

The Success of Projecting and Implementing Quality System in the Macedonian Companies

Elizabeta Mitreva¹, Nako Taskov¹, Oliver Filiposki¹,
Ilija Lazarevski¹, Hristijan Gjorshevski²

¹University "Goce Delcev" - Stip, Macedonia

²Faculty of Computer Science and Engineering (FCSE), UKIM, Skopje, Macedonia

Abstract –The research in this paper has been done with the aim to analyse the current condition of the Macedonian companies, in the domains of projecting, implementing and certifying the quality system. The received data from the research has united the experiences and the realities of a number of certified organizational systems in Macedonia. The data analysis, as well as the principles and the strategies derived from the research, have helped in the process of creating a model for improvement of the organizational performances. They also gave useful directions for the process of defining the measures for creating sustainable business systems, and in many other areas such as: encouraging innovations, strengthening the relations among the companies and the scientific research work.

Keywords – quality system, internal standardization, certification, model and innovation.

1. Introduction

Many companies decide to project and certify the series of ISO standards in order to satisfy the clients, whether buyers or users or other companies [1], [2]. Many companies prefer to use the services or the products derived from a company that follows international standards. In some cases the clients

themselves ask for ISO certified standards as a precondition for a collaboration [3]. The basic aim of the projection and the certification of the quality management systems is to obtain a continuous satisfaction with the clients for the usage of the company's services or products [4]

2. Literature review

Introduction of the ISO standards should be seen as a long term improvement process of the quality [2]. The documentation and the implementation of the ISO standards both revolve around the quality. A well implemented system of quality according to the ISO standards results into an increased product quality, and it also improves the company's position on the market and herein it stimulates the customers [4]. The projection and the implementation of the ISO standards are identified with all of the key processes in the company with a metrics that enables easier and better management of the internal business processes. The process of projecting a quality system is an attempt to draw nearer the quality of the products to the set goals. During the implementation of the projected quality system, we get a clearer picture of how to optimize the internal processes in the company [1][3].

A large number of authors emphasize that the introduction of the quality system should help the companies to surpass their problems. According to the requests of the ISO 9001:2015 the work has to be done in a different way and the thinking should be done differently as well. This means that the companies require reengineering and radically new way of thinking and working [5][6].


For many companies the implementation of ISO 9001 is the first step toward the TQM (Total Quality Management). The upgrade ISO 9001:2015 with TQM strategy means improvement of the quality through an analysis of the organizational processes not only in the direction of defining, improving and designing the process, but also in the direction of improving the productivity and the optimization of the costs [7][8][9].

DOI: 10.18421/TEM62-24

<https://dx.doi.org/10.18421/TEM62-24>

Corresponding author: Elizabeta Mitreva,
University "Goce Delcev" - Stip, Macedonia

Email: elizabeta.mitreva@ugd.edu.mk

 © 2017 Elizabeta Mitreva et al; published by UIKTEN. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 License.

The article is published with Open Access at www.temjournal.com

The everyday practice of the employees should not be only their self-control while working, but they also need to be trained to act preventively. They need to be responsible, to correct their errors and to state every problem in relation to every quality that is being discovered [6].

3. Subject of research and analysis

The subject of interest in this paper is the analysis of the Macedonian companies in relation to the performances of the business processes, whose problems on the global market had been under a deeper analysis. According to the defined aims of the empirical research, the list consists of 3109 researched Macedonian companies that were chosen with the help of the Economic Chamber of Macedonia. Active participants in the process were only 363 representatives of the quality domain which are responsible for the quality or are managers of the quality domain. During the process of choosing the sample, a lot of attention was paid so that the analysis was done both on companies with and without a quality system, and to determine the differences among them.

The research was conducted through a questionnaire, but 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), the course of the research led to an analysis of only 363 companies. It is only 11,6% of the created base, but at the same time it is a usual number for this type of research [10][11]. The aim of the research was to note the development of the Macedonian companies in the four columns that hold the house of quality and also to note the phase of the companies in the pyramid of the European award for quality. These were the criteria used in the analysis of the condition in the Macedonian companies and in the process of determining the gap among these companies and the developed European and world companies, as well as their ability to approach the global market. Because of the amplitude of the researched material, in this paper we have presented only the results related to whether the Macedonian companies have a set management system of quality according to ISO 9001:2015 standard, which represents a base for a continuous development of the quality and readiness to accept the TQM philosophy.

