VI INTERNATIONAL CONFERENCE

QUALITY SYSTEM CONDITION FOR SUCCESSFUL BUSINESS AND COMPETITIVENESS

PROCEEDINGS

ASSOCIATION FOR QUALITY AND STANDARDIZATION OF SERBIA

CENTER FOR QUALITY KRAGUJEVAC

FACULTY OF MECHANICAL ENGINEERING EAST SARAJEVO

CENTER FOR QUALITY PODGORICA

KOPAONIK, 28/11.-30/11/2018

ASSOCIATION FOR QUALITY AND STANDARDIZATION OF SERBIA

VI INTERNATIONAL SCIENTIFIC CONFERENCE

QUALITY SYSTEM CONDITION FOR SUCCESSFUL BUSINESS AND COMPETITIVENESS

PROCEEDINGS

Kopaonik, 28/11 – 30/11/2018

Organizer

ASSOCIATION FOR QUALITY AND STANDARDIZATION OF SERBIA
e-mail: office@aqss.rs
web: www.aqss.rs

Co-organizers

CENTER FOR QUALITY FACULTY OF MECHANICAL ENGINEERING IN KRAGUJEVAC
web: www.cqm.rs
e-mail: cqm@kg.ac.rs

CENTER FOR QUALITY OF FACULTY OF MECHANICAL ENGINEERING PODGORICA
web: www.cq.ac.me
e-mail: centerforquality@ac.me

Висока техничко технолошка школа струковних студија Крушевац

COLLEGE OF TECHNICAL STUDIES & TECHNOLOGY KRUSEVAC

Web: www.vhts.edu.rs
e-mail: info@vhts.edu.rs

MIDDLE AND SOUTHEASTERN EUROPE QUALITY INITIATIVE
e-mail: miroslav.drljaca1@zg.t-com.hr
web: www.hdmk.hr

МАШИНСКИ ФАКУЛТЕТ ИСТОЧНО САРАЈЕВО

MAŠINSKI FAKULTET UNIVERZITETA U ISTOČNOM SARAJEVU
web: www.maf.ues.rs.ba

with support

Republic of Serbia
Ministry of Education, science and Technological Development
www.mpn.gov.rs

Republic of Serbia
Ministry of Economy
www.privreda.gov.rs

Republic of Serbia
Ministry of Trade, Tourism and Telecommunications
www.mtt.gov.rs

Accredtiation body of Serbia
www.ats.rs

Institute for standradization of Serbia
www.iss.rs

Serbian Association of Employers
www.poslodavci.rs

PROCEEDINGS

Publisher:

Association for quality and standardization of Serbia

For publisher :

Professor Zoran Punoševac PhD

Print:

SaTCIP d.o.o ,Vrnjačka Banja

No. of copies :

100

ISBN 978-86-80164-08-3

SCIENTIFIC COMMITTEE

Prof. Zoran Punoševac Ph.D.(Serbia) - president
Prof. Slavko Arsovski Ph.D.(Serbia)- vice president
Prof. Zdravko Krivokapić Ph.D.(Crna Gora) - vice president
Prof. Slavisa Moljevic PhD (Bosnia and Herzegovina) - vice president
prof. Miladin Stefanovic Ph.D (Serbia) - vice president
Prof. Milan J. Perović Ph.D.(Crna Gora)
Prof. Aco Janićijević Ph.D.(Serbia)
Prof. Radomir Radovanović Ph.D. (Serbia)
Prof. Zorana Milosavljević Ph.D.(Serbia)
Prof. Dušan Cogoljević Ph.D (Serbia)
Mr. Sc Milenko Raguž (Bosnia i Herzegovina)
Prof. Adolfo Senatore Ph.D. (Italy)
Prof. Aleksandar A. Boljsakov Ph.D. (Russia)
Prof. Ani P. Petkova Ph.D.(Russia)
Prof. Carol Zoller Ph.D.(Romania)
Prof. Jozef Peterka Ph.D. (Slovakia)
Sc Miroslav Drljača Ph.D. (Croatia)
Prof. Krešimir Buntak Ph.D. (Croatia)
Prof. Stanislav Borkovski Ph.D.(Poland)
Prof. Sulejman Meta Ph.D.(Republic of Macedonia)
Prof. Marianna Kazimierska-Grebosz Ph.D. (Poland)
Prof. Nikolaos Vaxevanidis Ph.D.(Greece)
Sc Dobrila Jakić Dimić Ph.D.(Serbia)
Prof. Mirjana Stevanović Ph.D (Serbia)
Janez Benčina Ph.D.(Slovenia)
Assoc. Prof. Raycho Ilarionov Ph.D.(Bulgaria)
Prof. Valentin Nedeff Ph.D.(Romania)
Prof.dr Viktor Vladimirovic Timcenko Ph.D.(Rusija)
Prof.ing Jiri Plura Csc (Czech)
Prof.Larisa Gromova Ph.D. (Russja)
Prof. Vladimir A. Fedorinov Ph.D.(Ukraine)
prof. Elizabeta Mitreva, Ph.D.(Republic of Macedonia)

ORGANIZING COMMITTEE

Prof.dr Zoran Punoševac Ph.D., president
prof.dr Zdravko Krivokapić Ph.D., vicepresident
prof.dr Slavko Arsovski Ph.D. , vicepresident
prof.dr Slaviša Moljević Ph.D., vicepresident
prof.dr Miladin Stefanovic Ph.D., vicepresident
Ana Jelenković, secretary
Ivan Vesić
Miloš Punoševac

P R E F A C E

Dear colleagues, ladies and gentlemen, followers of quality, welcome to the 20thNational and 6th International Conference organized by the Association for Quality and Standardization of Serbia, named QUALITY SYSTEM CONDITION FOR SUCCESSFUL BUSINESS AND COMPETITIVENESS, within which the following events are organized:

- *45th National Quality Conference of Serbia*
- *22nd Counselling SQM 2018*
- *2nd National Quality Conference of Bosnia and Herzegovina*
- *2nd International Conference for Quality Research*
- *12th International Quality Conference*
- *12th International conference ICQME 2018*
- *3rd International conference on Quality of Life*

Significant changes are happening on the global plan of quality infrastructure, which strive to constant improvement and advancement.

