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INFLUENCE OF INTRODUCTION TIME, SIZE AND ACTIVITY OF ORGANIZATION TO THE ACHIEVED EFFECTS OF INTRODUCED QUALITY SYSTEM

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ABSTRACT: More than one million organizations worldwide introduced quality management system [QMS] in their business, and through their work they showed and achieved some of the effects, mainly positive ones, which were offered by introduction and consistent implementation of requirements of quality system in their organizations. Certainly is that this time the achieved effects depends on many factors such as time for introduction of quality system, size of organization, type of activity and other factors. Many authors agree that this path should be taken as soon as possible, i.e. that organizations which have earlier introduced and implemented quality system will experience better effects. We think that activity of organization [manufacturing or service] will not have more significant influence to achieved effects, while the influence of number of employees will depend on researched effect and will have different impacts. This paper presents the results of research of the influence of time for introduction of quality system, size and activity of organization on 14 studied effects obtained by the research in 204 organizations in Bosnia and Herzegovina.

KEYWORDS: quality system, effects, introduction time, size of organization, activity of organization

INTRODUCTION

Global market changes, new technologies in all fields, new manufacturers and suppliers, increasing demands of customers and users, new demands and constraints of targeted markets cause new style of business management system where managements have to find effective and quick solutions. Increasingly, you can hear that only systems that continuously improve their business and strive to be ahead of the competition have a chance to preserve their status, improve their business and market position. [10] The market as a top criterion for success, and „giant“ struggle led on it, narrowed the space for the lack of professionalism, incompetence and inferior. There is no more „safe“ position in the market. This means, to produce what the market wants, at a certain level of quality, affordable price and delivery times, continuously increasing satisfaction of customers and other interested parties. In the competitive struggle the price is no more a decisive factor, but the product quality and reputation of the manufacturer. The quality has become a fundamental factor of effectiveness and basic principle of operation of all successful business systems.

One of the ways to achieve quality and quality management in organization is the series of ISO 9000 standards. The series of ISO 9000 standards has been developed in order to assist organizations in establishing effective quality management system. All of them together [ISO 9000, ISO 9001, ISO 9004, and ISO 19001) represent a harmonious wholeness which facilitate mutual understanding. The primary goal is to bring organization closer to the business excellence. In fact, basic assumption is that the effective management of organization is a result of introduction and maintenance of such quality management system [management) which provides a steady improvement of business, while respecting the needs of all stakeholders.

REVIEW OF RESEARCHES

It has been written a lot about the necessity and benefits of introduction of quality systems. However there is a question what have the organizations really acquired, that is what impacts or effects have they achieved by introduction of quality system? What happened in the organization? [2]

In professional journals and on the web we can find various opinions about necessity of ISO 9001 quality system. Some opinions are extremely negative, but nevertheless there are still far more positive opinions, and many experts believe that a good application of the series of ISO 9000 standards is the first step on the road to business excellence. [14]

As for the research related to the type of activity we can generally say that they are most numerous ones because in the beginning it was thought that the same series was primarily intended for manufacturing organizations. Only after introduction of series of ISO 9000 standards from year 2000, a greater share in these studies was given to service organizations, too. Let us mention some of the researches referring to activity of organization. The research [7] which was conducted by LRQA [Lloyd's Register Quality Assurance] and Surrey University in 222 organizations in manufacturing sector in England, studied six business indicators which were compared to industrial average. All six factors favored organizations with introduced quality system. Here are also the results of research conducted in 1190 certified organizations in the field of manufacturing, construction and service industry. After conducted research the greatest benefits were: in better management control 78%; increasing awareness and elimination of procedural problems 77%; usage of standard as a promotional tool 73%; increasing of the service towards customers 70%; keeping of current customers 67%; increased satisfaction of customers 67%, etc.

The paper [8] presents results on the effects of total quality management TQM among Norwegian organizations, where there were 316 private organizations in empirical research, mostly from manufacturing [57%] and service [27%] activity. The greatest effects of TQM were recorded in organizations which implemented all elements of approach.

Manufacturing and service organizations were also studied in the paper [16]. The research included 294 English organizations. The study of the influence of individual elements of quality ISO and TQM to competitive capability of organization showed significant connection between elements of TQM and improvement of competitive capability in 74% organizations and in 28% organizations where the ISO quality system was used. The research also showed higher values of the indicators of competitive capability in organizations which started introducing standard and upgraded it by TQM.

The research [5] in America studied the influence of obtaining certificate for ISO quality to manufacturing organizations which are listed on the Stock Exchange. The research was conducted in period of ten years on many organizations, over 7000 manufacturing organizations. The influence of certification to improvement of financial effects was established, and measured by ROA [Return on Assets]. It was precisely established that organizations which did not obtain certificate had experienced significantly decrement of the ROA, productivity and sales, while the organizations with certificates mostly avoided the fall.

