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QUALITY AS A FACTOR OF COMPETITIVENESS IN SERBIAN ENTERPRISES

Gorica Bošković, PhD*

Vesna Janković-Milić, PhD*

Marija Anđelković-Pešić, PhD*

Abstract: *Business activities in contemporary conditions is characterized by continuously finding a source of competitive advantage. This includes the development of specific resources and capabilities, which will ensure the competitiveness of the company. In this context, the business quality improvement is the important factor for the enterprises' survival and development. This paper presents the results of statistical analysis related to the ways for the quality improvement in the selected sample of companies from Serbia.*

Keywords*: Quality, Strategy, Competitiveness, Correlation Analysis.*

1. Introduction

With the strengthening of international trade and the weakening of the internal market, companies take more attention to the competitiveness, as the ability to sell standardized products at lower prices, differentiated products at the same prices as competition or a premium price compared to competing on the basis of major differences between the added value and cost. Consumers are opting for less and less of a lower quality product, regardless of the lower price. This shows that companies which try to provide a competitive advantage must list the factors of business success in the new economy starting from the quality.

During the 1980s, quality became a critical dimension of competitiveness. During the 1990s, its importance grows and continues unabated until nowadays. From that reason, quality management is an important segment of business management. Traditional concept of quality was primarily oriented on production, and the technical characteristics and specifications represented standard for assessing the quality of the product. In this sense, quality management implies defining and implementing procedures necessary to create a product that will own characteristics matched with standards, and determined on the basis of customer requirements (Djuričić, Ćuk, Dulanović, Ristanović, 1996).

* University of Niš, Faculty of Economics; e-mail: gorica.boskovic@eknfak.ni.ac.rs, vesna.jankovic@eknfak.ni.ac.rs, marija.andjelkovic@eknfak.ni.ac.rs
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Today the concept of quality observes bearing in mind the company's operations as a whole, and given the management of the company. In this sense, the quality should be treated from operational, but also from strategic aspect.

2. The Analysis of Enterprises' Competitiveness Factors

The first thing an enterprise has to find out is what actually means to be competitive at the specific market or what customers at the specific or target market expect from the enterprise and its products and services. This assumes the analysis of internal and external environment. The analysis of external environment should point out customers' needs and expectations, on one side, and competitors' actions and performances, on the other side. External environment is actually competitive environment, which is usually a determined by branch or industry. Determinants of industry are products and consumers, and, in this sense, it represents a group of companies whose products are similar or related to each other, as well as the market in which you sell consumer products (Todorović, Djuričin, Janošević, 2000, p.212). However, bearing in mind that the boundaries between the industries are fluid, it is not sufficient to analyse competitive environment only from the aspects of competition in the industry, through power of suppliers and consumers, but also in terms of potential competitors, as well as companies that produce substitutes, what is known as the concept of the five competitive forces (Porter, 1980).

The analysis of internal environment should point out enterprise's strengths and weaknesses in the continual process of providing satisfaction of the customers. This analysis concerns an enterprise value chain and involves a systematic approach to identifying the activities from which the company has been providing competence (possess the necessary resources and capabilities).

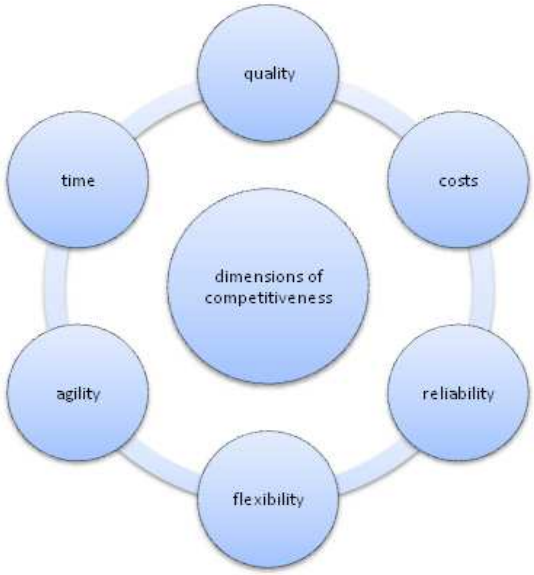
This approach, which assumes that the external environment analysis precedes the internal environment analysis, represents the traditional approach to competitiveness analysis. Thus, according to this approach the analyses of market opportunities and industry, and the formulation of strategy, precedes defining the resources required to implement them. This is a significant lack of traditional approach, since inadequate resources and lack of capacity may jeopardize the implementation of strategy.