As far as our country is concerned, we have a trend of a more serious understanding of the need for quality whose task is to contribute to a higher quality business through the quality of products and services, education, health care, public sector, politics, media, and by that, to the quality of life of our citizens.

It is of high importance for the Republic of Serbia to put all the available resources in function of advancement of economy. We believe that the resources are not exploited enough, especially the human potential, that is, scientists and experts who work with the system of quality.

By organizing scientific conferences so far, including this one, 20th National and 6th International Conference, the Association of Quality and Standardization wishes to give a scientific and expert contribution to the tendency of economic growth, and thus to the improvement of the standard of life.

A larger number of topic fields will be processed on this scientific conference related to: Quality system condition for successful business and competitiveness; Improvement of quality infrastructure management systems; Development and establishment of management (in theory and practice); Management by knowledge; Quality of products; Audit and certification; Global quality; The Culture of quality; Management systems in the public sector; Quality and risk; Information system in the function of management system development; Motivation and quality; Organizational behaviour, leadership and management; Quality and quantity of life; Influence of science and technology on the quality of life; Local, regional and global quality of life.

Organization of "round tables" on the topics:

- *Development and implementation of system for performance evaluation of high education institutions and systems in Serbia;*
- *Availability and safety of food: From vision to reality;*
- *We will process the topics and draw conclusions for two very significant fields such as high education and food safety.*

Papers published in three collections give a possibility to leaders in the real and public sector to find the right strategy, politics, vision and mission; to strengthen their competitive position on the market by a good setting of goals and their realization, and to increase the satisfaction of their customers and users of their services.

This year, 20th National and 6th International Conference will be organized in cooperation with:

- *The Centre of Quality of Faculty of Engineering in Kragujevac*
- *The Centre of Quality of Faculty of Mechanical Engineering in Podgorica*
- *Faculty of Mechanical Engineering, University in East Sarajevo*
- *College of Applied Studies In Technics and Technology from Krusevac*
- *Middle and South East countries quality initiative*

with the support of

- *Ministry of Economy Of the Republic of Serbia*
- *Ministry of Education, Science and Technological Development*
- *Ministry of Trade, Tourism and Telecommunications*
- *Serbian Association of Employers.*

On behalf of the organizational board of the 20th National and 6th International Conference, I would like to thank all the authors and co-authors of papers, co-organizers, sponsors and donators, means of public information, participants from Serbia and abroad who helped us organize this conference.

The Chairman of the Organizational board
Professor Zoran Punoševac PhD

CONTENTS

ASSOCIATION FOR QUALITY AND STANDARDIZATION OF SERBIA
20th national and 6th international conference
QUALITY SYSTEM CONDITION FOR SUCCESSFUL BUSINESS AND COMPETITIVENESS
Kopaonik, Kraljevi Cardaci, 28.11. - 30.11.2018.

MANAGEMENT WITH THE COST OF QUALITY IN THE HOTEL INDUSTRY OF MACEDONIA

Prof. Elizabeta Mitreva[1]

Julijana Sazdova[2]

Abstract: *This paper presents the findings of the research regarding the analysis of the costs of quality in the hotel industry in Macedonia, the ability of managers to build up a good system for analysing the cost of quality, as well as the directions that they need to go through in the process of optimization of the business processes.*
The need for quality cost analysis can help managers understand the impact of poor quality on financial results and the poor image of hotels. First, it will help managers to increase their activities to improve the quality of business processes, products / services.
Designing and applying the total quality management system rather than classical quality control of products / services implies the design and application of the methodology for optimizing business processes and changing the organizational structure where the quality is integrated into each segment of the operation.

Keywords: *Internal standardization; Cost of quality; TQM (Total Quality Management) system; Optimization of business processes.*

JEL Classification*: C83, D23, L15, L83, M21*

1. INTRODUCTION

No activity in the world in the last few decades has had such an increase in development and impressive results as tourism. Thanks to such expansion, tourism became one of the most important social and business phenomena from the end of the last and the beginning of this century as a result of the dynamic development of modern information systems and traffic.

The expansion of tourism on international scale is a consequence of the development of the numerous activities that participate in the creation of the tourism product, among which a significant role is played by the hotel industry. Thanks to its facilities, catering and other, hotel business has strongly encouraged tourists to use the services of accommodation and other

[1] Elizabeta Mitreva, Faculty of Tourism and Business Logistics, Gevgelija, University "Goce Delcev" - Stip, Macedonia, elizabeta.mitreva@ugd.edu.mk; elizabeta.mitreva@gmail.com
[2] Julijana Sazdova, Faculty of Tourism and Business Logistics, Gevgelija, University "Goce Delcev" - Stip, Macedonia, julijana.sazdova@yahoo.com

accommodation related services (food, entertainment, recreation, trade, etc.). In the wide range of facilities offering accommodation services, i.e. different types of categorized accommodation facilities (hotels, motels, boarding houses, apartments), the hotels are the most homogeneous part of this activity, because through their functioning all important features of the business processes in relation of other types of accommodation are reflected. As such, they present the total accommodation offer and represent a map for the hotel industry, regardless of whether they operate independently (within a certain system) or a hotel group.