Research [12] studied costs, advantages and level of satisfaction by introduction of quality system in organizations in Saudi Arabia. The research was conducted in 140 manufacturing organizations with obtained certificate. The results indicate that manufacturing organizations were satisfied with introduction of quality system, if we compare advantages which they acquired taking into account the relevant costs. When it comes to the researches that have dealt with the size of organization we list some of them. Differences in the usage of Total Management Quality [TQM] between big and small organizations in America were studied in the paper [1]. Research included 499 organizations for producing components for the U.S. car industry. TQM was used by 50% of organizations which participated in the survey. In order to determine differences in usage of TQM between small and big organizations the approach was decomposed to the elements. The way of introduction of access is not reflected by the size of organization and the elements of successfully introduced approach were equally expressed in both big organizations and small ones. Smaller organizations compensate lack of resources in managerial experience by bigger flexibility and innovation. Analysis of the impact of ISO quality system and approach to the TQM to small organizations in Northern Ireland was made in paper [13]. Significant findings of the research which included 108 small organizations are that the cost for introduction of ISO quality system per employee in small organizations is higher than in big organizations. High consumption of financial resources discourages smaller organizations from upgrading ISO quality system into the TQM, even though the biggest effects were achieved exactly in organizations which continued introduction of standards with the TQM.

The influence of the size of organization was conducted in Spain [4]. The research was conducted in 502 organizations in Spain from which 38% had 15-100 employees, 28% had 101-200, and 20% had 201-300 employees. The largest internal effects were achieved on the definition and standardization of working procedures [33%], increment of trust into quality of organization [11%], better participation in work [11%], reduction of improvisations [7%].

The Japanese survey [2] in 718 organizations, from which 292 of them, mostly from manufacturing sector, determined positively about effects of the usage of ISO 9000 quality system. The authors claim that both effects and factors which affect volume of effects differ in the sense of size of the organization. Authors divided organizations in three groups, by the size and considering number of employees: small, middle and large, [up to 100 employees are the small ones, and over 1000 employees are the large ones). Small organizations recognize effects per costs if the motives for certification were the improvement in business. Middle organizations recognize effects per costs if the motives for introduction were developing ones and where the maintenance of quality system is appropriate. In large organizations the effects in the field of costs mostly depended primarily on satisfactory involvement and understanding of employees, information system, so on the style of introduction and on the previous activities in the field of quality provision. Small organizations recognize quality improvement if the way of introduction was appropriate. As for the real quality improvement the middle organizations take the way of maintenance of quality system and motivation for improvement as the most important. Large organizations recognize quality improvement if the way of introduction and maintenance is appropriate. There were no sales effects in small organizations. The middle organizations had sales effects only if the introduction was appropriate and if they wanted to achieve maximal requirements of standard.

The paper [3] conducted a study of 30 Canadian organizations which have introduced ISO 9001:2000. The study focuses on the difficulties faced and is based on the study of these difficulties related to three factors: size of organization, organization age [duration of existence) and according to the market which some companies are oriented to. As for the influence of the size of organization the organizations are divided in different groups as follows: small [1-100 employees], middle [101-500 employees), and large [501 and more employees) organizations. Even though there is an assumption that the size does not significantly affect implementation of certification and further activities the results showed that there was a significant influence in regards to the size of organization. The results show that large organizations which have more resources at their disposal have fewer difficulties during implementation, compared to the small organizations which are limited with resources.

In year 2006 Piskar and Dolinšek [15] published an extensive scientific monograph where they represented results of a survey of effects of using ISO 9000 standard, which was conducted on 212 certified organizations in Slovenia, during which the four groups on questions were answered by the managers for quality system, directors of some business functions, and chief managers of the studied organizations. Authors also conducted the influence of size of organization, activities of organization and the year of obtaining certificate, where it was shown that organizations which have possessed introduced quality system for longer period have achieved better results. Activity and size of organization differently affected some of researched factors.

METHODOLOGY OF RESEARCH

Research of the effects of B&H organizations which have introduced and certified their quality system according to demands of standard ISO 9001:2000 is defined in this paper as empirical research [because authors have chosen direct observation of selected segment from the real environment and analysis of collected information in it) [9]. For collection of quantitative information was used one of four main ways – a questionnaire. Authors shaped the questionnaire in a way to have it as simple as possible [for usage and understanding), thorough and reliable, made in the way of claims and questions so that its filling needs as less time as possible. In the view of time dimension the research was limited only with one time point, i.e. research of the time review, while from the point of view of originality the research goes towards research with primary performance because it is based on original empirical data. It is one of the first researches on that area in selected environment [Bosnia and Herzegovina) and in such volume. The research is structured in the way to enable comparison or possible repeated performance after certain time, and in time it could become starting research [starting point) of study which could be continued on that “follow-up study” [17,6].