According to the resource-based approach, competitive advantage proceeds from the unique combination of resources and capabilities that create value for customers, and which competitors can difficultly imitate or acquire, which are rare and which cannot be substituted. Proponents of this approach believe that the internal environment is the basis for the formulation of a strategy, and that managers must first paid attention to the analysis of resources (financial, physical, human and structural). For that reason, the company is viewed as a collection of resources and capabilities that provide the basis for its competitive advantage and strategy. Although the identification of customers' needs is the requirement for achieving competitiveness, it cannot be the basis for the formulation of strategy, because the needs of customers are changeable. Therefore, the resources and capabilities that the enterprise owns are more sustainable basis for establishing identity and formulate a strategy of the enterprise (Grant, 2001).

Competence alone is not sufficient; it is necessary to transform it into competitiveness. Competitive advantage is built on the activities of the value chain for which the enterprise has the resources and capabilities that are, compared to its competitors,

superior for satisfying the needs of consumers (Chase, Jacobs, Aquilano, 2004). Depending on what is the basis of competitive advantage, few dimensions of competitiveness may be identified. The dimensions of competitiveness are shown in Figure 1.

Figure 1. The dimensions of competitiveness



Source: Chase, R., Jacobs, R., Aquilano, N. (2004) Operations Management for Competitive Adventage. McGraw Hill: Irwin

The above mentioned factors of competitiveness can be classified into three dimensions:

- Costs (in terms of product price and providing a cheap products),
- Quality and reliability (in terms of product functionality and continuing to fulfil customer requirements, which means providing product wanted by customers and delivering them when it is promised),
- Time and flexibility (in the sense that the product is available to consumers when they need it and that new products and processes are introduced according to changed customers' requirements).

Some authors emphasize that the dimensions of competitiveness are mostly in trade-off relationships. This means that an enterprise cannot be competent for all dimensions of competitiveness. According to this theory, in the 1960's they formulated The trade-off model, which suggested that it is not possible to achieve, at the same time, high quality, low costs and on-time delivery of products (Rao, Carr, Dambolena, Kopp, Martin, Ralfi., Schlesinger, 1996). When Japanese companies showed that it is possible to timely deliver quality and cheap products, this model was found unreasonable and it is rejected. It has been changed with "The sand tower" model, introduced by Ferdows i DeMeyer (Figure 2).

Figure 2. The sand tower model of competitiveness

Source: Ferdows K., DeMeyer, A. (1990) Lasting improvements in manufacturing performance: in search of a new theory. Journal of Operations Management, 9(2): p. 175

According to "The sand tower" model, quality is the basis for providing competitiveness, and it should be something that an enterprise has to focus first. When there are conditions for providing quality of characteristics wanted by the customers, the next thing is to sustain that quality level, which actually means reliability. The speed of responding to customers' demand in terms of existing, improved or new products it the third element, which supplements the previous two. Finally, costs are something that should be paid attention to, but their decreasing will appear as a consequence of all mentioned dimensions of competitiveness.

Though "The sand tower" model significantly better describes the way an enterprise has to provide and sustain its competitiveness, it may be improved also. Nevertheless, the first three dimensions of competitiveness must not be observed as the stages that should be provide gradually, but as three elements of the same process – make customers satisfied. Therefore, they should be provided parallel and not one after the other, and therefore the model is called "The model of parallel acting" (Figure 3).

Figure 3. "The model of parallel acting"

This model assumes that quality, reliability and flexibility (speed) are equally important, and should be provided simultaneously. The costs, as the dimension of

competitiveness, are on the top of the pyramid, since they decrease as a consequence of quality (product has the characteristics wanted by the customers), reliability (there are no defect products or defect units during processes' realization in the long run) and flexibility and speed (the products and processes can be easily and fast adopted according to the changed customers' requirements and delivered on time). The final effect of all dimensions of competitiveness is increasing of financial results (e.g. profit).

3. Quality Analysis in Serbian Enterprises – Research Methodology and Results

In order to check the extent to which Serbian enterprises follow the trends in business improvement, and if they are on track to increase quality as a factor of competitiveness, empirical research was conducted in February 2012. Data were collected by the questionnaire concerning the dimensions of competitiveness and the way of providing their improvement. The subject of the research was Serbian economy or the enterprises in Serbia, but the statistical analysis was performed on the sample of 62 enterprises.