The hotel offer is specific in terms of the spatial, technical and technological and organizational - personnel capabilities, which within a whole provide a complete catering service (accommodation with different combinations of food and beverage and other additional services).

The performance of the hotel activity is conditioned by the existence of objects of purpose character which fulfill spatial, technical and technological, sanitary and hygienic and organizational - personnel standards and represent a guarantee for providing satisfaction to those staying in them. The orientation towards the quality of hotels in meeting the needs and demands of the tourists becomes an imperative, an important element for distinguishing the products and a key element of the loyalty of the tourists towards certain tourist places, that is, the choice of a hotel. The orientation towards the quality of hotels in meeting the needs and demands of the tourists becomes an imperative, an important element for distinguishing the products and a key element of the loyalty of the tourists towards certain tourist places, that is, the choice of a hotel. The essence of the quality orientation is reflected in its ability, at the same time, to provide market expansion, increase productivity, optimize costs and raise the level of quality. This approach is present both in hotels that operate independently and those that are integral to large companies and hotel groups through joint ventures, franchises, management or other integration processes. In tourism and hotel management, the sale of services depends on the quality of service that should correspond with the expectations of the guests and the achieved level of their satisfaction. The realization of this pleasure implies permanent monitoring of the requirements of the modern tourist, respect of the established standards and continuous improvement of the hotel offers, which is also the essence of the quality management and hotel management.

The ranking of quality in hotel business is expressed through the categorization of hotel facilities. The categories of hotels around the world are largely equal in quality of service, especially when it comes to hotel groups, where the level of quality is guaranteed in the same circle of the same chain regardless of the country in which the hotel is located. Quality increases the value of the service in the users' eyes, and thus creates room for higher price formation. High quality, capable of higher prices, reduces the cost of errors and their repetition, which positively affects the overall financial results. In hotels, there is a simultaneous process of production and consumption of hotel services. Unlike the manufacturing sector where the production and consumption processes are spatially and temporally separated, in the hotel industry these processes take place simultaneously. The separation of these processes in the production activity allows the elimination of bad (blemish) products before they reach their user. While in hotels, numerous products are produced and used at the same time, so there is no possibility of eliminating the bad product / service (the current position of the receptionist, the cookbook or the waiter), nor their storage. The poor service leads to guest's dissatisfaction. Namely, most of the individual services are delivered at certain intervals of the hotel's guest stay cycle that conditions the simultaneous production and usage (consumption) of the services. This is a serious management problem, because demand is identified by consumption that becomes a determining generator of the concept of a hotel product.

The combination of such complex relationships and features cause many implications that greatly affect the quality of the hotel service primarily in terms of simultaneous proves in the process of production and consumption of the hotel service. A large number of segments of the service system are "responsible" for the ultimate level of services provided and its overall quality. As a consequence of the influence of numerous and various elements participating in the formation of the

hotel service, there is insufficient uniformity in their creation and inequality (variability) in the quality of the individual parts of the service. Commitment to management is vital in quality management and above all in cost analysis in order to achieve a certain level of quality at competitive prices. Cost analysis provides prevention, reduces the number of failures / delays / errors / failures, thereby avoiding failure, as it can destroy team spirit and negatively affect financial performance.

Today, the new approach to quality requires new activities in the field of education of employees, introduction of standardization of all processes, introduction of statistical process control due to defective operation, as well as a new approach in the cost analysis. At the same time, this means a drastic change in the behaviour of employees, radical changes in the organizational setup, a clear definition of the rights, obligations and responsibility of each individual in the hotel.

2. LITERATURE REVIEW

The total cost analysis system, which is one of the most useful pillars in every hotel, includes the cost of quality. They arise because of the existence or possible existence of poor quality and their analysis should be simple and practical, and not too administrative and chaotic. Costs of quality cannot be found in traditional cost calculations, but they are of great value to a company. The concept of quality costs has existed for more than 30 years and is an essential part of the TQM (Total Quality Management) strategy [1]-[4].

By analysing the costs, prevention is provided, the number of failures / delays / errors / failures decreases, thus avoiding the failure and negative impact of the financial results of the hotels. Each hotel plans its optimum quality of products / services during its operation. This means that the quality should satisfy the requirements of the consumers as well as the possibility for them to pay, but also for the hotelier, the product / service should be cost-effective. Today there are mistakes and defects that the consumer is not ready to pay, making the hoteliers' suffer losses. It can be freely said that the quality of quality is more expensive. According to Juran and Godfrey [5]: "Costs of quality are a gold mine that deserves attention and pay for their research." Or according to Chepujnoska and Bjen [6]: "Quality is not expensive, expensive is poor quality".

According to James [7], another view of quality costs is that these are costs that will not be created if employees are doing their job perfectly or when business processes are completely reliable and the results of the processes will be fully cost-effective and optimal.

Fields [8] does not use the notion of quality costs, but rather a quality price, which equates the costs of meeting the requirements of consumers, combined with costs that arise when they fail to meet them.

Deming's famous saying about the link between quality and productivity says [9]: Productivity is growing if quality is improved, but this fact is known and applicable only to a small number of educated people.

According to Kaplan and Norton [10], 85% of the omissions affecting the emergence of certain categories of quality costs in companies are attributed to management.