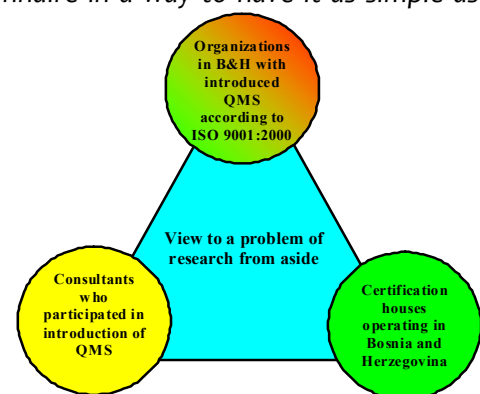


Figure 1: Overview of triangulation method used in paper [9]

TRIANGULATION METHOD

During integral research presented in [14] authors used triangulation method. It refers to the usage of more than one approach in procedures of researches in the purpose of strengthening of trust into results of researches. Webb and Denzin defended the fact that the hypothesis verified-experienced by more methods is more worth from the one that is verified-experienced by only one method. Denzin recognizes four sorts of triangulation: methodological triangulation, data triangulation, triangulation of research and theoretical triangulation. [11]

In this paper data triangulation is used in a way that authors could gathered information on the same issue from various sources, as well as the usage of different kind of information [qualitative and quantitative) collected by various methods. Information that refers to the problem of research of effects acquired by organizations in B&H was given by the following sources [Figure 1] [6]:

- Organization with certified quality system according to ISO 9001:2000,
- Consultants who worked on preparation of those organizations for introduction of quality system,
- Certification houses that certified those systems.

THE CONDUCTION OF THE INFORMATION COLLECTION PLAN

The postal questionnaire was selected for information collection. Table 1 shows described conduction. As for the phone and personal contacts authors limited themselves to remind and ask people to fill questionnaires and return them. In this way could be fulfilled one of the key conditions for objectivity of research.

REPRESENTATIVENESS OF THE SAMPLE

As for the organizations the situation is as follows: Regarding the activity all organizations gave the answer, and the structure is as follows (Figure 2): eighty two (40,2%) organizations were service organizations, 24 (11,8%) were mainly service organizations, 72 (35,3%) were manufacturing organizations and 26 of them (12,7%) were mainly manufacturing organizations. This means that authors received closely the same sample for manufacturing and service organizations, that is insignificantly more service and mainly service (52%) organizations in comparison to manufacturing and mainly manufacturing (48%). This points to a change of belief that only or mainly manufacturing organizations dominate in the certification process. Basically, number of organizations from the area of service activities which had introduced and certified quality system is increasing [9].

Answers to a question regarding the sort of company were as follows: Limited liability company (139 answers=68,1%), joint stock company (41=20,1%), public companies, organs and organizations (21=10,3%) and one organization from the area of public companies, one organization from the area of financial institution and others (3=1,5%).

Table 1: The conduction of the information collection plan [9]

| | |
|--|---|
| Statistical population - for the organizations - for the consultants - for the certification houses | - organizations in B&H which posses introduced QMS according to requirements of standard ISO 9001:2000 - consultants who operate in the area of B&H - certification houses which operate in the area of B&H |
| Unit of the sample | Individual organization, consultant and certification house |
| Limits of sampling - for the organizations - for the consultants - for the certification houses | 660 organizations from the population in B&H 70 consultants 14 certification houses |
| Size of the sample - for the organizations - for the consultants - for the certification houses | - achieved 204 units - achieved 31 units - achieved 11 units |
| Procedure of sample choosing | Random sampling inside the population |
| Researching instrument | Structural questionnaires |
| Acceptance of the researched factor | Mark of the factor $\geq 3,70$ |
| Method of information collection | Combined postal method, supported phone calls and contacts through ministries |

Standards are mainly introduced in economic companies and service organizations, and number of companies in public administration [municipalities and cantons) and other organizations [such as insurance companies, agencies for property and personal protection) slowly grows [14]. Answers to a question regarding number of employees were as follows [Figure 3): eighty seven organizations have got up to 50 employees (42,65%), 81 have got between 51 and 250 employees (39,7%) and 36 organizations have got more than 250 employees (17,65%). Here it can be seen that every group for itself

can represent minimal statistical sample and also that participation of large certification organizations in B&H is decreasing and the focus is on small-size and middle-size organizations [14].

