The quality of management is reflected in the process of strategy formulation and implementation, which often requires multiple, mutually supportive capabilities. This network of capabilities represents the strength of a company that cannot be copied [26, p. 7]. In order to ensure strategic learning across the company, employees at different levels should be involved in the strategy development process [34, p. 325]. Strategic thinking is based on learning as a vital component of knowledge generation through which superior performance is achieved [6, pp. 243-245]. Top management's ability to create a vision and promote change is at the heart of the TQM philosophy. In this regard, it is necessary that top management possess transformational leadership skills to provide the capacity for adopting this philosophy [32]. TQM requires setting long-term quality goals, assuring resources and formulating strategies to achieve the set goals, as well as an ongoing evaluation of the results achieved.

Due to the complexity of TQM as a concept and business philosophy, there are frequent examples of its inefficient implementation, causing much criticism of this concept. The reasons for the failure to implement TQM can be manifold. Some of them imply unawareness of its potential, ineffective change management and employee motivation, short-term orientation, national culture traits that conflict with key TQM principles, lack of resources, unclear strategy and conflicting goals, weak coordination, redistribution of power, etc. One of the potential solutions to overcome this problem is using strategic management tools like the Balanced Scorecard. The Balanced Scorecard has a threefold role - it serves as a performance measurement system, a strategy communication tool, and a strategic management system. It involves translating the strategy

into goals, as well as identifying the best measures for monitoring the achievement of goals. Creating the Balanced Scorecard requires involvement of employees from various functions in the company in order to set the goals properly and identify the best way to achieve them, as well as in order to define the measures that best reflect the degree of fulfillment of the set goals. In this way, all employees can better understand what is expected of them and can be able to monitor their own performance better. Thus, increasing employees' orientation to long-term results and motivation for quality improvement is in direct connection with linking the Balanced Scorecard with the compensation system and rewarding employees for quality improvement on the basis of non-financial performance measures.

### The role of TQM in the value creation process

Being at the same time a consequence of creating value for customers and a precondition for creating value for business owners, competitive advantage stems from the possession of superior resources and capabilities, as well as from the more productive exploitation of those resources [3]. As a key factor in the process of formulating and implementing a strategy, resources cannot create value on their own. Namely, they need to be supported by appropriate capabilities in a company [18]. The founders of the resource-based view in the concept of strategic management believe that no distinction should be made between resources and capabilities, because the ability to use resources successfully also represents a type of resource. It is said that a company achieves its competitive advantage when it performs strategically relevant activities more efficiently and effectively than its competitors [10, p. 398]. Most developed market economies base their competitiveness on knowledge, business innovation, strategy and sophistication of their business model, and far less on natural resources and cheap labor [19]. In this regard, it is necessary for a company to become a learning organization, which involves continuous reconsideration and experimentation in order to create and transfer knowledge. As the TQM philosophy is based on the constant search for improvement opportunities,

individuals and the organization as a whole are subjected to permanent learning.

Prajogo and Sohal [31] explain that quality creates competitive advantage through customer loyalty and reduction of their price sensitivity. A prerequisite for customer loyalty is their satisfaction, which arises as a consequence of the value created for customers in the commercial market and is an important factor for company success. This influence is reflected in the following [29, p. 6]:

- It is more cost-effective to retain the existing customers than to acquire new ones;
- The longer the customer relationship, the higher the profitability;
- A loyal customer will spend more money on the chosen company; and
- About a half of new customers come from the existing customers' referrals.

The aforementioned should be expanded to include an internal perspective where productivity gains are brought about by the improved process quality, which is reflected in problem solving, elimination of process parts that do not add value, waste reduction, and a rational use of resources. In this regard, there are two basic sources of competitive advantage, those being lower costs and a higher degree of differentiation [10, p. 398]. It is possible to make a significant cost reduction by improving the quality of the process, whereas improvement of the product or service components' quality results in differentiation. When a company intends to become a leader in terms of costs in its industry or market, it employs the cost leadership strategy. On the other hand, companies may strive to gain competitive advantage by differentiating its products and services from those of competitors, in which case the differentiation strategy becomes the appropriate choice. If the goal is to achieve competitive advantage at the chosen niche market, then the company may apply either cost focus strategy or differentiation focus strategy.