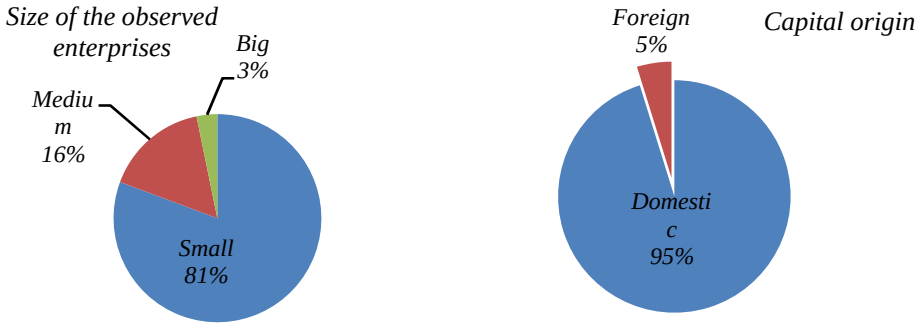
The task of the research was carried out through the following activities:

1. Identification of the key dimensions of competitiveness,
2. Establishment of connection between key dimensions of competitiveness and the usage of the opportunities for improving dimensions of competitiveness,
3. Formulation of the recommendations for managers of the enterprises in Serbia.

The methods which are used in order to conduct analyses listed above are: descriptive statistics, correlation analysis and Chi-square test.

The questionnaire used in this research has two parts. The first one has comprised the basic questions concerning enterprise size, capital origin, industry, as well as the amount of profit (loss). The second part has comprised questions concerning the key dimensions of competitiveness: quality, costs, service and promotion. The opportunities for the improvement of these dimensions are expressed as: focus on customers, process-based management, and empowerment of employees. Only part of the results' analysis is presented in this paper.

Figure 1. The structure of the sample according to the size and capital origin



Source: Author's Preview

The first attribute in the analysis of the sample structure is the size of observed enterprises (Figure 1). This attribute refers to the number of employees. The capital origin is the second attribute in the sample structure analysis and, according to Figure 1, the sample is dominated by domestic companies.

The one of the questions in the questionnaire was related to the enterprises' result in the previous year. Obtained information is shown in the Table 1.

Table 1. The structure of the sample according to the results of the observed companies in 2011

Result	Number of enterprises	% share
Enterprise covered the variable costs and fixed part	4	6.5
Enterprise covered the total cost, but didn't made income	12	19.4
Enterprise made an income	34	54.8
Enterprise made an economic profit (income minus the costs of equity)	12	19.4
Total	62	100.0

The data presented in the table above shows that more than a half observed enterprises in the sample operated successfully in the 2011, i.e. made an income and economic profit. Only 6.5% of the total number of the observed enterprises couldn't cover the business costs.

Group of question related to the quality improvement in the observed enterprises starts with question about ISO standard adoption. This question answered positively by 38 respondents, which is 61.3% of the surveyed enterprises. The next question was whether the company has adopted the principles of modern concepts such as *Just-In-Time, Total Quality Management, Six Sigma*. Almost half of the respondents didn't answer to this question. Within respondents who gave the answer to this question, most frequently adopted concept is *Total Quality Management* (Table 2).

Table 2. The structure of answers related to the adopted principles of modern concepts

Quality improvement concept	Number of enterprises	% share
Just-In-Time	11	17.7
Total Quality Management	15	24.2
Six Sigma	6	9.7
No answer	30	48.4
Total	62	100

An important instrument for improving the quality of the products is statistical process control (Andjelković Pešić, Janković-Milić, Stanković, 2012). However, the research results show that quality control is still observed primarily in terms of finished products or services. In that sense, quality control of final products is present in 45.2% of observed enterprises; while statistical process control is still not sufficiently present (16.1% according to Table 3).

Table 3. The methods for providing quality of products (services)

Method	Number of enterprises	% share
Quality control of the finished products or services	28	45.2
Quality control of product parts or intermediate products	8	12.9
Control of certain operations during the process	16	25.8
Statistical process control	10	16.1
Total	62	100

The one of the key questions for the analysis presented in this paper was related to the to the impact of assessment of certain ways of securing competitive advantage (price, quality, service, promotions) on the orientation of consumers (in terms of selection of products of specific company) in observed enterprises. The respondents were able to evaluate the impact of specific ways with marks from 1 (lowest impact) to 5 (highest impact). The results concerning to that question are shown on the Table 4.