Answers to question regarding the year of acquiring of the certificate: Sixty two organizations (30,4%) acquired certificate in the period 1997-2003 and 142 organizations (69,6%) acquired certificate in the period 2004-2008. Answers were given mostly by the organizations which acquired certificate in the period 2005-2007. This shows that in starting years upon acquiring of the certificate there is better motivation for quality in organizations and that their readiness to participate in such researches is bigger [9].

Our wish was to set nine questions in the form of statements, and that quality managers in organizations give answers to them (which was achieved in 90% of cases, while in remaining 10% answers were given by the general managers), consultants [achieved in complete), and auditors who worked on certification audits (for certification houses, which is also achieved in complete). Therefore we can assume that answers express opinions of the ones we expected to get from. [9] Respondents answered on the basis of five-level Likert scale. Answers were posed in the shape of statements. From the given sample of population we calculated average value [AV), and standard deviation (SD).

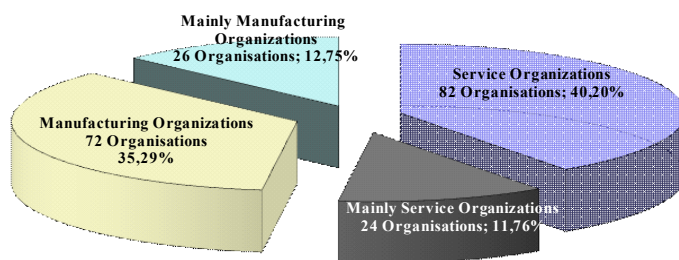


Figure 2: Overview of organizations per activity [9]

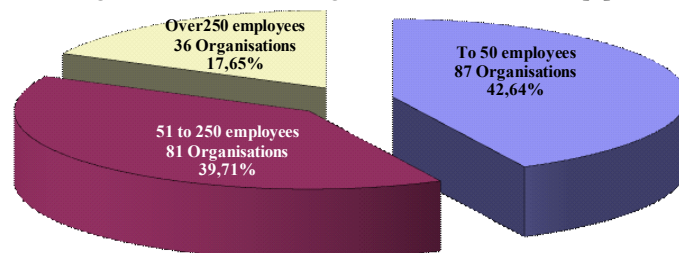


Figure 3: Overview of organizations per number of employees [9]

RESULTS OF THE RESEARCH

Table 2 presents overall results, i.e. parallel overview of the influence of introduced quality system to some observed factors of business success obtained from organizations, consultants and certification houses.

Table 2: Parallel overview of the influence of introduced quality system to some factors of business success [organizations – consultants – certification houses] [9]

| | Factor/Marks | Organizations | | Consultants | | Certific. houses | |
|-----|--|---------------|------|-------------|------|------------------|------|
| | | [1] | [2] | [1] | [2] | [1] | [2] |
| 1. | Quality of products and services is improved | 4,02 | 0,58 | 3,86 | 0,44 | 3,82 | 0,40 |
| 2. | Business results are improved | 3,87 | 0,72 | 3,86 | 0,58 | 3,82 | 0,75 |
| 3. | Reputation of organization is better | 4,25 | 0,66 | 4,14 | 0,66 | 4,50 | 0,53 |
| 4. | Number of innovation in business process is increased | 3,84 | 0,73 | 3,39 | 0,83 | 3,20 | 0,92 |
| 5. | Processes are clearer | 4,24 | 0,61 | 4,39 | 0,57 | 4,55 | 0,52 |
| 6. | Ordering of information system is better | 4,05 | 0,75 | 3,83 | 0,85 | 3,73 | 0,79 |
| 7. | Satisfaction of customers is better | 4,03 | 0,76 | 4,00 | 0,60 | 4,27 | 0,47 |
| 8. | Customers are more loyal | 3,74 | 0,85 | 3,74 | 0,66 | 4,00 | 0,63 |
| 9. | Cooperation with customers is better | 3,93 | 0,76 | 4,22 | 0,76 | 4,10 | 0,57 |
| 10. | Satisfaction of employees is better | 3,65 | 0,77 | 3,31 | 0,74 | 3,55 | 0,69 |
| 11. | Atmosphere among employees is improved | 3,64 | 0,77 | 3,46 | 0,66 | 3,36 | 0,50 |
| 12. | Mood in organization is improved | 3,73 | 0,75 | 3,48 | 0,67 | 3,55 | 0,58 |
| 13. | Intern audits are used as a successful tool for provision of constant improvements | 4,24 | 0,62 | 4,00 | 0,68 | 3,91 | 0,30 |
| 14. | Effectiveness and usefulness of intern audits are improved | 4,11 | 0,62 | 3,90 | 0,77 | 4,09 | 0,54 |

[1) AV – Average Value; [2) SD – Standard deviation;

Comment: As it can be seen from Table 2 most of studied factors obtained positive score (>3,70), only factors of employees' satisfaction did not experience bigger changes, that is introduced quality system did not affect improvement of these factors. The only bigger change occurred at a question of increment of number of innovations in business process which certification houses and consultants evaluated by negative score 3,20 (<3,70) as opposed to the organizations. This can partly be justified by the fact that permanent improvement are not yet implemented in organizations, but begin acting upon development of quality system in the second and third year.

