

# Measuring the Business Results in the Macedonian Companies

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**Abstract** – The main aim of this paper is to contribute to the development of the modern scientific approaches and their application in a practical business environment based on the researches done in the Macedonian companies in the domain of measuring the business results in the process of conducting business processes. The data received from the research were helpful and gave useful directions in the preparation of the assessment methodology of the success from the projected and implemented TQM system (Total Quality Management). In this way it is insisted on influencing and improving the performances of the business processes in Macedonian companies, especially the part for encouraging and developing innovations and entrepreneurs in the companies with certified quality system, but also in those without a quality system.

**Keywords** – quality system, evaluation of the business results, metrology, model.

## 1. Introduction

In the system for metrology, quality provision is of fundamental importance, but in order to evaluate what will be measured we need to make techno-economic analysis that will be based on comparison of the costs for discovering defects of the product units and the costs caused by those defects. The evaluation has to be present in all stadiums for

realization of the processes, and as an end result it has to give feedback about how good is the realized part and what isn't realized as planned.

The results are a powerful weapon for continuing the cycle i.e. to achieve devotion by the employees and the top management toward a continuous improvement.

## 2. Literature review

In the basis of the house of quality is metrology – a foundation of the house of quality, the measuring of the defined completed data on the business processes [1]. The measuring is done with the aim to understand and control the business processes, and to collect important information on the products and services about quality improvement and optimization of the business processes [2][3][4]. There are a few reasons for the introduction of measuring according to Dumke et al [2]:

- Understanding the process, the products and the resources. It can serve as a basis for future comparison;
- Controlling the processes, products and resources, which includes corrective and preventive measures. The possibilities for improvement and the defects in the processes, products and resources can be identified through an analysis of the measures;
- Improving the processes and the products. The measures can be used to predict the future behaviour of the processes, products.


Projecting the measuring system enables a systematic approach toward the given results i.e. analysing and discovering the critical spots, determining the losses, finding a solution for the problems and their successful implementation. In order to close the PDCA circle (Plan – Do – Control – Act), the results have to be checked and corrective measures have to be conducted with the aim to achieve a spiral and continuous improvement that

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will lead to new possibilities for improvement. The improvement of the processes is a problem solving process according to Shiba and Walden [3].

In order to make the right decision when choosing the measuring characteristics, it is necessary to know their performances from the aspects of precision, speed and the amplitude of the research, the type and the number of information etc. [5][6].

The intensity and the amplitude of the measuring and the control of the characteristics depend on their importance for quality and the degree of accuracy. The measuring in the business metrology is conducted through questionnaires that measure the satisfaction/dissatisfaction of the employees, buyers, suppliers etc. The collecting of the data about the buyer's satisfaction from the quality of the products/services has to show which measures need to be taken by the companies to improve it. The measuring sources can be objections, reclamations, surveys, debates etc. [1][5].

One of the key criteria for obtaining the Malcolm Baldrige award [7] and the European award for quality [8] is measuring the satisfaction of the buyers/users. For a correct behaviour by the company, it is very important not to interpret the kind-hearted objections or reclamation incorrectly, and it is important to practice a continuous following of buyers' satisfaction that will give valuable information for the strategic business analysis and their conducting process [9][10][11][12][13].

### 3. Subject of research and analysis

The subject of interest in this paper is analysis of Macedonian companies in relation to measuring the performances of the business processes. On the basis of the defined aims of the empirical research, the list of researched companies has 3109 Macedonian companies and it was completed with the help of the Economic Chamber of RM, while in the research process itself participated only 363 representatives from the quality department who are responsible for the quality control or the management. In choosing the sample a special attention was paid to analyse both companies with and without a quality system and to note the differences between them.

The research has been done through a questionnaire and with a detailed study of the companies by the research team. Although the research was planned as an ambitious possibility to analyse the Macedonian companies (around 3109 from the created list), in the course it was proceeded with participation of only 363 companies. It is 11,6% of the created base, but it is a usual number in this kind of a research [14][15]. The research in the Macedonian companies had the aim to note their development in accordance to the four columns of

the house of quality and to determine at which phase they are in the pyramid of the European award for quality [8][10][11]. In this paper we have presented only the results in relation to whether the Macedonian companies have a built meteorology for measuring the performances of the business processes, which represents a basis for a continuous advancement of quality and the willingness to accept the TQM strategy.