The sustainability of competitive advantage gained through TQM arises from the complexity and invisibility of the sources of the advantage. The strength of TQM is reflected in the ability to generate intangible resources, such as knowledge, information, technology, innovation potential, connectivity and a strong organizational

culture, which become company-specific and unsuitable for imitation. Đuričin and Vuksanović [11] point out that in the modern era connectivity becomes the ultimate free good with zero marginal costs, while combinatorial innovations are a key driver of growth. Competencies are based on experience and learning, while complexity arises as a result of interaction among resources. The imperfect mobility of these resources ensures the sustainable competitive advantage of the company that owns them [32]. Intangible assets, often referred to as intellectual capital, become dominant in determining the value of a company, while tangible assets play a secondary role. Consequently, the capital market highly values the growth potential of companies that base their strategy on the development and exploitation of intangible assets. TQM contributes to the development of all components of intangible assets, i.e. human capital, structural capital and relational capital. Human capital is developed by raising the level of knowledge, competences, innovation potential, motivation and enthusiasm of employees through learning, teamwork, experimentation and self-control. In terms of structural capital, as a consequence of TQM, a more flexible organizational structure and open organizational culture are created, open communication is ensured, databases are formed and key competencies are developed. Finally, by strengthening the relationships with customers and suppliers, and building a reputation for excellence, the company develops relational capital. Janošević and Dženopoljac [17] state that the value created by intangible assets is indirect, potential and contextual. Various components of intangible assets are in constant interaction, which is why its value is indirectly created and difficult to estimate, and the effects tend to be delayed and uncertain. The value created is considered to be contextual as it depends on its harmony with the strategy, since the modern business environment requires positioning the strategy at the center of the management process. Value maximization is a long-term concept that involves creating value for the existing and future business owners [23, p. 84]. Value creation and competitive advantage are two sides of the same medal, since the long-run value maximization for business owners is possible only when the competitive advantage resulting from a good strategy is achieved and

maintained [36, p. 214]. Zatzick et al. [38] conclude that the usefulness of implementing TQM in terms of improving business performance depends on internal compatibility achieved between the elements of the company as a system by applying this business philosophy.

TQM represents a strategic determination of the company to create value for customers and business owners based on quality. Value for customers stems from the usefulness to price ratio, while the value for business owners is manifested through the economic gain. Very often, customer interests and customer value are emphasized as the ultimate goal of a company. However, the relationship between customers and business owners is not a zero-sum game [10, p. 244]. It should be borne in mind that the key to success is not just price or quality, but the price to quality ratio. Therefore, the company must strive to improve this relationship, which is achieved by improving quality at the same or lower price. This imposes the need for all parts of the company to work towards achieving common goals, recognizing that each person and activity, on the one hand, influences others, whereas, on the other, suffers the influence of others. If quality and profitability are strategically linked, managers must continually improve quality to meet the changing needs of customers. Creating value for customers is a prerequisite for gaining competitive advantage, but at the same time it is necessary to realize value for business owners to ensure sustainable profitable growth. Banks, for example, show an obvious willingness to grant loans and offer better terms to companies that create higher value for business owners, thus giving them additional strength to grow and create value for customers [13]. In this way, successful companies very quickly become separated from the less successful ones which lag behind in the competitive race. The aforementioned clearly indicates the need to create value for business owners. Therefore, a successful strategy leads to a balanced realization of interests of both customers and business owners [10, p. 239].

The impact of TQM on business performance has become the subject of many empirical studies worldwide. Key factors for successful implementation of this concept and methodological frameworks have been identified and served as a basis for many papers of this kind. The

obtained results suggest the impact of TQM on financial performance [1], [4], [7], [8], [9], [12], [14], [15], [16], [22], [32], [36], market performance [25], as well as on competitive advantage [1], [29]. The analysis of the TQM impact on value creation for the customers and business owners in the Republic of Serbia, which is the subject of this paper, is based on the research conducted as a part of the doctoral thesis [28]. The following research hypotheses present the starting point in the research of the abovementioned relationship:

- H-1: The level of TQM implementation has a positive impact on creating value for customers, and
- H-2: The level of TQM implementation has a positive impact on creating value for business owners.