In regards to other answers here is the following situation: Increasing the quality of products and services was noticed by everyone, but with the fact that organizations noticed a slightly higher impact score (score 4,02) but also with a slightly larger deviation SD 0,58.

„Improvement of business results“ was evaluated almost identically by everyone, with a slightly stretch in organizations and certification houses. According to certification houses „The Reputation of the Organization“ is strongly increased and on the second place in regards to rated factors. „Clearness Process“ is the best-rated factor of almost all, and as for certification houses ($AV=4,55$; $SD=0,52$) it is better than in organizations themselves ($AV=4,24$; $SD=0,61$) because we think that certification houses are better informed about the every process approach, and that organizations have not yet experienced the benefits of this approach or do not know to use it enough. This is usually the best-rated factor.

Structure Information System shows that information technologies become more prevalent and that their usage goes in the direction of tracking the results of business and management processes. Some worse score was given by the certification houses, and the diverse is a slightly bigger than in organizations ($AV=3,73$; $SD=0,92$).

„Cooperation with customers“ has taken a high place in understanding the organization which was also noticed by certification houses. Organizations gave great importance to customer which was shown by $AV=4,27$ and which organizations noticed through the question of „Loyalty of customers“ which was a weak link with both the organization and consultants, that is they did not recognize influence of standard to this factor, ($AV=4,00$; $SD=0,63$). This certainly contributes to better cooperation with customers which was rated as very good by all respondents.

There are three questions which both organizations and consultants rated by „negative mark“ and refer to „Satisfaction of employees“, „Improving the working atmosphere“ and „Improving the mood in organization“. One can definitely say that introduction of quality system did not affect these factors. In the future these factors will certainly have to be given more attention because the employees are the ones who should contribute with their work and engagement to better product quality and better effectiveness which will increase business results and reputation in the eyes of customers.

Internal audits are used as a successful tool for ensuring continuous improvements, as noted in particular by organizations, and to improve their effectiveness and usage, as noted by certification houses. Although the scores are very high the certification houses still see there a possibility of improvement and better usage of this tool which is at disposal to organizations.

RESEARCH OF THE INFLUENCE OF TIME FOR INTRODUCTION, SIZE AND ACTIVITY OF ORGANIZATION TO OBSERVED FACTORS

The purpose of analysis of these responses is to determine the general opinion of employees who constantly deal with quality, how did the introduced quality system according to ISO 9001:2000 standard, which was valid at the time of research, affect aforementioned factors. In the continuation, only the results given by the organizations will be observed. We will look more in details to some factors and process them from the point of view of introduction of quality system, size and activity of organization.

In Table 2 we observed whether the quality of products and services has been improved by obtaining th certificate. Average value (AV) for all organizations is 4,02, and standard deviation is $SD=0,58$ [eight per value of the set of 14 factors).

Table 3 presents the influence of number of employees, year of obtaining the certificate and activity of organizations to the factor of improving the quality of products and services. When we analyze organizations per activities, the AV for all manufacturing organizations is 3,9; and SD is 0,66; and for the service organizations the AV is 4,05; and SD is 0,51. The service organizations noticed a slightly better influence of introduced quality system to improving the quality of products and services. New standard which caused deflection from manufacturing organizations made a turnover in increasing the number of certificated service organizations.

We also observed the influence of the year of obtaining the certificate. Organizations which obtained certificate before year 2003 achieved $AV=4,20$, and $SD=0,57$. Large organizations with over 350 employees achieved $AV=4,09$ and $SD=0,62$; while manufacturing organizations are the only ones which achieved $AV=3,99$ and $SD=0,66$.

In regards to business results (Table 2.) result of the survey is somewhat weaker but still high. AV is 3,87 while the answers are somewhat dispersed around AV, and therefore the SD is 0,72. When crossing the factors (Table 4.) the weakest results were shown in organizations which obtained certificate after year 2003. The AV was 3,77 and SD was 0,73. In organizations which obtained certificate before the end of year 2003 the AV was the highest 4,11 and SD was 0,64. The same score was given to large organizations with over 250 employees, the AV is 4,11 and the SD is 0,76.

This shows that in first years of obtaining the certificate the influence of certificate to business success is negligible or was not recognized. The best result is in organizations which obtained their certificate in period 1997-2003. As for other factors it is visible that activity of organization did not have any influence to the results, while the size of organization had influence, and better results were shown in large organizations.