For Deming [9], the goal is, instead of judging people, to help them optimize processes and benefit everyone. When defining the costs, the optimum cost to be paid by the manufacturer to ensure quality according to the expectations of the buyer / user is taken.

The American Quality Association shares the cost of quality in internal and external. Internal are those that result from error detection before the product is delivered (inspections, controls, delays), and external ones are the result of detection after the delivery of the user (complaints, warranty charges, services, product return, change in contracts, decline in the reputation of the hotel, etc.).

Whatever motel is applied when analysing the cost of quality, it is important to achieve the ultimate goal and this is their reduction [11].

The thorough analysis of the cost of quality provides a clear picture of the financial results of the hotel, thus enabling management of the total costs and achieving positive working results. Although the cost of quality can greatly affect the financial results of hotels, there is no legal obligation for their analysis and public presentation. Many managers do not want to deal with this problem. Minimizing costs means that for a given level of production no more sources are used than necessary. For hotels, this will mean higher profits, as there is a greater difference in the cost of production and the selling price at minimal cost [12] – [15]. In practice, this is only realized if they are known: market needs; the price that the buyer is willing to pay for a certain level of quality; as well as the cost of quality (to obtain the optimum level of quality).

If we take into account all the listed costs related to the quality of products and services, it is evident that the quality management system performance must be measured with financial indicators that it warned by the norm of the ISO 9004-1 standard (point 6). García-Bernal et al., [16], see every company as a specific "value chain." "Value" in the "value chain" represents what customers are willing to pay for the product or service. Activities in the "value chain" of a hotel are part of a larger "value system" consisting of the "value chain" of the supplier, the distribution channel, and the processes of production and consumption of the hotel service [17], [18]. Therefore, the achievement and maintenance of the competitive advantage of hotels is of great importance not only for the value chain of the company, but also for the other value chains in the total value system [19], [20]. Thus, the calculation of the costs of basic activities is extremely important for identifying the possibilities for improving the efficiency and effectiveness of business processes. In order to optimize business processes it is necessary to define the goals, and the processes need to be identified, measured and harmonized according to the requirements of the consumers. Everyday practice of employees in the hotel industry should not only be their self-control in the work, but they must be trained to act preventively [21]. They should be responsible, correct their mistakes, and present any problem with regard to the quality they will discover [22]. The application of the new TQM strategy in the hotel industry means the design of a good documented quality system covering all the business processes of the hotel and is an indispensable basis for the successful application of statistical process control (SPC) and efficient teamwork that could otherwise not be set up in the event of a poor quality system [4]. In this way, it is ensured that the attitudes of top management contained in the quality policy are carried out and this creates a climate and information base on which the teamwork can be developed. The appearance of the ISO 9000 series standards and the adoption of the TQM philosophy (Total Quality Management) has led to a massive application on one hand, set as a market strategy to meet the needs of users, and on the other hand, as a superior style of work. The adoption of this philosophy in the hotel industry has led to the promotion of competitiveness and efficiency, cost savings and long-term sustainable development of the hotel industry [23] – [24].

3. DESCRIPTION OF THE HOTEL INDUSTRY IN MACEDONIA

Macedonia actually has a well-developed hotel accommodation offer. As of 16.01.2018, there are 140 registered hotels of all categories in total, Table 1.

Table 1: Structure of hotels in Macedonia as of 16.01.2018

Type of hotels	***Number***	***%***
Superior hotels with 5*	9	6,4
Hotels with 5*	3	2,1
Superior hotels with 4*	10	7,1
Hotel with 4*	46	32,9
Superior hotels with 3*	10	7,1
Hotels with 3*	36	25,7
Superior hotels with 2*	10	7,1
Hotels with 2*	14	10
Hotels with 1*	2	1,4
Total	**140**	

Source: Ministry of economy, Sector of tourism and hospitality, Review of categorized hotels

Table 1 shows that the most numerous hotels are those with 4* (32,9%), while the least numerous are those with 5* (2,1%). Since 2013, a new Rulebook of categorization of hotels has been brought officially and a certain number of hotels got additional star as a result of improved standards so they achieved the category superior hotels. The received decisions of categorization are valid for three years.

The increased number of hotel accommodation brought about growth of hotel rooms and beds. The current accommodating touristic offer in Macedonia is versatile and it comprises all kinds of basic and additional capacities that give service for accommodation and stay. So, as of December 2017, from total 28305 rooms and 73168 beds registered in all capacities in hospitality, the hotels with three, four and five stars participate with 6777 rooms (24%) and 14.521 beds (19,8%).

Table 2 shows the dynamic growth of hotel rooms and beds in the period from 2015-2017. It is seen that the total number of hotel rooms with three, four and five stars has grown to 114,4% i.e. from 5.802 rooms in 2015 to 6.777 rooms in 2017.

At the same time the increase of 14,7% is registered in the total number of hotel beds (Table 3), i.e. from 12.390 beds in 2015, to 14.521 beds in 2017.

Table 2: Number of hotel rooms with three, four and five stars in Macedonia according to the structure, 2015-2917

Number of hotel rooms in different accommodating objects in Macedonia 2015-2017						
	2015	2016		2016	2017	
	Rooms		%	Rooms		%
Hotels *****	1258	1338	6%	1338	1455	9%
Hotels ****	2588	3005	16%	3005	3321	11%
Hotels ***	1956	2030	4%	2030	2001	-1%

Source: State statistical office. (2017)

Table 3: Number of hotel beds in different accommodating objects in Macedonia according to the structure, 2015-2017

Number of hotel beds in different accommodating objects in Macedonia according to the structure						
	2015	2016		2016	2017	
	Beds		%	Beds		%
Hotels *****	2513	2739	9%	2739	2867	5%
Hotels ****	5363	6323	18%	6323	6964	10%
Hotels ***	4514	4657	3%	4657	4690	1%

Source: State statistical office. (2017)

4. METHODS IN THE RESEARCH AND ANALYSES OF THE RESULTS

In the research qualitative and quantitative methods are used. The qualitative approach includes a review of the literature of many publications that generally deal with the issues of the quality system and its application in practice.