The structure of the interviewed companies – participants of the research, according to the economic branch that they belong to (National classification of jobs2 – Official Gazette of Macedonia, no.147/08) with modification and addition to the National classification of jobs applied

since 01 January 2013) is given on Figure 1. The participants in the research were representatives of the quality system from all of the companies and institutions that have projected and implemented a quality system, while those which lack these systems participated through their first or second level managers.

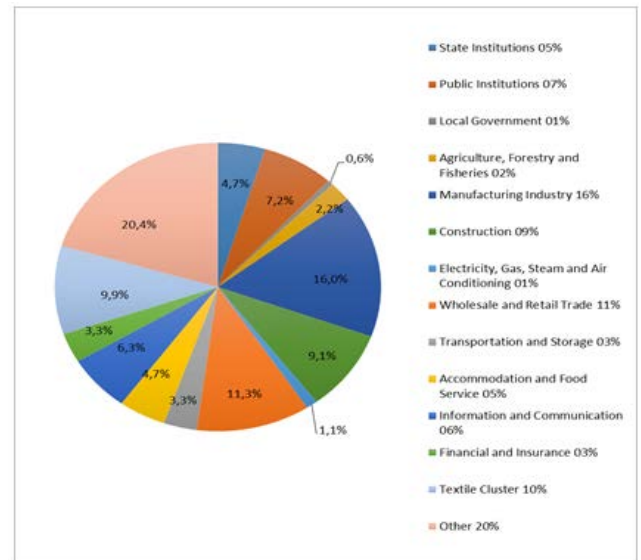


Figure 1. The participation of the companies in the research through percentages, divided according to their economic branches

3.1. The application of the internal standardization and providing quality in the Macedonian companies

The current situation in Macedonian companies was analysed through one of the four basic columns of the house of quality – the application of internal standardization.

The companies have recognized the value of quality and are able to conduct it if the system is introduced and certified according to the standard ISO 9001:2015. There is a firm determination of the top management of quality, a definition of the organizational structure, documentation of the quality system and trained people. Herein derives the following question: *Do the Macedonian companies have an introduced quality system according to ISO 9001:2015 and where do they see the benefits from its implementation?*

The fact that only 36,9% of the researched companies have a quality system according to ISO 9001:2015, is very concerning. There is a need to work according to international standards and strategic connections to the Western countries and to urge certain managers and owners to implement a quality system. The distribution of the results from the research according to the economic branches is given in Figure 2.



Figure 2. Summary of the results for the application of the internal standardization in the companies/institutions according to the economic branches

The start of the introduction process of the quality system is directly linked to the determination and the readiness of the top management to improve foremost its own quality of working, and then to enable competitive advantage on the market. For that aim appears the following question: where do the companies, which have already certified a quality system according to ISO 9001:2015, see the benefits from the quality system implementation.

- 57% of the companies who have introduced a quality system, think that the benefits from it are in the higher quality of their products/services, the decreased total costs and the satisfaction of the buyers/users;
- 38,6% of the participants aim to have the ISO standard certificated hanged on a wall, without real purpose or need to improve the company, produce quality products or to edit the business processes for collaboration with the buyers and the partners from around the world;
- 4,4% of the researched companies that have certified a system for providing quality products/services, but that also create unnecessary costs and bureaucracy, do not see the benefits, do not reach the wanted advantages on the market nor fulfil the requests of the ISO 9001 standards.

The distribution of the research results according to economic branches is given in Figure 3.

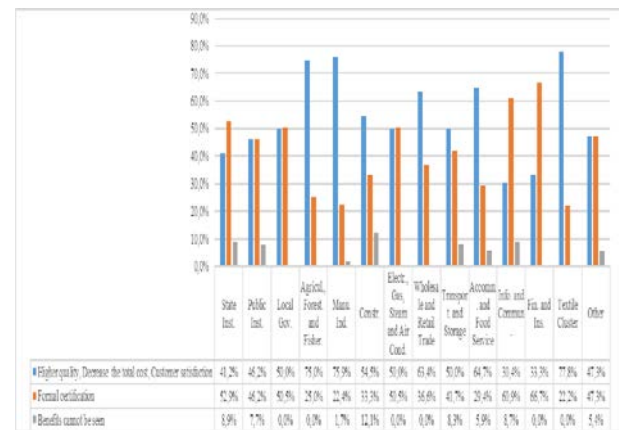


Figure 3. Summary of the results for the benefits of the introduced system of quality according to ISO 9001:2015 in the companies/institutions according to the economic branches