Introduced system and certification of quality system have significantly affected increasing the reputation of organization, the AV is high 4,25 and the SD is low 0,66 (Table 2). This is the highest score in this set of questions.

Table 3: Influence of the number of employees, year of obtaining the certificate and activity to the factor of improving the quality of products and services [9]

| Influence of the size of organization to the improvement of quality of products and services | | AV | SD |
|--|--|------|------|
| 1. | With over 250 employees | 4,09 | 0,66 |
| 2. | With 51-250 employees | 4,00 | 0,62 |
| 3. | With less than 50 employees | 4,01 | 0,52 |
| Influence of the year of obtaining of certificate to improvement of quality of products & services | | AV | SD |
| 1. | Organizations which acquired certificate in the period 1997-2003 | 4,20 | 0,57 |
| 2. | Organizations which acquired certificate in the period 2004-2008 | 3,94 | 0,57 |
| Influence of the activity of organization to the improvement of quality of products and services | | AV | SD |
| 1. | Manufacturing and mainly manufacturing organizations | 3,99 | 0,66 |
| 2. | Service and mainly service organizations | 4,05 | 0,51 |

AV – Average Value; SD – Standard Deviation

Table 4: Influence of the number of employees, year of obtaining the certificate and activity to the factor of improving the manufacturing results [9]

| Influence of the size of organization to the improvement of business results | | AV | SD |
|--|--|------|------|
| 1. | With over 250 employees | 4,11 | 0,76 |
| 2. | With 51-250 employees | 3,86 | 0,76 |
| 3. | With less than 50 employees | 3,79 | 0,65 |
| Influence of the year of obtaining of certificate to the improvement of business results | | AV | SD |
| 1. | Organizations which acquired certificate in the period 1997-2003 | 4,11 | 0,64 |
| 2. | Organizations which acquired certificate in the period 2004-2008 | 3,77 | 0,73 |
| Influence of the activity of organization to the improvement of business results | | AV | SD |
| 1. | Manufacturing and mainly manufacturing organizations | 3,90 | 0,72 |
| 2. | Service and mainly service organizations | 3,85 | 0,72 |

AV – Average Value; SD – Standard Deviation

This shows that the introduced quality system affects the visibility of organization and than it can use it as a competitive advantage over other organizations that do not possess it. The best results were shown in organizations which obtained certificate in period 1997-2003 and have got under 50 employees, the AV is high 4,41 and they have SD=0,64. Scores are mainly around AV. This tells us that in recent years there is an increased interest of smaller organizations for introduction of standard. This increased reputation in the market and confirms their seriousness and reliability of business. Table 5 presents the influence of number of employees, year of obtaining the certificate and activity of organization to the improvement of reputation of organization, where it is also visible that activity of organization did not have any influence to achieved results, and that the size had insignificant influence, where middle-size organization were somewhat weaker.

Table 5: Influence of the number of employees, year of obtaining the certificate and activity to the improvement of reputation of organization [9]

| Influence of the size of organization to the improvement of reputation of organization | | AV | SD |
|--|--|------|------|
| 1. | With over 250 employees | 4,25 | 0,73 |
| 2. | With 51-250 employees | 4,18 | 0,68 |
| 3. | With less than 50 employees | 4,31 | 0,60 |
| Influence of the year of obtaining of certificate to the improvement of reputation of organization | | AV | SD |
| 1. | Organizations which acquired certificate in the period 1997-2003 | 4,41 | 0,59 |
| 2. | Organizations which acquired certificate in the period 2004-2008 | 4,18 | 0,67 |
| Influence of the activity of organization to the improvement of reputation of organization | | AV | SD |
| 1. | Manufacturing and mainly manufacturing organizations | 4,26 | 0,76 |
| 2. | Service and mainly service organizations | 4,24 | 0,55 |

AV – Average Value; SD – Standard Deviation

In Table 2 we also analyzed questions on the influence of introduced quality system to the increment of number of innovations of business processes (permanent improvements), to the clearness of processes and to the improvement of arrangement of information system. As we emphasized earlier the standard from year 2000 allows organizations bigger selection in choosing the ways of documenting the quality management system. So, considering the size and type of activity, complexity of process, qualifications of people and culture of organization, each organization can determine minimal volume of documentation

needed for organization to prove success in planning, implementation and control of processes as well as the effectiveness of implementation of permanent improvements.

This is also proved by the analysis of answers on the influence of standard to the increment of number of innovations, which says that the AV is 3,84 and SD is 0,73. Scores per any crossing give quite equal results with maximal difference of scores in only 0,1.

This score and position on the 10th place out of 14 points out that the innovation process in business process experienced expansion but still not used enough, and that we should probably connect it with the motivation of employees. It is probably the matter of culture, mostly organizational culture and relations towards employees which is still different from Japanese.