The quantitative approach consisted of an electronic survey designed for hotel managers with three, four and five stars. The survey was conducted in the period March-April 2018, with a reminder of every unanswered questionnaire sent on a weekly basis.

The sample is made according to the list obtained from the Sector for Tourism and Catering within the Ministry of Economy (Table 4). In addition, more than half of the hotels identified for the survey have four stars (48,9%), more than a third have three stars (38,3%), while only 12,8% have five stars.

Table 4: Sample in the survey

Type of hotel	Number	%
Hotel with 5*	12	12,8
Hotel with 4*	46	48,9
Hotel with 3*	36	38,3
Total	94	100

Source: Government of the Republic of Macedonia, Ministry of Economy, Sector for Tourism and Catering.
Note: Data as of May 2018.

Although the survey was ambitious and involved a total of 94 hotel managers with three, four and five stars, only 37 of them responded to the electronic survey. The distribution of responses by type of hotel is visually presented in Table 5. The obtained response rate of 39,4% is relatively high given regarding the fact that it is an electronic survey where, due to lack of personal contact, the percentage of answers usually ranges between the 16- 25% [16], [27].

Table 5: Distribution of answers by type of hotel in percentages

Type of hotel	number	%
Hotel with 5*	10	27
Hotel with 4*	17	46
Hotel with 3*	10	27
Total	37	100

The electronic survey consists of a questionnaire structured in four parts: Part I: General data (open questions based on the type of hotel, years of operation, number of employees, categorization, etc.); Part II: Total quality management system (thirty-five yes / no questions related to the design and implementation of a quality system); Part III: Pillars of the house of quality. The House of Quality is held by four subsystems: internal standardization, methods and techniques of quality, education and motivation and cost-benefit analysis, at the top of which is top management, and basically is measuring, evaluating, analysing and comparing quality / poor quality (thirty-five questions related to the application of the quality system in companies). The third part of the research should determine the "age", that is, the development of hotel capacities on the pillars of the house of quality (from a young and underdeveloped system to a mature and developed system).

Part IV: Indicators for obtaining a European Quality Award (sixty questions for measuring indicators). The current situation was analysed through the criteria for obtaining the European Quality Award: leadership, policy and strategy, employee management, resources, processes, customer satisfaction, employee satisfaction, company impact, business results and how much is invested in innovation. Through these criteria, it was assessed where Macedonian hotels were positioned if they were competing for the European Quality Award.

Part V: Managerial assessment (twenty-two questions for measuring the managers' estimates of the advantage and limitations in the implementation of the total quality management system). The questions from the second and third part of the questionnaire determined the degree of implementation of the quality system in the hotel industry. The goal is to identify whether higher-ranking hotels use the same or different practices when designing and implementing a quality system, compared to lower-rated hotels.

The questionnaire consisted of one type of questions: Answers according to the 5-degree Liker scale (where 1 = no, do not plan at all, and 5 = have implemented). Thus, in interpreting the average values of the results, in the quantification of the influence factor, the following scheme is applied: 1.00-1.80 (not, they do not plan at all); 1.81-2.60 (activities are planned); 2.61-3.40 (in the initial phase); 3.41-4.20 (advanced); and 4.21-5.00 (have implemented).

5. ANALYSES OF THE RESULTS

The questions from the second and third part of the questionnaire were intended to determine the current degree of application of the total quality management system. The House of Quality is held by four subsystems: internal standardization, methods and techniques of quality, education and motivation, and cost-benefit analysis. Due to the scope of the research in this paper, the results are given regarding the application of the system for analysing the cost of quality. The intention was to identify whether higher-ranking hotels applied the same or different practices in the implementation of the cost-benefit analysis system, compared to lower-ranked hotels.

In general, the survey concluded that the surveyed hotels have different views regarding the investigated issues. In addition, among the surveyed hotels there are young hotels that exist only five years on the tourist market, but also well-positioned hotels with over fifteen years of work experience.

Table 6: Summary results for the questions about the system for analyzing the costs of quality in hotels

Key	**Hotels with 3* %**		**Hotels with 4* %**		**Hotels with 5* %**	
	yes	no	yes	no	yes	no
There are supervisors to control all operations	23	77	65	35	88	12
It uses the technique of a "blind" guest to make self-assessment of employees and operations	29	51	43	57	66	34
The prices of their products and services on the basis of costs and their own business policy	23	77	45	55	88	12
The prices of their products and services on the basis of comparison with competition	69	31	53	47	36	64
They make an analysis regarding the complaints and objections by guests	21	79	43	57	79	21
It makes financial analysis in terms of losses occurred as a result of objections and complaints	13	87	48	52	85	15
It makes internal control at the input of raw materials and intermediate goods	56	44	66	34	93	7
It makes anonymous surveys of the guests regarding their satisfaction/dissatisfaction with the services	19	81	36	64	67	33
It accepts the objections and complaints from the guests	23	77	49	51	87	13

Table 6 shows the aggregate results for issues related to the system for analyzing the cost of quality in hotels. Namely, it is noted that five-star hotels show the most significant care in terms of the cost of quality products and services, which means they are managed and optimized. These hotels, together with the majority of surveyed four-star hotels, have quality control supervisors, which is not the case with lower-rated three-star hotels. Measures that are visible to them show how their solutions are important to meeting the wishes and needs of customers / users. The same conclusion comes from the question of using the "blind" guest to make self-assessment of employees and operations, saying that it is surprising that almost 30% of three-star hotels claim to use it.