Those companies that already apply the system management of quality, unlike those *that don't, have the following benefits:*

- obtained quality of products and services that fulfil the needs of the buyers/users;
- improved quality of the business processes; compatibility between the strategic and the operative management of the companies;
- the system of quality according to the ISO 9001 standards represents a base for a continuous promotion of quality with the application of the TQM strategy;
- order and discipline are present in the work process.

Our analysis showed that the companies that have only formally certified a system for obtaining quality of the products/services, and do not fulfil the requests of the ISO standards, consequently do not have any benefits from the formal certified quality system.

The application of the quality system means that there is a new type of organization and a special position for the representative from the authorities. In order to spread the role and the determination of the top management in relation to the established system of quality, we ask the following question: *Where is the quality manager situated in the organizational structure?*

- 51,2% of the researched companies, which implement a system for providing quality, have responded that the representative for quality is an employee who responds directly to the top management;
- 22% of the interviewed have responded that they do not have a representative, which leads us to the conclusion that they have only formally certified the quality system;
- 15,4% of the companies who have an introduced system for quality have responded that the place of the representative from the quality department is on the Executive board (the board of directors) in the hierarchy of the company;
- 11,3% of them have stated that the quality representative is in the quality services.

The application of the quality system implies writing of and applying the standard operative procedures (SOP) and directives. In the process of writing the documents the model and the contents change, and at the same time the changes appear in the organizational structure and there is reengineering of the business processes. All of the changes aim to the adjustment of the company to the new needs. The changes refer to: the new way of grouping the organizational parts or units, the delegation of the obligations and the responsibility, the coordination and the communication.

The situation in the Macedonian companies regarding this question is the following:

- 44,1% of the researched companies that implemented a system for quality provision, have responded that the work tasks, the obligations and the responsibilities are defined to the tiniest details;
- 25,6% of the companies that implemented a system for quality provision have responded that the work tasks, the obligations and the responsibilities are defined differently in different situations;
- 20, 1% of the companies have stated that the work tasks, the obligations and the responsibilities are defined, but aren't applied in practice;
- 10,2% stated that in their companies the work tasks, the obligations and the responsibilities aren't defined.

In order to identify if the Macedonian companies have an efficient system of quality by following the way of how the business processes are conducted (identification, documentation and control) and complete documentation on efficiency of the system, we ask the following question: ***Do the employees***

expect standardized procedures for all business processes by their authorities?

- 47,7% of them have stated that they receive and expect precise orders only for the complicated things and the specific requests from the buyers/users;
- 29,5% of the analysed companies have made SOP for all the business processes and because of that the employees expect clear and precise orders for each activity;
- 12,4% of the analysed companies have employees that manage alone, without any expectations;
- In 10,5% of them, the employees get precise orders from a situation to a situation.

In order for the system of quality to be effective and efficient, it is very important that the employees receive clear and precise SOP for every activity, also that there are criteria for evaluation of the results not only for the specific and complicated things or the specific requests of the buyers/users. These data show the fact that in Macedonian companies the quality system is only being formally certified as a need implied from the market without the desire for a fundamental change of the company, redefinition of the obligations and the responsibilities or development of the quality. The formal certification of ISO 9001:2015 standards does not bring the desired advantages on the market, nor do they fulfil the needs of the ISO standards.

Our managers that deal with the survival of their business can hardly understand the modern trends in the development of the quality management based on the TQM (Total Quality Management) strategy.

Lately there are more and more owners and managers of private companies that want to become qualified to work in accordance to the international standards and to strategically connect with the West. The part-time job hiring of managers within the quality management results in loss of the gained position on the market.

The analysis on ***who is responsible for the quality of the products/services*** in Macedonian companies gave the following results:

- In 56,2% of the analysed companies the quality department, the management and all the employees have a complete responsibility for the quality;
- However 23,7% of them stated that no one takes care of the quality;
- 15,7% of them have responded that the responsibility for the quality is on the quality department and the management;
- 4,4% of the analysed companies left the responsibility only to the department of quality.