Analysis of answers to questions about the influence of quality system to improving the transparency of processes shows us and confirms that the introduced system affected better visibility of the processes. The AV is remarkably high 4,24 and the SD is acceptably low 0,61 and it is the second best score of these 14 evaluated factors. The best visibility was achieved by the large manufacturing organizations (over 250 employees) which obtained certificate in period 1997-2003, with AV=4,28 and SD=0,58. There were no notifications less than AV=4,22 which indicates to considerably uniformity in all other crossings.

Processes are in the focus of organizations and are paid with due attention in both present time and in the future. This was pointed out by the activity of “Processes improvement” which took the first place among the activities that are planned to be implemented in order to provide constant improvements.

In order to monitor all activities and processes we have to have a huge amount of information associated with this process and we must quickly make decisions concerning the process. For quick processing of information, making various analysis and data mastering, the organizations have to have arranged information system. In Table 2 we see that the average score AV is 4,05 and somewhat higher SD=0,75; which points out that the introduced quality system affected improvement of the information system.

Table 6 presents the influence of number of employees, year of obtaining the certificate and activity of organization to the improvement of arrangement of information system where differences were noticed slightly higher than in the other two observed factors. The best results were obtained by crossing organizations with over 250 employees and by organizations which obtained certificate in period 1997-2003, the AV=4,17 and SD=0,81. Somewhat poorer result was noticed in manufacturing organizations which have 51-250 employees with AV=3,97 and SD=0,82.

“Customer is the king”. The customer is in the beginning and in the end of process approach. The customer is the reason for existence. The organization’s focus to customers is a consequence of knowing that the customer’s satisfaction is something we constantly strive to, that satisfied customers come back, and that satisfied customers spread their circle of customers and reputation of organization. Have we done enough to retain old customers and win the new ones from the competition?

Fulfilling the customers’ requirements and overcoming their expectations must become the basic motive and focus for the organizations. In the continuation we analyzed influence of the quality system to satisfaction of customers, their loyalty and mutual cooperation. The introduced quality system affects customers’ satisfaction (Table 2). The AV is 4,03 and SD is 0,76. The weakest influence was achieved mostly by the manufacturing organizations with 51-250 employees and they introduced system after year 2003, the AV=3,93 and SD=0,76. The greatest influence was noticed in organizations which obtained certificate before year 2003 and with over 250 employees. The AV is high 4,27 and SD is 0,71. As the organizations have certificate for longer time their impact to customers’ satisfaction is greater.

Table 6: Influence of number of employees, year of obtaining the certificate and activity to the improvement of information system of organization [9]

| Influence of the size of organization to the improvement of information system | | AV | SD |
|--|--|------|------|
| 1. | With over 250 employees | 4,17 | 0,81 |
| 2. | With 51-250 employees | 3,97 | 0,82 |
| 3. | With less than 50 employees | 4,07 | 0,66 |
| Influence of the year of obtaining of certificate to the improvement of information system | | AV | SD |
| 1. | Organizations which acquired certificate in the period 1997-2003 | 4,13 | 0,67 |
| 2. | Organizations which acquired certificate in the period 2004-2008 | 4,01 | 0,79 |
| Influence of the activity of organization to the improvement of information system | | AV | SD |
| 1. | Manufacturing and mainly manufacturing organizations | 4,02 | 0,73 |
| 2. | Service and mainly service organizations | 4,08 | 0,78 |

AV – Average Value; SD – Standard Deviation

Table 7 presents the influence of number of employees, year of obtaining the certificate and activity of organizations to the customers' satisfaction where slightly bigger differences were noticed than in other two observed factors.

Table 7: Influence of number of employees, year of obtaining the certificate and activity to the customers' satisfaction [9]

| Influence of the size of organization to the satisfaction of customers | | AV | SD |
|--|--|------|------|
| 1. | With over 250 employees | 4,11 | 0,75 |
| 2. | With 51-250 employees | 3,94 | 0,77 |
| 3. | With less than 50 employees | 4,08 | 0,75 |
| Influence of the year of obtaining of certificate to the satisfaction of customers | | AV | SD |
| 1. | Organizations which acquired certificate in the period 1997-2003 | 4,27 | 0,71 |
| 2. | Organizations which acquired certificate in the period 2004-2008 | 3,93 | 0,76 |
| Influence of the activity of organization to the satisfaction of customers | | AV | SD |
| 1. | Manufacturing and mainly manufacturing organizations | 4,01 | 0,82 |
| 2. | Service and mainly service organizations | 4,05 | 0,70 |