Most of the hotels with three and four stars do not make a survey of the guests regarding their satisfaction / dissatisfaction with the services (81% of three-star hotels and 64% of four-star hotels), and that they do not accept the objections and complaints by guests (77% of three-star hotels and 51% of four-star hotels).

Most of the hotels with three and four stars determine the prices of their products and services on the basis of comparison with competition rather than on the basis of costs and their own business policy (69% of three-star hotels and 53% of four-star hotels). Only 33% of three-star hotels and

45% of four-star hotels determine the prices of their products and services on the basis of an analysis of their own costs and business policies.

Complaints and objections of guests in hotels with three and four stars in terms of reasons are rarely practiced in only 21% of 3-star hotels and 43% of four-star hotels. Not even the practice of financial analysis in terms of losses occurred as a result of objections and complaints are present in 87% of three-star hotels and 52% of four-star hotels. The practice of three- and four-star hotels in Macedonia points out that they do not pay attention to the analysis of the costs of quality due to ignorance which results in their products / services being expensive and uncompetitive on the market.

The conclusions are quite different when it comes to five-star hotels. Namely, based on the data from Table 6, it is noted that more than half of the surveyed managers of five-star hotels claim that they make anonymous questioning of the guests regarding their satisfaction / dissatisfaction with the services (67%), they make an analysis regarding the complaints and objections by guests (79%), accept complaints and objections by guests (87%), make financial analysis in relation to losses

occurred as a result of objections and complaints (85%), and 88% of managers claim they have supervisors to control all operations, which means that most of them have full business process management. Five-star hotels determine prices based on costs and business policies (88%), and a small proportion of them claim to do so based on copying of competition prices (36%). The findings of the survey are that five-star hotels have supervisors for control of all operations (88%) and internal control in the input of raw materials and intermediate goods (93%) and apply methods and techniques for faultless operation resulting in raising the level of quality in all business processes, reducing all types of costs, reducing the price of products, creating trust among buyers / users, raising employee knowledge.

Table 7 presents the aggregate results obtained from the answers to the questions from the third part of the questionnaire referring to the indicators for estimating the system for analyzing the cost of quality in hotels.

Table 7: Indicators for estimating the system for analyzing the cost of quality in hotels

Indicators for assessing the level of Internal standardization **Indicators for assessing the level of implementation of internal standardization**	**Hotels with 3***	**Hotels with 4***	**Hotels with 5***	**Total**
	Average grade	**Average grade**	**Average grade**	**Average grade**
There are supervisors to control all operations	2,9	3,4	**5,0**	3,7
It uses the technique of a "blind" guest to make self-assessment of employees and operations	3,4	3,4	**4,3**	3,7
The prices of their products and services on the basis of costs and their own business policy	1,8	2,9	4,2	2,96
The prices of their products and services on the basis of comparison with competition	3,8	3,9	**4,5**	4,0
They make an analysis regarding the complaints and objections by guests	1,8	3,8	**4,9**	3,5
It makes financial analysis in terms of losses occurred as a result of objections and complaints	1,9	2,7	**4,3**	2,96
It makes internal control at the input of raw materials and intermediate goods	4,2	3,8	**4,9**	**4,3**
It makes anonymous questioning of the guests regarding their satisfaction / dissatisfaction with the services	3,4	3,4	**4,9**	3,9
It accepts the objections and complaints from the guests	**4,3**	**4,3**	**4,8**	**4,5**
Arithmetic mean of values	3,0	3,5	**4,7**	3,7

The impact factor is presented visually with color according to the following legend:

1.00-1.80 (no, they do not plan at all)	1.81-2.60 (activities are planned)	2.61-3.40 (they are at initial phase)	3.41-4.20 (they are at advanced phase)	4.21-5.00 (they have implemented)

Overall, in Table 7, it is noted that the cost estimation indicators for the management of the system for analyzing the cost of quality are assessed with a medium and advanced impact factor, i.e. they are in the initial and advanced phase or have implemented a system for analyzing the costs of quality. Managers of all types of hotels in Macedonia assess that they have supervisors for controlling all operations (3.7 average), use "blind" guests to make self-assessment of employees and operations (3.7 mean). Hotels of all categories determine the prices of their products and services on the basis of costs and their own policy (2.96 in average), while comparing with the competition in terms of prices is the assessment with 4.0 average values. Hotels of all categories make internal control at the input of raw materials and intermediate goods (4.3 average values) which level indicates that they are in an advanced phase.

Table 7 shows that there is also a large number of indicators where the system for analyzing the cost of quality is low, and it refers to hotels with three and four stars. These indicators are related to the questions about the anonymous surveys of the guests regarding their satisfaction / dissatisfaction with the services (3.4 average value), analysis of complaints and objections of the guests (1.8 average value), acceptance of complaints and objections by the guests (4.3 average value), financial analysis in relation to losses incurred on appeals and complaints (1.9 average value), use of "blind" guest technique to make self-assessment of employees and operations (3, 4 mean value), the presence of supervisors for controlling all operations (2.9 average for three-star hotels and 3.4 average for four-star hotels). These indicators show that hotels plan activities related to the improvement of business processes. Surveyed hotels with four stars and lower ranked three-star hotels are at some advanced stage, although realistic from our experience can be freely stated that they are in some initial phase of planning activities.