## Methodology

On the basis of the research models examining the relationship between TQM and business performance, used in the previous studies, eight TQM key success factors have been proposed as independent variables: customer orientation, top management commitment, employee focus, process approach, continual improvement, information and analysis, supplier relationship, and corporate social responsibility. In order to determine the level of TQM implementation, the statements related to the aforementioned factors were evaluated by the respondents using a five-point Likert scale (1 = absolutely disagree, 5 = absolutely agree). The dependent variables in the research relate to the company's market and financial performances that reflect the created value for customers and for business owners, respectively. Market share, customer satisfaction, and customer retention rate were used as indicators of the value created for customers. Respondents were asked to evaluate these market performance measures in relation to the leading competitors using a five-point Likert scale (1 = significantly lower, 2 = lower, 3 = no difference, 4 = higher, and 5 = significantly higher). In order to calculate the value created for business owners using economic performance measures, it is necessary to possess data on the cost of equity. However, this information is not published in the company's annual financial statements which are publicly available. Therefore, the following traditional

performance measures were used to determine the value created for business owners: return on assets - ROA (the ratio of operating profit to average value of business assets), return on equity - ROE (the ratio of net profit to average value of capital) and return on sales - ROS (the ratio of net profit to sales revenue). To calculate these financial performance measures, secondary data were collected from the companies' financial statements for 2015. Three control variables are included in the research model to examine their potential impact on research results. These are industry type, company size, and financial leverage. The correlation between independent and dependent variables was examined using the Pearson's correlation coefficient, while the influence of TQM factors on market and financial performance was examined by the regression analysis. Analysis of variance (ANOVA) and Pearson's correlation coefficient were used to examine the relationship between dependent and control variables. Data analysis was conducted using the Statistical Package for the Social Sciences - SPSS v 20.0.

### Sample description

The survey included 141 companies from the Republic of Serbia that are certified for their quality management system being in compliance with the ISO 9001 requirements. A vast number of empirical studies dealing with the impact of TQM on business performance usually employ either possession of the ISO 9001 certificate or a quality award as the criterion for sample identification. When taking into consideration the latest version of the ISO 9001 requirements or quality awards criteria, a very high level of compliance with the TQM principles is noted. Therefore, many authors imply that companies holding a certificate or those being the recipients of quality awards have successfully implemented TQM. Thus, the ISO 9001 certificate and quality awards represent an external, objective and formal recognition of the implementation of the TQM philosophy in a company. The companies which participated in this research operate in manufacturing, trade and service sectors. Since the intention was to achieve even regional participation of companies, the model of random sampling was employed to select the

preferred number of companies which corresponded to the size of the town where the company was located. For each company selected in this way, the possession of ISO 9001 certificate was checked, since there is no up-to-date database of certified companies, nor was it possible to obtain such information from certification bodies.

Experts were asked to provide their opinions and attitudes regarding the adequacy of the questionnaire, and certain adjustments were made accordingly. Furthermore, the questionnaire underwent additional improvement following a pre-test based on the opinions and attitudes of quality managers from six companies recognized in the market in terms of business success. Managers' constructive suggestions contributed to the increased accuracy of the questionnaire statements. The pre-testing provided the necessary basis for proving the comprehensiveness and consistency of the interpreted results. The final version of the questionnaire was sent by email to 228 quality managers who had previously been contacted by telephone and accepted to participate in the survey. Data collection took place from July 2016 to March 2017 with a response rate of 64%. Out of the 145 questionnaires received, 4 could not be used due to the lack of key data. Structure of the sample by industry type, company size and companies' headquarters are shown in Tables 1, 2 and 3, respectively.