The structure of the analysed companies – participants in the research according to the economic branch they belong to (National classification of jobs2 – Official Gazette of RM, no.147/08, with the modification and the addition to the National classification of jobs applied since 01 January 2013) is given in Figure 1.

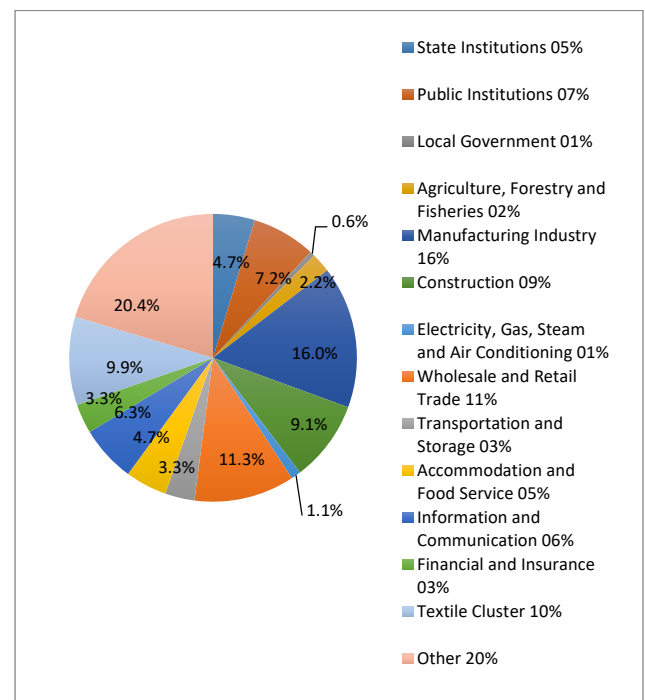


Fig. 1. The participation of the companies in the research through percentages, divided according to their economic branches

#### 3.1. Measuring the business results of the Macedonian companies

One of the criteria for obtaining EQA (European Quality Assurance) is what the company does in relation to the planned activities for achieving satisfaction for all those who have financial interest from that company. The measurements of the performances have to be financial and additional [8][10].

In order to find out how do the Macedonian companies measure the business results, if they compare themselves to the competition, where do they see the competitor's advantages etc., it is good

to know on which markets they are present and how do they evaluate their presence.

On the question “on which markets do the companies sell their products/services” we got the following results:

- 62,3% of the analysed companies sell their products/services on the national market;
- 20,7% of the analysed - on the European market;
- 11% of them - on the global market;
- 6,1% of them, work according to loan contracts.

It can be seen from the research that 62,3% of the analysed companies produce products/services for the national market. Those companies who have stated that they sell their products on foreign markets evaluate their participation there with a high percentage of dissatisfaction.

On the question “what kind of problems are the companies faced with on the market (whether home or foreign)”, we got the following results:

- 36,9% of the researched companies have a problem with unfair competition;
- 21,2% of them with powerful competition;
- 7,4% of them with products’ high prices;
- 24,2% of them, stated “other”.

Under “other” they have noted: illiquidity of the companies, the non-existence of distributive networks, frozen currency of the Euro, uncontrolled and illegal import, false brands. A major part of the construction companies have also reacted to the protectionist relation of the government in the public supply which results in bad distribution and concentration of the capital only in some structures, as well as in the need for decreasing the customs formalities.

None of the researched companies have stated the non-quality of their products/services as a problem that they face on the home and the foreign market.

Analysed in accordance to economic branches, we got the following results, Figure 2.

On the question whether the competence is a threat to the Macedonian companies and where do they see the competitor’s advantages, we received the following data:

- 43% have stated that competence is a threat to them;
- 57% do not see a threat posed by the competence.

Almost all of the questioned parts have stated the reasons that cause danger from the competence:

- 29,2% of them believe that the advantage of the competence is in the better quality of their products/services;
- 22,9% of them have stated that the competitor’s prices are the greatest advantage of the competence;
- 9,4% of them see the well-developed distribution network of the competitors;
- 2,2% of them emphasize the importance of the quality of the input resources as an advantage;
- 1,7% of them have stated that the design of the products is a key to the competitors’ success;
- 34,7% of them for other.