Namely, it can be noted that five-star hotels show significant care in relation to issues related to the analysis of quality costs, the implementation of integral quality system control and the design and implementation of total quality management. Thus, they own a large number of supervisors for controlling all operations, use a "blind" guest technique to make self-assessment of employees and operations, anonymous questioning of guests regarding their satisfaction / dissatisfaction with the services, analyze and accept complaints and objections which means that they continuously work on the improvement of business processes. Five-star hotels determine their prices based on their own cost analysis, and very few of them determine prices by comparing themselves with competition.

What Macedonian hotels should aim for is to minimize costs, which means that for a given level of production, no more sources are used than necessary. For hotels, this will mean higher profits, as there is a greater difference in the cost of production and the selling price at minimal cost.

What the hotel industry managers need to do is to identify points for identifying and analyzing weak spots in the whole company, and to analyze the costs of complaints, errors, defects, or costs occurred because quality requirements are not met. Due to the lack of statistical approach in data processing, quality assessment and information transfer, there are many problems that Macedonian hoteliers are facing. The use of statistical process control (SPC) is present in a small number of hotels.

Guidelines on the meaning and use of the SPC and the improvement of the quality of products / services must be made available in all fields: marketing, sales, production, finance, human resources, but it requires regular training for all employees. In doing so, the conclusions indicate that the higher the hotel is, the perception of different standards in terms of quality, environment,

occupational safety, information management, energy and food safety is greater in terms of its implementation.

The technical and technological equipment of the Macedonian hotels is approximately satisfactory and to some extent meets the current requirements of the customers / users. The problems mainly come from poorly organized business processes and the inability to meet the required quality standards. With Macedonian hotels, the same technology produces lower business results.

The reasons are not only in lacking modern technology, but also in weaker managerial skills, qualifications and employee performance, as well as the quality of business process management.

There is an example of integrated control and self-control in the investigated hotels that existed on the Macedonian tourist market for more than 15 years. Their consistency on the market is the result of the integrated quality control applied, which is based on the participation of all employees in the promotion of quality. They achieved this by changing their awareness and attitude towards work, depending on their knowledge, learning, desire and motivation for such work. The application of the Total Quality Management model does not require investments in equipment, new technology, but only a different approach to work, performance of tasks, mutual communication, unity in achieving quality, as well as correctness and high responsibility for work and customers.

Our tests have shown that companies that have only formally certified a product / service quality assurance system do not meet the requirements of ISO standards and have no benefits from the formal quality system.

6. CONCLUSION

From the data obtained from the survey, three-star hotels are in the initial phase of implementation of the system for analyzing the costs of quality (3.0 average), four-star hotels are advanced (3.5 average), while five-star hotels have implemented a system for analyzing the cost of quality (4.64 average).

Five-star hotels show a clear definition of the rights, duties and responsibilities of each individual and are fully committed to the customers / users for long-term satisfaction of their desires and needs. With the definition of rights, obligations and responsibilities, employees have received greater participation, responsibility and power in identifying and solving problems, able to correct mistakes, outline quality problems, creating standards and in the efforts invested in continuous improvement.

By involving employees in problem-solving processes, their motivation is increasing in order to further enhance the processes they perform.

The experience in the world shows that many hotels have significant difficulties in implementing the TQM (Total Quality Management) system. Its principles, although in theory are well built, are in practice it is implemented with great difficulty, so it is not a rare case for numerous hotels for a variety of reasons to give up its introduction, even though they accepted it. Namely, in hotels very often, the management only declares about the introduction of this system, and then shows unwillingness to develop broad support for its implementation. Many managers are simply not ready to make the decision to implement TQM because they are not capable of upgrading the quality system. There is a large number of managers who do not have enough enthusiasm to transfer it to other employees when it comes to improving the quality system. There are also a number of managers who do not want to transfer some of their powers to a lower level. This should be added to the unwillingness of the employees to change the habits acquired over the years in the performance of their tasks. These are just some of the reasons for unsuccessful attempts to establish a quality system. It is logical to conclude that if the management of an organization is not interested or unable to continuously improve quality, it is difficult to expect employees to do it. The management before making the final decision on the introduction of the TQM system should check

for its own readiness and possible problems that may arise in the process of establishing the quality system and its implementation.

The conclusion is that the hotels in Macedonia have to measure constantly the satisfaction of the user of the services, which means using different methods and techniques that serve as the basis for continuous improvement of the quality of the hotel product and providing pleasure to tourists. Top management must build an integral quality control system aimed at monitoring the whole production-service process, indicating deviations and mistakes that may affect product quality and take timely measures if there are reasons.

Based on the results of the research, there are recommendations for the managers of the hotels in Macedonia to implement successfully and develop a system of total quality management; it is necessary for the top management to make a clear and unambiguous decision, while determining the development of the quality through practical action. If the answers to these assumptions are satisfactory, the organization can be assured that it is on a good path to success. In doing so, appropriate procedures must be used in the process of setting up a quality-oriented, market-driven quality system by the consumer, with an exceptional emphasis on the role of employees.

Hence, as a general conclusion, the need for the necessary application of the methodology of analyses of the cost of quality as a segment of the integral model of total quality management is required, which does not require investments in equipment, new technology, but only a different approach to the work, in the performance of tasks, in mutual communication, togetherness in achieving quality, as well as correctness and high responsibility for work and customers. By undertaking such type of activities, the results can be measured, which directly reduces the operating costs of the hotels operations.