## Results and discussion

Pearson's correlation coefficient was used to examine the statistical relationship between the level of TQM

**Table 1: Sample structure by industry type**

Industry type	Frequency	Percentage
Manufacturing	95	67.4
Trade	16	11.3
Service	30	21.3
Total	141	100.0

**Table 2: Sample structure by company size**

Company size	Frequency	Percentage
Micro	17	12.1
Small	63	44.7
Medium	40	28.4
Large	21	14.8
Total	141	100.0



Table 3: Sample structure by company headquarters

City	Frequency	Percentage
Novi Sad	37	26.24
Niš	20	14.18
Subotica	12	8.51
Gornji Milanovac	5	3.55
Pančevo	5	3.55
Šabac	5	3.55
Indija	4	2.84
Jagodina	4	2.84
Kraljevo	4	2.84
Leskovac	4	2.84
Nova Pazova	4	2.84
Aleksinac	3	2.13
Kragujevac	3	2.13
Arandelovac	2	1.42
Bačka Palanka	2	1.42
Beograd	2	1.42
Čačak	2	1.42
Kovin	2	1.42
Total	141	100.00
Lazarevac	2	1.42
Nova Varoš	2	1.42
Vranje	2	1.42
Aleksandrovac	1	0.71
Bačka Topola	1	0.71
Bajina Bašta	1	0.71
Bečej	1	0.71
Bor	1	0.71
Kladovo	1	0.71
Kosjerić	1	0.71
Krnješevci	1	0.71
Krnjevo	1	0.71
Kruševac	1	0.71
Mionica	1	0.71
Pirot	1	0.71
Požarevac	1	0.71
Prokuplje	1	0.71
Vrnjačka Banja	1	0.71

implementation and company performance (Table 4). It points to a statistically significant positive correlation between companies' market performance and all TQM key success factors. The strength of correlation ranges from weak to medium. When it comes to the companies' financial performance, the results of the analysis indicate the following:

- ROA does not correlate with the TQM key success factors;
- ROE is positively correlated with the following TQM key success factors: employee focus, continual improvement and corporate social responsibility;

Table 4: Relationship between the TQM key success factors and business performance

TQM success factors		Market performance	ROA	ROE	ROS
Customer orientation	r	0.353**	0.119	0.081	0.176*
	p	0.000	0.173	0.366	0.043
Top management commitment	r	0.458**	0.112	0.151	0.186*
	p	0.000	0.212	0.095	0.036
Employee focus	r	0.328**	0.127	0.203*	0.162
	p	0.000	0.148	0.023	0.064
Process approach	r	0.249**	0.105	0.137	0.193*
	p	0.005	0.235	0.127	0.029
Continual improvement	r	0.331**	0.130	0.195*	0.184*
	p	0.000	0.140	0.029	0.035
Information and analysis	r	0.347**	0.140	0.141	0.195*
	p	0.000	0.110	0.115	0.025
Supplier relationship	r	0.387**	0.025	0.169	0.034
	p	0.000	0.775	0.056	0.694
Corporate social responsibility	r	0.362**	0.159	0.210*	0.174*
	p	0.000	0.067	0.017	0.044

\* Statistical significance at the level of 0.05

\*\* Statistical significance at the level of 0.01

r – Pearson's correlation coefficient

p – Statistical significance

there is no statistically significant correlation with customer orientation, top management commitment, process approach, information and analysis and supplier relationship; and

- ROS is in a statistically significant positive correlation with the following TQM key success factors: customer orientation, top management commitment, process approach, continual improvement, information and analysis, and corporate social responsibility; there is no statistically significant correlation noted with the factors of employee focus and supplier relationship.

After the correlation analysis, a regression analysis was performed in order to look into the influence of the TQM implementation level on the companies' market and financial performance (Table 5). All TQM key success factors record a statistically significant effect on the dependent variable of market performance which refers to value created for customers. Based on the obtained results, hypothesis H-1 is confirmed. When it comes to financial performance, since the correlation analysis did not establish a relationship between the TQM key success factors and ROA, this dependent variable was not included in the regression analysis. The factors contributing to the

explanation of ROE in a statistically significant way are employee focus, continual improvement, and corporate social responsibility. The individual percentage of the explained variance is low and ranges from 3% to 4%. The factors that made a statistically significant contribution to the explanation of ROS include customer orientation, top management commitment, process approach, continual improvement, information and analysis, and corporate social responsibility. The individual percentage of the explained variable is low and ranges from 2% to 3%. Based on the obtained results, the hypothesis H-2 is partially confirmed, since the influence of the TQM implementation level on one of the three dependent variables was not established.

Analysis of variance (ANOVA) was used to examine the existence of a statistically significant difference between companies belonging to different industry types (manufacturing, trade, service) in terms of market and

financial performance. The analysis found that there was no statistically significant difference (Table 6).