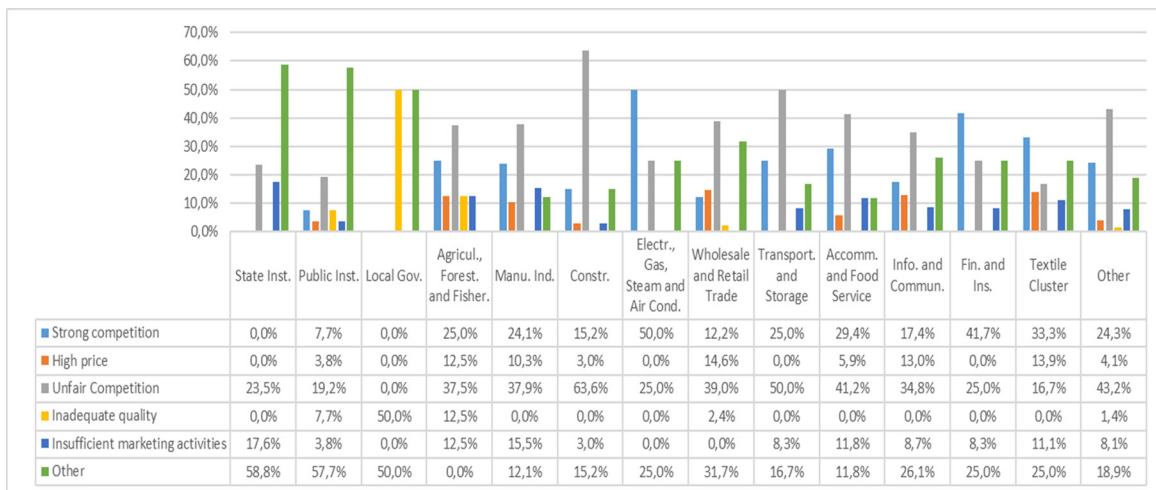


Fig. 2. Problems that Macedonian companies face on the national and the foreign market divided in accordance to the economic branches

Under ‘other’, the economic subjects who work with agriculture, silviculture and fishery see the competitors’ advantage in the arranged production (the production of a known buyer) in the manufacturing industry. Most of them have pointed that the competence is in the change of the assortment, or the refreshment of new sorts of vegetables and fruits that give larger profit and which sorts are more enduring to outside influences. Some of them have stated that the competitors’ advantage is in their collaboration with the scientific and research organizations.

Macedonia is known after the brand of paprika, cabbage, leek, beans, peaches and tomatoes, and not after crops that have far less profit than the neighbouring ones. It is essential that the agricultural companies renew their collaboration to the manufacturing industry and to conduct the processes for provision of fresh fruits and conserved vegetables, because the manufactured fruits and vegetables are a competitive advantage of the Macedonian economy.

Under other, the companies that produce food have stated that the export on the foreign markets seeks not only system of quality and safety while working according to ISO 9001:2015, ISO 22000 and HACCP, but it also seeks an export number. This is obligatory for the companies from the meat and dairy industry. Beside the producer itself, the international standards have to be fulfilled by the collaborators of the company that is applying for an export number. In the companies that produce machines and appliances, the advantage for the competitors is seen in the post-sail support.

Under other the researched companies see the advantage of the competitors in their “favourite” brand (lovebrand). Lovebrand is much more than an ordinary brand. This brand touches the hearts of the buyers/users, their brains and creates an intimate and emotional relation without which they cannot live. The buyers/users do not believe that they can find a replacement for their product, but that is not true. There are many replacements, but they are not lovebrands. The buyers/users do not have to be in love with the brand of the Macedonian companies. They have to know that the companies love their products/services and that the employees work professionally, and the product that is being offered on the market has to ease their life and help them by offering the real product. The creation of Macedonian brands that will be associated with the Macedonian identity is essential. People have to be proud on that brand. People in Macedonia are very sensitive of the pride, the identity and nationality, and that has to be used. Macedonian citizens avoid Macedonian products, but that does not mean that they are not with good quality, but that the brand has

to be strengthened. There are brands that cause a feeling of pride such as “skopsko”, because everybody praises it, buys it and presents it to foreigners as the best beer that they wouldn’t change for any other beer. The Tikvesh winery is the biggest winery on the Balkans that has “Tga za jug” as a symbol of the Macedonian beauty and love toward the country, and it is Macedonian lovebrand.