Acknowledgments

This study is a part of the research project “Model for improving the performance of business processes within the hospitality industry”, (Ref. No. 0201-545/9).

LITERATURE:

[1] Ciampa, D., 2005. Almost ready. Harvard business review, 83, pp.46-54.
[2] Mitreva, E., Taskov, N., Srebrenkoska, V., Filiposki, O., Lazarevski, I. and Jovanovic-Malinovska, R., 2017a. Analysis of the current conditions in the Macedonian companies concerning the quality of products, services and processes. Quality-Access to Success, 18(156), pp.65-72.
[3] Ritchie, L. and Dale, B.G., 2000. Self-assessment using the business excellence model: A ’study of practice and process. International Journal of Production Economics, 66(3), pp.241-254. DOI: https://doi.org/10.1016/S0925-5273(99)00130-9
[4] Mitreva, E., Taskov, N., Filiposki, O., Lazarevski, I. and Gjorshevski, H., 2017b. The Success of Projecting and Implementing Quality System in the Macedonian Companies. TEM Journal, 6(2), pp.372-379.DOI: 10.18421/TEM62-24
[5] Juran, J. and Godfrey, A.B., 1999. Quality handbook. Republished McGraw-Hill, pp.173-178.
[6] Chepujnoska, V. and Bjen, D., 2000. Using TQM to achieve more Efficient Work: the Macedonian Experience. In International Conference on Economic Aspects of Quality Management, Athens.
[7] James, P. T., 1996. Total quality management: An introductory text. New Jersey: Prentice Hall.
[8] Fields, D.L., 2002. Taking the measure of work: A guide to validated scales for organizational research and diagnosis. Sage.
[9] Deming, W.E., 2000. “The New Economics for Industry, Government, Education ”. MIT Press. Cambridge, Mass.

[10] Kaplan, R.S. and Norton, D.P., 1995. Putting the balanced scorecard to work. Performance Measurement. Management, and Appraisal Sourcebook, 66, p.17511

[11] Carlos Bou-Llusar, J., Escrig-Tena, A.B., Roca-Puig, V. and Beltrán-Martín, I., 2005. To what extent do enablers explain results in the EFQM excellence model? An empirical study. International Journal of Quality & Reliability Management, 22(4), pp.337-353. DOI https://doi.org/10.1108/02656710510591192

[12] Kondo, Y., 1993. Companywide quality control: its background and development. 3A Corporation.

[13] Conti, T.A., 2007. A history and review of the European Quality Award Model. The TQM magazine, 19(2), pp.112-128.

[14] Eskildsen, J.K., Kristensen, K. and Jørn Juhl, H., 2001. The criterion weights of the EFQM excellence model. International Journal of Quality & Reliability Management, 18(8), pp.783-795. DOI: https://doi.org/10.1108/EUM0000000006033

[15] Balbaster Benavent, F., Cruz Ros, S. and Moreno-Luzon, M., 2005. A model of quality management self-assessment: an exploratory research. International Journal of Quality & Reliability Management, 22(5), pp.432-451. DOI https://doi.org/10.1108/02656710510598366

[16] García-Bernal, J., Gargallo-Castel, A., Pastor-Agustín, G. and Ramírez-Alesón, M., 2004. Total quality management in firms: Evidence from Spain. Quality Management Journal, 11(3), pp.20-34.

[17] Mitreva, E., 2011. Model-integral methodology for successful designing and implementing of TQM system in Macedonian companies. International Journal for Quality Research, 5(4), pp.255-260.

[18] Mitreva, E., Filiposki, O., Taskov, N., Srebrenkoska, V., Lazarevski, I. and Jovanovic-Malinovska, R., 2018. The Need for Analysis of Costs of Quality in Macedonian Companies. Quality-Access to Success, 19(162), pp.51-55

[19] Madan, P., 2010. An award journey for business excellence: the case study of a public sector unit. Total Quality Management, 21(12), pp.1343-1364. DOI: https://doi.org/10.1080/14783363.2010.530774

[20] Mitreva, E., Nikolov, E. and Nikolova, B., 2016. Application of Total Quality Management (TQM) in the Macedonian Railways-transport in the Republic of Macedonia. Calitatea-acces la succes, 17(151), pp.55-60.

[21] Dahlgaard, J.J., Khanji, G.K. and Kristensen, K., 2008. Fundamentals of total quality management. Routledge.

[22] Garg, P., 2014. Impact of employee engagement on it sector. International Journal of Management Research and Reviews, 4(1), p.62.

[23] Bohdanowicz, P., Simanic, B. and Martinac, I., 2005. Environmental training and measures at Scandic Hotels, Sweden. Tourism Review International, 9(1), pp.7-19. DOI: https://doi.org/10.3727/154427205774791744

[24] Gómez Gómez, J., Martínez Costa, M. and Martínez Lorente, Á.R., 2011. A critical evaluation of the EFQM model. International Journal of Quality & Reliability Management, 28(5), pp.484-502. https://doi.org/10.1108/02656711111132544.

[25] Wilkes, N. and Dale, B.G., 1998. Attitudes to self-assessment and quality awards: A study in small and medium-sized companies. Total Quality Management, 9(8), pp.731-739. DOI: https://doi.org/10.1080/0954412988208

[26] Parker, G.M., 2003. Cross-functional teams: Working with allies, enemies, and other strangers. John Wiley & Sons.

[27] Medina-Muñoz, D. and García-Falcón, J.M., 2000. Successful relationships between hotels and agencies. Annals of Tourism Research, 27(3), pp.737-762. DOI: https://doi.org/10.1016/S0160-7383(99)00104-8