Regarding the statistical significance of differences between the companies of different sizes (micro, small, medium and large) in terms of market performance, the results of the analysis of variance (ANOVA) show that there is no statistically significant difference, while, as far as financial performance is concerned, there is a statistically significant difference regarding ROA between firms of different sizes (Table 7).

Multiple comparisons (Table 8) point to statistically significant differences in ROA between micro and small companies. Specifically, small companies have a higher average ROA compared to micro-companies.

According to Pearson’s correlation coefficient, there is no statistically significant correlation of market performance, ROA and ROS with financial leverage, while the correlation between financial leverage and ROE is

**Table 5: Prediction of the company’s business performance depending on the TQM implementation level**

Dependent variables	Independent variables	Linear regression		
		OR (95%CI)	p	R <sup>2</sup>
Market performance	Customer orientation	0.353 (0.265-0.727)	0.00	0.12
	Top management commitment	0.458 (0.365-0.753)	0.00	0.20
	Employee focus	0.328 (0.158-0.482)	0.00	0.10
	Process approach	0.249 (0.079-0.426)	0.01	0.06
	Continual improvement	0.331 (0.176-0.531)	0.00	0.10
	Information and analysis	0.347 (0.181-0.507)	0.00	0.11
	Supplier relationship	0.387 (0.291-0.703)	0.00	0.14
ROE	Corporate social responsibility	0.362 (0.203-0.530)	0.00	0.12
	Employee focus	0.203 (0.029-0.374)	0.02	0.03
	Continual improvement	0.195 (0.023-0.410)	0.03	0.03
ROS	Corporate social responsibility	0.210 (0.040-0.396)	0.02	0.04
	Customer orientation	0.176 (0.002-0.151)	0.04	0.02
	Top management commitment	0.186 (0.005-0.154)	0.04	0.03
	Process approach	0.193 (0.007-0.133)	0.03	0.03
	Continual improvement	0.184 (0.005-0.138)	0.04	0.03
	Information and analysis	0.195 (0.008-0.127)	0.03	0.03
	Corporate social responsibility	0.174 (0.002-0.124)	0.04	0.02

**Table 6: Differences in business performance depending on the industry type**

Business performance	Industry type								F	p
	Manufacturing		Trade		Service		Total			
	M	SD	M	SD	M	SD	M	SD		
Market performance	4.00	0.71	4.19	0.64	4.19	0.56	4.06	0.67	1.110	0.330
ROA	0.05	0.33	0.09	0.09	0.10	0.12	0.07	0.28	0.392	0.676
ROE	0.02	0.83	0.19	0.19	0.16	0.19	0.07	0.68	0.683	0.507
ROS	0.02	0.28	0.04	0.06	0.06	0.10	0.03	0.24	0.324	0.724

M – arithmetic mean; SD – standard deviation; F – ANOVA test; p – statistical significance.

high and statistically significantly negative (Table 9). The effect of financial leverage on ROE is determined by the difference between ROA and the net interest rate. If the difference is positive, i.e., if ROA is sufficient to cover the debt, growth in financial leverage leads to an increase in ROE. Otherwise, financial leverage has a negative effect causing the use of debt to reduce the owner's yield [23, p. 98].

### Limitations and recommendations for future research

The initial limitations of the current research relate primarily to the lack of a single database of ISO 9001 certified companies. Such a database used to be maintained by the Chamber of Commerce and Industry of Serbia, but it has not been updated for years. Certification agencies are reluctant to disclose the identity of their clients, considering it a business secret. Even at the international level, there is no database of certificates issued. In this respect, companies were selected randomly and just the ones that possessed ISO 9001 certificate were included in the research. Another significant limitation was the lack of

motivation of quality managers in the chosen companies to participate in the research. Data collection on the basis of respondents' estimations entails the problem of objectivity when evaluating the questionnaire statements. Respondents are also believed to have different perceptions, which would consequently result in one and the same phenomenon being evaluated differently.