The trend of results’ performances and the comparison to the competitors in some key business areas is a trend that is followed when measuring the business results. The self-evaluation of the organization by comparing its practice to the best practice, while using the benchmarking strategy needs to help the organization and encourage internal creation.

Our researches have shown that 66,9% of the analysed companies do a continuous comparison of the best companies and competitors, and then they take measures for the development of the business processes and products.

The measuring and the comparing of the competitors should not encourage imitation or a direct copying of the competitor, which is a massive trend in our country and a sort of manipulation of the buyers/users [16]. The measuring that Macedonian companies do and the comparisons to the competitors have shown that even 29,2% of them have stated that the competitors’ advantage is in the better quality of their products/services. In this way the benchmarking is a useful method in the quality management, especially for noting and continuously measuring the gap between the internal (personal) practice and the best external practice, by establishing dynamic measuring standards. In accordance to all these measuring, the companies built their own policy and strategy. On the question where do the Macedonian companies see themselves in the next ten years, we got the following results:

- 34,2% of the respondents see the vision of the company in expanding their products/services;
- 29,5% of them want to improve the quality of the current products/services; 27,9% of the respondents have stated that the vision they have for the future of their company in the survival of the company on long terms;
- 8,5% of them see it in creating new products//services.

One of the criteria for obtaining EQA is what the company does to satisfy the needs and expectations of the local, national and international community.

This refers to the view of the company about the protection of the environment and saving the resources, the view of the company toward the

quality of life and their relation toward the authorities and institutions in the system that regulate its work.

From our research, we can conclude that only 5% of the analysed companies have implemented ISO 14001, which is a very low number, and it points to a small devotion of the companies toward their surroundings, especially the environment, and even less toward saving the resources. According to the data given by the Economic Chamber of Macedonia, the system for conducting the environment ISO 14001 for the year 2016 has been introduced in 300 companies. In Macedonia the application of the system regarding health and safety at the workplace, ISO 45001, has increased, which is at the same time a legal obligation for the Macedonian institutions and companies. This also includes assessment of the environment in relation to the company's behaviour toward the quality of life, the surroundings and the saving of the resources. Our real notions show that Macedonian companies take little consideration about protecting the environment which includes and surpasses the legal obligations and rules. This responsibility is based on ethics and morals of the company, the responsibility about the safety of the product, the health and the safety of the employees, the saving of the non-reusable natural resources and protection of the environment.

Based on the received results and above mentioned aims of the research, it was confirmed that Macedonian companies lead:

- Weak care about quality;
- Poor attention is given to the continuous education;
- Weak investment in innovation;
- Quality system is present in small number of companies;
- There's little care for the employees, buyers, distributors and the community;
- Weak application of SPC (Statistical Process Control);
- Work with large costs;
- Team work is considered as old-fashioned;
- Lack of macro climate for quality development in Macedonia;
- The lack of motivation for quality development in the companies;
- Weak application of Information Technology in production;
- To obtain a certificate at any cost;
- There is not a strategic planning and effective managing (usually one person does many functions).

The results from the research have helped in the creation of a methodology for assessing the success of projecting and implementing a system according

to TQM (Total Quality Management) as part of a universal and integral methodology for projecting and implementing a TQM system in the companies.

#### 4. A suggested Methodology for Assessing the Success of the Projected and Implemented System According to TQM (Audit)

The self-evaluation, as a basic approach in the application of the integral methodology for the system according to TQM (Total Quality Management) is of critical importance for a regular application of it. However, without a sincere determination of the top management to apply this universal integral methodology, any other partial attempt is sentenced to fail [1]. The self-evaluation is realized through a number of documented steps for comparing the realized model in relation to the planned one. The monitoring does not embody only the quality of the products/services, but also the adequacy of all the TQM system in realizing the functions of the quality [17][18].