AV – Average Value; SD – Standard Deviation

Table 2 presents the influence of introduced quality system to the employees. It is important to emphasize that these are the three lowest rated factors. The average value is in the range of 3,64 in the factor of "Influence to the working atmosphere" to 3,73 in the factor of "Influence to the mood in organization", and 3,65 in "Influence to the employees' satisfaction". From this we can conclude that introduced quality system did not have greater influence to these two factors, and that had less influence to the factors of "Mood in organization". When crossing these factors the biggest result was achieved in the service organizations which hire up to 50 employees and in the ones with over 250 employees. The average value rises up to 3,80. The most critical ones are the manufacturing organizations which, in four crossings, gained the score less than 3,50 and these are the only four cases where the score less than 3,50 were recorded. The factor of employees' satisfaction in manufacturing organizations of all sizes is less than 3,50 and in the range of 3,47 in organizations with over 250 employees with $SD=0,62$, through the organizations with up to 50 employees the $AV=3,48$ and the $SD=0,91$, and $AV=3,49$ with $SD=0,76$ in organizations with 51-250 employees. The best result among these three factors was recorded in small service organizations with up to 50 employees where the $AV=3,94$ and $SD=0,64$. These points out that quality standard are easier to overcome in smaller organizations, and employees accept it as something of their own. Satisfaction of employees and mood in organization generally increase and improve with greater involvement of employees, which is more difficult to establish, i.e. organize in the larger organizations. Table 8 presents the influence of number of employees, year of obtaining the certificate and activity of organization to the employees' satisfaction where slightly bigger differences were noticed than in other two observed factors.

Table 8: Influence of number of employees, year of obtaining the certificate and activity to the satisfaction of employees [9]

| Influence of the size of organization to the satisfaction of employees | | AV | SD |
|--|--|------|------|
| 1. | With over 250 employees | 3,58 | 0,69 |
| 2. | With 51-250 employees | 3,59 | 0,78 |
| 3. | With less than 50 employees | 3,72 | 0,80 |
| Influence of the year of acquiring of certificate to the satisfaction of employees | | AV | SD |
| 1. | Organizations which acquired certificate in the period 1997-2003 | 3,79 | 0,61 |
| 2. | Organizations which acquired certificate in the period 2004-2008 | 3,59 | 0,83 |
| Influence of the activity of organization to the satisfaction of employees | | AV | SD |
| 1. | Manufacturing and mainly manufacturing organizations | 3,48 | 0,79 |
| 2. | Service and mainly service organizations | 3,80 | 0,72 |

AV – Average Value; SD – Standard Deviation

The internal audits are used as a successful tool for providing the constant improvements. The organizations proved this with a high score of $AV=4,24$ and low $SD=0,62$ (Table 2.) Internal audits of organization are used as some sort of internal control of business, and established as possible improvements within the conversations of auditors with employees, etc. the consequence of condition is improving their effectiveness and application (Table 2.). This is proved by the high $AV=4,11$ and low $SD=0,62$, confirming the opinions of organizations about the effectiveness of internal audits.

Year of introduction of quality system affects the score of organization about effectiveness and usefulness of internal audits. The average value is higher in organizations which earlier obtained certificate, the $AV=4,20$ and $SD=0,60$. Similar situation is with the factor of usage of internal audits as a tool for providing the constant improvements where, in these organizations, the AV is the highest 4,34 and $SD=0,63$. This proves that the experience in application of audits has got influence to their results. It

can be also noticed that internal audits are used better by large and service organizations. In support to a good usage of internal audits goes the fact that they were recognized as an activity that is intended to run in order to provide constant improvements [14], and positioned on the second place on activities.

CONCLUSIONS

Whether the quality will be a problem or resource of some organization depends above all on the basic standpoint towards existing quality in organization. The introduction of quality management system according to requirements of ISO 9000 standard, without any doubt, represents the first serious step in each organization on the path to provision of business and organizational excellence as well as competitive advantage.

Considering the presented results, where the average score of most of 14 observed factors is greater than 3,70, it can be concluded that Bosnian & Herzegovinian organizations are on a good path to application of quality systems according to requirements of series of ISO 9000 standard, and that they are on a path to improve quality of products and services as well as business success. Also, considering the results which occurred in the factor of satisfaction of employees we can partially confirm that organizations achieved fewer effects than expected, and that the management of organization still has room for usage requirements of standard for the benefit of improving its business. They can understand it better as a common way of managing in organization.

With regards to observed factors, it can be concluded that the greatest impact was given to the time for introduction of quality system, and that the organizations which started earlier with this path achieved better results, which is indicated by the justification of introduction of quality system.

The activity of organization did not significantly affect achieved effects, which confirms the thesis that these systems can be equally applied in both manufacturing and service organizations of all types.

The size of organization had a certain influence, where it was shown that large organizations achieved better results in most of observed factors and that better tolerate some of changes occurring during the process of introduction and maintenance of quality system in organizations.

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