Analysing the results from the questionnaire, we can note that there is a need of the Macedonian companies to certify a quality system. It is a direct result from the pressure of the market as a main force, which will lead to: increase of the ability to work with the competitors, the need to expand and maintain the current markets, an increase of the buyers/users' satisfaction, as well as an improvement of the marketing activities. When this trend will lead most of the companies, then we will have a positive climate for quality in our society which also means a safe exit from the crisis.

Nowadays the most applied standard in Macedonia is the ISO 9001:2015 and it has been introduced in 700 companies.

The application and the certification of the various standards/systems of: quality, environment, health and safety of the employees, corporation's social responsibility, food products' safety and so on, request from many authors a new proactive manager's style and systematic orientation, as well as a reengineering of the business processes. A separate problem in our country are the small and the middle sized companies that do not have enough resources to obtain the system's needs by themselves.

The analysis in relation to the implementation of other standards in Macedonian companies have showed that 36,6% of the analysed companies have implemented other standards, while 60% of those who produce food and drinks have started with the implementation of HACCP and ISO 14001, as well as GAP – the European standard. This is a result of the Macedonian law regulation that obliges all economic subjects that cultivate, produce or refine food products to implement HACCP and other standards.

Macedonian managers evaluate the obstacles in the process of introducing the quality system in their companies as a result of:

- the monopole of some companies;
- the style and the culture of the management; the predisposition for improvisations;
- the opinion that the problems are always someone else's fault;
- the statement that the quality system ruins creativity;
- the opinion that the quality is obtained by control;
- the fear of changes – the maintenance of status quo;
- the mentality, the laziness and the superficiality or the attitude: we don't have time for that.

On the basis of the received results and the above mentioned aims of this research, it was confirmed that in Macedonian companies there is:

- poor care for quality;
- lack of attention to the continuous education;
- minimal invest in innovation;
- very small number of companies have built in system for quality;
- very minimal care for the employees, the buyers, the suppliers and the environment;
- weak application of SPC;
- working with large costs;
- team work is considered as old-fashioned;
- lack of micro-climate for quality development in RM;
- lack of motivation for quality development;
- poor application of Informatics in the production;
- certificates are obtained at any cost;
- lack of strategic planning and effective management (usually one person does many functions).

In one word there is need for reengineering of the Macedonian companies.

The results from the research have helped in the creation of a universal and integral methodology for projecting and implementing the quality system in the companies as part of a universal and integral methodology for projecting and implementing the TQM system in the companies [12]. This methodology can be applied in planning new changes of the way of thinking of the employees, when the company wants to apply the TQM strategy or when it strives to be "a world class" company. In order to fulfil those aims, the managers and the employees need to gain additional theoretical and practical knowledge that will help in the process of conducting the companies. The implementation of ISO 9001:2015 is the first step toward TQM strategy application. It is not possible to apply this TQM strategy without this basis [13].

4. Suggested Methodology for Projection and Implementation of the Subsystem – Internal Standardization

The projection of the quality system is realized through determining the key business processes and their subsystems, and in that way the strategy is reduced to ordinary and daily activities, while the functional approach is replaced with a processed approach. For that aim, we need projection teams for every subsystem [6]. The creation of management teams is fulfilled by: inclusion, authorization and encouragement of the managers in the projection

process of every subsystem in the TQM; by having an effective dialogue with the employees through the creation of an effective communicational system [14][15][16].

The duration of the process of projecting and implementing the internal standardization is given in Figure 4:

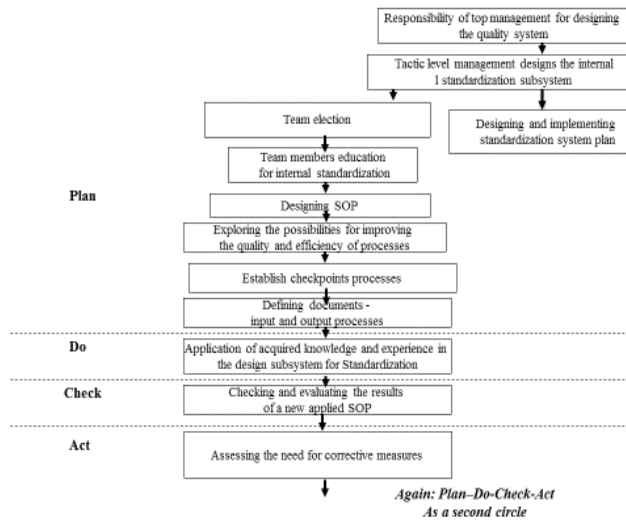


Figure 4. The duration of the process of projecting and implementing the subsystem of internal standardization

- **(Plan) step 1:** Plan for projecting and implementing the subsystem – internal standardization.