The flow of the check process is realized through the following activities, Figure 3.:

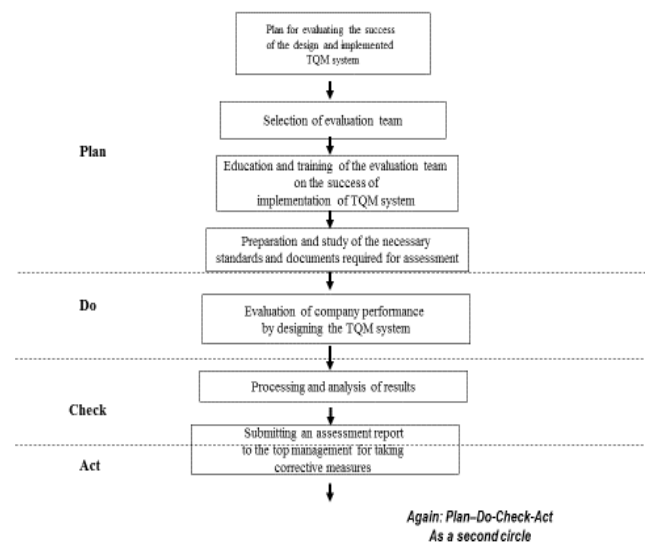


Fig. 3. The flow of the process for assessing the success of projecting and implementing the system according to TQM (Total Quality Management)

- **(Plan) step 1:** Plan for assessing the success of the projected and implemented TQM system.

The plan for assessing the success of the projected TQM system is done by the top management.

- **Step 2:** Choosing the assessment team.

The assessment team has to be formed by people who possess the following characteristics: to rule the TQM philosophy; to have a good communication on all levels in the company; to have a power for

observation; to possess rational opinions and confirming the facts; to be thorough in the research and objective while assessing. The participation of the experts is essential; especially in giving an expert advice on how should the companies continuously advance the existing model of TQM and to create alternative programs for its application in practice.

➤ **Step 3:** The education of the assessment team.

In case of deficiency of people qualified for assessment, it is necessary to develop alternative trainings for application of the integral methodology for projecting and implementing the TQM system [16]:

- **Course – assessment training**, that will give the users of integral methodology a chance for theoretical and practical knowledge for its application in practice;
- **Benchmarking workshop:** << examples of good practice >>, where the most successful home companies are presented and compared to the practice of other successful companies that apply the TQM strategy.

Because it is about an integral methodology, it needs to be a strategic character in order to give the expected results.

➤ **Step 4:** The preparation and study of the needed standards and documents necessary for assessment.

The assessment team needs to make some preparations before the assessment process:

- Review of the policy for quality and comparison to the made questionnaire;
- Immediate acquaintance to the work of the company;
- Choosing the organizational parts of the company that will be checked;
- Preparation of questionnaires with different questions according to the requests of the EQA (European Quality Assurance), because the check has to confirm the following:
  - how do the behaviour and the measures taken by the top management and the other managers inspire, support and promote the culture for TQM;
  - how does the company formulate, develop and re-analyse its policy of quality and strategy and how it transform them in plans and actions;
  - how does the company obtain the work potential;

- how does it effectively and efficiently conduct the resources;
- how does the company identify, conduct and improve the processes;
- what does the company do to fulfil the satisfaction of the buyers;
- what the company does in relation to the satisfaction of the employees;
- what does the company do to satisfy the needs and expectations of the local, national and international community (on a free will and outside the legal obligations);
- what does the company do in relation to what is planned to achieve satisfaction for all those who have a financial interest from the organization.

- Discussion on the assessment plan and the provision of willingness from the top management;
  - creating a check plan;
  - delivering the assessment plan to the company;
  - detailed understanding of the check-plan.

➤ **(Do) Step 5:** Assessment of the company about the success in projecting the TQM (Total Quality Management) system.

The monitoring encompasses all the subsystems from the house of quality in one company, and also the criteria of EFQM (European Foundation for Quality Management) that are used for assessing the progress of the companies in the realization of business perfection.

Checking the system according to TQM has to be part of the daily practice of the strategic management. It needs to be in function of the opportunely overtaking corrective measures.

The assessment refers to:

- An analysis of the external environment (business trends, legal regulations, sale, competence, buyers'/users' satisfaction, distributors' satisfaction, the influence on the society);
- An analysis on the internal environment (effectiveness, efficiency, structure and satisfaction of the employees, the business results);
- An analysis on the condition of the company in relation to the environment (Benchmarking).