It should be noted that it is not uncommon for a business to fail after implementing a quality management system and obtaining ISO 9001 certificate, or even winning a quality award. There are numerous examples of such a phenomenon in the Republic of Serbia. The main reason is the inability to understand the importance of quality as a strategic resource. The failures are also contributed to the lucrative motives of certification bodies which, being in competition with each other, base their business strategies on a lower degree of rigor in order to reach as many clients as possible. Besides being noticed by different authors worldwide, this phenomenon is often confirmed by quality managers who do not hide that the quality management system does not function effectively despite the companies' being certified. In view of the foregoing,

**Table 7: Differences in business performance depending on the company size**

Business performance	Company size										F	p
	Micro		Small		Medium		Large		Total			
	M	SD	M	SD	M	SD	M	SD	M	SD		
Market performance	3.92	0.68	4.16	0.59	4.00	0.68	3.84	0.86	4.04	0.67	1.428	0.238
ROA	-0.11	0.73	0.11	0.11	0.07	0.10	0.08	0.14	0.07	0.28	2.852	0.040
ROE	0.13	0.17	0.17	0.18	0.01	0.76	-0.23	1.61	0.08	0.69	1.550	0.205
ROS	-0.08	0.32	0.09	0.19	0.02	0.27	-0.02	0.20	0.03	0.24	1.672	0.060

M – arithmetic mean; SD – standard deviation; F – ANOVA test; p – statistical significance.

**Table 8: Differences in financial performance depending on the company size, multiple comparison**

Financial performance	(I) Company size	(J) Company size	Mean difference (I-J)	p
ROA	Micro	Small	-0.21882 <sup>*</sup>	0.021
		Medium	-0.17828	0.124
		Large	-0.18777	0.176
	Small	Micro	0.21882 <sup>*</sup>	0.021
		Medium	0.04054	0.892
		Large	0.03105	0.973
	Medium	Micro	0.17828	0.124
		Small	-0.04054	0.892
		Large	-0.00949	0.999
	Large	Micro	0.18777	0.176
		Small	-0.03105	0.973
		Medium	0.00949	0.999

p – statistical significance

**Table 9: Correlation between business performance and financial leverage**

Business performance		Financial leverage
Market performance	r	-0.122
	p	0.184
ROA	r	-0.093
	p	0.298
ROE	r	-0.841 <sup>**</sup>
	p	0.000
ROS	r	-0.072
	p	0.420

\* Statistical significance at the level of 0.05  
 \*\* Statistical significance at the level of 0.01  
 r – Pearson's correlation coefficient  
 p – Statistical significance

it seems that quality management is in the shadow in a number of companies where the requirements of ISO 9001 are implemented irregularly and without the necessary commitment. Babić [2] also noticed that there are cases where the possession of certificates has only a formal character, as standards are not properly implemented, which results in the inability to observe the expected benefits. Considering the situation from this point of view, a question arises as to how to adopt the TQM philosophy that brings quality into the very focus of strategic management. Although in most cases the familiarity with the TQM concept and its implementation is emphasized, on the basis of the conducted research authors conclude that it is practiced only in a small number of companies.

Quality management is rarely considered from a strategic management point of view, which is a major drawback, since this process is integrated into a business strategy leading to competitive advantage. The idea behind the TQM philosophy is to achieve and maintain competitive advantage and, consequently, generate value for business owners in the long run. A company can only survive and prosper if it nurtures customer and owner relationships in a balanced manner, which is in the hearth of the strategic management process. The existing literature in the field of quality management presents some tools for quality improvement. Surprisingly, they do not include a value chain which is a strategic management tool for analyzing the internal environment. Since quality is the result of all activities in the company, the use of a value chain, which breaks down processes into individual activities, enables the identification of value drivers and cost drivers. Furthermore, they can be affected by the chain configuration so as to maximize the value created for customers and consequently that for business owners. Also, the Balanced Scorecard, as a strategic management tool that ensures successful strategy implementation, is not among the offered quality management tools in the domestic professional literature. The calculation of the value created for business owners makes another specific limitation. Different rates of return used as business performance indicators do not give a complete insight into the value created for owners.

In order to improve the reliability and availability of relevant information for the future research, it is suggested to conduct a case study where researchers will independently carry out measurement, comparison and evaluation. In this way, it could be determined for each company whether it has made progress in adopting the TQM philosophy and how it has affected its business performance, primarily in terms of value created for customers and business owners.