Distribution of the tasks in a determined period after a given order – Gantt chart.

- **Step 2:** Choosing team members

In choosing the members of the team, it is important to evaluate some other factors:

- If the team is ready to note the whole process;
- If the team members can spot the critical points where data can be collected;
- If the members of the team can note the course of each operation in the process, the movement of the people, the movement of the resources;
- If the team wants perfection from the start to the end of the process.

- **Step 3:** Education of the team members for projecting and implementing the quality system
- **Step 4:** Projecting of SOP (standard operative procedures) in accordance to the current situation in the company

Through SOP (standard operative procedure) are defined the courses of the business processes, and the obligations and the responsibilities of the employees are defined on that basis. It is organized that the processes are simple and efficient (more things are

combined into one). The process needs to be conducted naturally and in the fastest way, it needs to be directed toward results and not toward tasks, and the person that conducts the task needs to be specialized. The number and the amplitude of these procedures (SOP) depends on the number of activities in the given process. The number of SOP is not important, but they need to be connected, i.e. the end of one process has to be the start of some other process. This procedure obtains discipline and order in the work, because there is a correct communication among the employees in solving the problems related to quality.

The best way of portraying SOP is with a block diagram where all the phases of the business process are described, as well as the people that do the activities and the input and the output documents. In this way, we simply note all of the weaknesses and it can be quickly reacted to dispose the causes for those weaknesses. The block diagram is the most simple and the most practical way of describing the business process.

The criteria and the methods essential for obtaining effectiveness from the function and the conduct of the processes need to be measurable, and all activities essential for achieving the planned results of the process have to be built in the documentation of the system for quality conduct (SOP and instructions).

- **Step 5:** Analysis of the possibilities for improving the quality and the efficiency in the processes.

On this level we apply: statistic methods for costs optimization; methods for foreseeing the quality; methods for determining the vision of the developing companies; planned experiment etc.

All of these methods and techniques will help the optimization of the business processes and the creation of SOP. The optimization is one of the most important quantitate approaches in the process of decision making, because most of the problems related to the projection, the construction and the realization of SOP can be solved.

- **Step 6:** Determining the control points of the processes, where data can be collected
- **Step 7:** Defining the documents – inputs and outputs in the processes

The documentation is a written way toward quality of a given process in the company. Through it we can note who does what, where and to whom does that person respond to (with what kind of a report) etc.

- **(Do) Step 8:** Application of the gained knowledge and experience in implementation of the projected subsystem for standardization

- **(Check) Step 9:** Checking and evaluating the results of the newly applied SOP
- **(Act) Step 10:** Evaluating the need for corrective measures

Corrective measures are suggested based on the check-up and evaluation of the results, and the circle starts to turn once again.

This methodology has been applied in practice in some companies [17]. The need for projection and implementation of the quality of all business processes has been emphasized, so that the defined quality is obtained and the buyers/users are protected from defective products. In accordance to the ISO 9001:2015 standards, SOP is projected after the QC-CE (Quality Circle-Cause and Effect) model for all of the current business processes. This model helps the realization of vertical, horizontal and diagonal connection among the employees according to the structure of the pyramid [18][19]. The process of obtaining quality in the company is accompanied with the flow of the information according to the standard operative procedures. The system of quality defines the obligations and the responsibilities of all employees and in this way the transport of information obtains full care for quality [7].

5. Conclusion

The methodology of projecting and implementing the system of quality has a reversed connection as a result of the necessity for permanent promotion of the business processes. By repetition or spiral repetition of these cycles, we can see the benefits from the application, which changes the organizational culture toward these initiatives and represents an encouragement for higher aims for perfection. This methodology is successful not only in the implementation of the improved business processes in Macedonian companies, but it also makes the employees aware of the quality and their determination toward increasing the satisfaction of the buyers/users.

Acknowledgement

This study is a part of the research project "Developing a model for performance improvement of business processes by an application of benchmarking strategy based upon examples of innovation", (Ref. No. 17-1395/1).