Table 4. Descriptive statistics of the elements for providing competitive advantage in customer satisfaction

	Minimum	Maximum	Mean	Std. Deviation
Price	1	5	3.4516	1.05080
Quality	2	5	4.4516	0.67594
Service	3	5	4.2581	0.71695
Promotion	1	5	3.3871	1.07665

According to the data presented in Table 4, it may be concluded that managers of the enterprises in Serbia realize the importance of quality for gaining competitive advantage in modern, dynamic environment. This dimension of competitiveness has the highest average mark (4.45) compared to the other dimensions. At the same time, for this dimension standard deviation is almost the lowest, which means that attitudes of managers concerning the importance of quality are pretty balanced. The lowest mark has dimension Promotion (3.38). This means that managers have realized that in the long run customers' satisfaction is more affected by quality and service.

In order to examine whether there is a link or interdependence between the elements for providing competitive advantage in customer satisfaction in observed enterprises, the correlation analysis was performed. The calculated values of appropriate correlation coefficient, named Spearman rank correlation coefficient, are presented in the Table 5.

Table 5. The values of Spearman`s correlation coefficient between ways for providing competitive advantage

	Price	Quality	Service	Promotion
Price	1			
Quality (*p*-value)	0.172 0.181	1		
Service (*p*-value)	0.223 0.081	0.653** 0.000	1	
Promotion (*p*-value)	0.018 0.887	.157 .222	.147 .255	1

**. Correlation is significant at the 0.05 and 0.01 level

According to the results from the Table 5, it can be concluded that highest positive correlation exist between variables Quality and Service (0.653). This correlation is also statistically significant. Correlation between all other observed variables is also positive, but not statistically significant.

Forasmuch the previous results related to the significance of quality improvement in competitive advantage providing, the question about connection between quality importance and achieved business results came up. For that reason the statistical method, named Chi-square test, was applied. First, the results which are related to the quality and the achieved business results are crossed and contingency table (Table 6) was created.

Table 6. Contingency table

Result	The quality importance				Total
	2	3	4	5	
Enterprise covered the variable costs and fixed part	0	0	4	0	4
Enterprise covered the total cost, but didn't made income	2	2	8	0	12
Enterprise made an income	0	0	18	16	34
Enterprise made an economic profit (income minus the costs of equity)	0	0	6	6	12
Total	2	2	36	22	62

According to the data from the Table 6 it can be seen that all enterprises which made income in 2011, attach the great importance to quality as competitive advantage. The same conclusion goes for enterprises that made an economic profit in 2011.

Table 7. Results of Chi-Square Tests

	Value	Degrees of freedom	(p-value)
Pearson Chi-Square	25.993	9	.002
Likelihood Ratio	27.727	9	.001

The Chi-square test realized value (Table 7) that is 25.993 leads to conclusion that there is the strong dependence between the importance of quality improvement and business results. This dependence is also statistically significant (p-value=0.002). According to obtained results, the general conclusion about the strong dependence between quality improvement and business results can be made.

4. Conclusion

In modern conditions, the term "quality" should not only involve the quality of finished products and their respective processes, but also the quality of business management, which is characterized by a simultaneous focus on all dimensions of competitiveness and the quality, time and cost, with promotion the above dimensions realized on the basis of application and dissemination of knowledge. In this sense, the managers must apply the concept of management that requires a multi-dimensional focus, and that can help them to improve all dimensions of competitiveness in their enterprises.

Based on the fact that the quality, both in theory and practice, has been promoted as the most important dimension of competitiveness, improvement of quality stands out as the primary task of enterprises in Serbia.

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KVALITET KAO FAKTOR KONKURENTNOSTI U SRPSKIM PREDUZEĆIMA

Rezime: Poslovanje preduzeća u savremenim uslovima karakteriše konstantno traganje za izvorima konkurentske prednosti.Između ostalog, to podrazumeva razvoj specifičnih resursa i mogućnosti pomoću kojih bi se obezbedila konkurentnost preduzeća. Poboljšanje kvaliteta predstavlja, u tom kontekstu, važan faktor opstanka i razvoja preduzeća. U ovom radu su predstavljeni rezultati statističke analize koja se odnosi na načine za unapređenje kvaliteta u uzorku preduzeća iz Srbije.

Keywords: kvalitet, strategija, konkurentnost, korelaciona analiza.