## Conclusion

Quality is considered to be one of the most important factors that determine the long-run vitality of a business. The last stage in the evolution of quality management is known as Total Quality Management (TQM). This phase is often referred to as strategic quality management since quality management is approached from a strategic perspective, in a comprehensive manner. TQM is a quality-based strategy that promotes company-wide quality through a strong focus on customers, environment and change. The word total reflects the concern of all employees about the quality of each activity in the company and pursuit to achieve business excellence. The basic idea is to constantly look for opportunities to create more value for customers, in order to achieve and maintain competitive advantage and, consequently, create value for business owners. Since employees are the bearers of value creation for both customers and business owners, they also need to consume some of the created value in order to be motivated to continually improve quality. This can be achieved by introducing rewards for the improvements made to the compensation system.

From the strategic management point of view, the importance of TQM is reflected in the ability to ensure distinctive competence, which represents the strength of a company that can hardly be imitated. This involves developing and continuously improving key resources and adapting them to the needs of the business. Intangible assets, which include intangible resources and the relationships between them, are of particular importance as they are related to the context

of a company. Generating intangible assets is a complex and time-consuming process. They are characterized by a rise in value during use, an inability to be imitated and substituted, thereby meeting all the criteria of strategic resources that allow for the acquisition of sustainable competitive advantage. Competitive advantage arises as a result of good strategy and represents an assumption of value creation for business owners as the ultimate goal of a modern company. Based on the TQM philosophy, a family of international ISO 9000 standards has been defined to direct companies towards continuous improvement of business quality. Given that TQM is considered a kind of business philosophy, these standards represent a certain form of its materialization.

The TQM concept has attracted much attention because of the effects in terms of dramatically improved business performance. However, there are numerous criticisms of this concept related to the examples of its inefficient implementation. TQM should not be seen as a recipe for success or be mechanically adopted without the necessary adjustments and changes to the existing practices and ways of thinking. An ineffective implementation can be the result of unrealistic expectations, lack of faith in success, lack of motivation and inability to implement the change. Unclear priorities and conflicting goals of a company most often result in a negative impact on the employees' attitude towards quality. The use of the Balanced Scorecard, which is a popular strategic management tool, enables communication of the strategy, monitoring the achievement of goals and providing early feedback, which positively impacts the motivation of management and employees.

The presented empirical study on the impact of TQM on value creation for both customers and business owners in the Republic of Serbia covered 141 companies that have a certificate proving the compliance of their quality management system with the requirements of ISO 9001. Primary data were collected using a questionnaire completed by quality managers, while secondary data were obtained from the companies' annual financial statements. The results of the research show that all TQM key success factors have a statistically significant positive impact on the

market performance. Regarding the financial performance, the TQM factors of employee focus, continual improvement and corporate social responsibility showed a statistically significant positive impact on ROE, while the factors of customer orientation, top management commitment, process approach, continual improvement, information and analysis, and corporate social responsibility showed a statistically significant positive impact on ROS. The study also used three control variables, i.e., industry type, company size, and financial leverage to determine their potential impact on dependent variables. The results of the analysis show that small companies have a higher average ROA than micro-companies and that the correlation between financial leverage and ROE was statistically significantly negative and high. The achieved results point to the conclusion that the TQM implementation level positively affects company's market and financial performance, supporting thus creation of value for both customers and business owners. The results also show that, in the case of financial performance, only specific TQM key success factors show statistically significant influence. This further implies that special attention should be paid to them in order to maximize value for business owners. It should also be noted that company size and financial leverage could impact the results, as the former statistically significantly differs between small and micro-companies, while the latter shows negative correlation with ROE.

Limitations of the research refer to the lack of a single database of certified companies in the Republic of Serbia, as well as to the unwillingness of certification bodies and some quality managers to cooperate. During data collection, it was found that in some cases companies did not apply the standards consistently, which is why some of them unsurprisingly experienced a downfall after the process of certification. There are also issues of respondents' subjectivity, as well as the ways of measuring created value for business owners. In order to improve the reliability of the future research results, it is recommended to conduct a case study so as to access all the relevant data for objective identification of the TQM implementation level, as well as its impact on value creation for both customers and business owners.

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