Reference

- [1] Beskese, A. & Cebeci, U. (2001). Total quality management and ISO 9000 applications in Turkey, *The TQM Magazine*, 13(1): 69-73.
- [2] Mitreva, E., Taskov, N. & Lazarovski, Z. (2014a). The need for the design and implementation of TQM system for the airport services TAV Airports Holding, Macedonia. In: *8th International Quality Conference, 8th IQC, Center for Quality*, Faculty of Engineering, University of Kragujevac.
- [3] Casadesu, M., & Gimenez, G. (2000). The benefits of the implementation of the ISO 9000 standard: empirical research in 288 Spanish companies, *The TQM Magazine*, 12(6): 432-441.
- [4] Kanji, G. K. (1998b). An innovative approach to make ISO 9000 standards more effective, *Total Quality Management*, 9(1): 67-78.
- [5] Mitreva, E. (2013a). The superior customer's value of the new economy implemented within Macedonian companies. *International Journal for Quality Research*, 7(2): 215-220.
- [6] Mitreva, E. & Prodanovska V. (2013b). *The Management Teams are a Unique Business Potential that can Initiate, Identify and Manage Change within the Organization*. In: *Applied Social Sciences: Administration and Management*. Cambridge Scholars Publishing, Newcastle upon Tyne, UK, 57-65.
- [7] Mitreva, E., Taskov, N., Sazdova, J., Gjeorgieva, I. & Gjorshevski, H. (2015a). The Need for Implementation of Integrated Management Systems (IMS) in Macedonian Companies". *Calitatea - acces la succes (Quality - Access to Success)*, 16(147): 62-65.
- [8] Mitreva, E., Taskov, N. & Crnkovic, S. (2014b). Application of methodology for business process improvement in specialized diagnostic laboratory. *Quality - Access to Success*, 15(141): 91-95.
- [9] Mitreva, E., Taskov, N. & Angeleski, M. (2015b). Approaches for the Advancement of Business Processes in a Company that Deals with Graphic Production". *Actual Problems of Economics*, 6(168): 190-201.
- [10] Bohdanowicz, P., Simanic, B., & Martinac, I. (2005). Environmental training and measures at Scandic Hotels, Sweden. *Tourism Review International*, 9(1), 7-19.
- [11] Medina-Muñoz, D., & García-Falcón, J. M. (2000). Successful relationships between hotels and agencies. *Annals of Tourism Research*, 27(3), 737-762.
- [12] Mitreva, E. (2011). Model-integral methodology for successful designing and implementing of TQM system in Macedonian companies. *International Journal for Quality Research*, 5(4): 255-260.
- [13] Mitreva, E. & Filiposki, O. (2012a). Proposal methodology of the subsystem - internal standardization as part of TQM system. *International Journal for Quality Research*, 6(3): 251-258.

- [14] Mitreva, E. & Filiposki, O. (2012b). Proposed methodology for implementing quality methods and techniques in Macedonian companies. *Journal of Engineering & Processing Management*, 4 (1): 33-46.
- [15] Chepujnoska, V. & Mitreva, E. (2008). Methodology for optimization of the quality costs, *Economic development, Skopje*, 10(1): 213.
- [16] Prodanovska, V. & Mitreva, E. (2012c). Incorporation, authorization and encouragement of the employees in order to improve the quality of the educational process. In: *Two decades of academic teaching*, 18-19 June; Timisoara.
- [17] Mitreva, E., Cvetkovik, D., Filiposki, O., Metodijeski, D., & Gjorshevski, H. (2016a). Implementation of the methodology for flawless operation at a frozen food company in the Republic of Macedonia. *Calitatea-acces la succes (Quality-Access to Success)*, 17(153), 92-98.
- [18] Mitreva, E., Nikolov, E., & Nikolova, B. (2016c). Application of Total Quality Management (TQM) in the Macedonian Railways Transport in the Republic of Macedonia. *Calitatea*, 17(151), 55.
- [19] Mitreva, E., Nikolov, E., Nikolova, B., Taskov, N., & Dimitrov, N. (2016d). Methodology for Optimizations of Business Processes in Macedonian Railways-Transport in the Republic of Macedonia. *Mediterranean Journal of Social Sciences*, 7(3 S1), 394.