The flow of the assessment is through following the record as:

- a) the leaders publicly demonstrate their personal responsibility toward the culture of TQM;
- b) the leaders support the improvement (by personal engagement), by providing the needed resources;
- c) the leaders are included in relations with the buyers, suppliers and other external organizations;
- d) the leaders acknowledge and award the efforts and the results of the employees.

It is necessary to keep record on the creation of the policy and the strategy and if they are based on information such as: relevant and complete; developed; way of communicating and applying; regular updates and their improvement.

It is necessary to keep a record about the relation toward the employees by:

- a) Planning and developing of the employees as a business resource;
- b) Supporting and developing the abilities of the employees;
- c) Continuously analysing their performances and fulfilling the aims;
- d) How are the employees included in the business processes, how are they authorized to do the organizational functions and how are their results being acknowledged;
- e) How does the organization keep an effective dialogue with them?
- f) How do they care about the employees?

It is also necessary to keep record on how the following are being conducted: the financial resources; the information resources; the relation of the suppliers and the reproduction materials; the buildings, the equipment and other assets, i.e. the technology and the intellectual property of the organization.

It is necessary to have evidence for:

- a) How are the key processes identified so that a successful working is achieved?
- b) The systematic conducting of the processes;
- c) How are the processes improved by using innovation and creativity?
- d) How do the processes change and which are the effects from that change;
- e) How are the aims for improving the process being analysed and completed?

Also, a record on the satisfaction of the buyers/users is needed: the opinion of the buyers

about the products/services and the relation of the company towards them; an additional measures for the satisfaction of the buyers.

A record on the satisfaction of the employees is needed:

- a) the opinion on the employees about the company;
- b) additional measures about the satisfaction of the employees.

A record on the satisfaction of the environment is needed.

- a) how does the society see the company;
- b) additional measures for the company's influence on the society.

A record on the business results is needed:

- a) financial measures about the company's performances;
- b) additional measures about the company's performances.

During the check – process every sector (department) needs to make all its resources and documentation available for the team. The check is done to all subsystems of the TQM system in each sector by using certain questionnaires depending on the subsystem.

➤ **(Check)** Step 6: Processing and analysing the results.

For assessing the success of the projected and the implemented system are used the statistical methods to:

- assess the effects;
- do the report;
- present it in front of the top management or the national committee for business perfection, when the company would compete for a European award for quality.

The results have to show what the company has achieved, while the possibilities show how these results have been achieved.

The following needs to be stated in the report:

- a) The aim of the assessment;
- b) Short review of the results;
- c) The used observation methods;
- d) A detailed analysis on the results from the observation and
- e) Suggestion for corrective measures.

The fundamental concept of the TQM system is to help the companies to create their own approach for achieving perfection in the business.



- **(Act) Step 7:** Delivering the assessment report to the top management in order to take corrective measures.

All notes should be written and delivered to the top management, so that corrective measures are taken.

The notes and the suggested corrective measures refer to:

- the difficulties that appeared during the implementation process of every subsystem of TQM;
- a clear picture of which part of the subsystem needs to be developed with the next try;
- see if the teams and the employees are interested for a further development of the TQM system;
- see if the team members know and are trained for the steps of the methodologies when projecting and implementing each subsystem;
- award the successful ones;
- see if the results (achievements) are determined and understood and where are seen the advantages from the TQM's implementation.
- broadening the climate for even larger success.

In order for this integral methodology to be efficient, it is necessary to use information technology [18]. The integral methodology for projecting and implementing the TQM system also has a reverse relation as a result of the indispensability from a permanent promotion of the business processes [1].

## 5. Conclusion

The methodology for assessing the success of the projected and implemented system in accordance to the TQM (Total Quality Management) has a reverse relation as a result of the indispensability from a permanent promotion of the business processes [19]. The repetition or the spiral repetition of these cycles will uncover the gain from the application, which will change the organizational culture toward these initiatives and it represents an attempt toward higher aims for perfection [20]. This methodology would not be successful only in the implementation of the improvement of the business processes in the Macedonian companies, but it will also raise the awareness of the employees about the quality and their concentration toward increasing the satisfaction of all the interested parts.

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