Economic Horizons, January - April 2018, Volume 20, Number 1, 25 - 41
UDC: 33 eISSN 2217-9232

www. ekfak.kg.ac.rs

Original scientific paper
UDC: 502:657:006.332
doi:10.5937/ekonhor1801027J

MOTIVES FOR, BENEFITS FROM AND ACCOUNTING SUPPORT TO THE ISO 14001 STANDARD IMPLEMENTATION

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With an increase in the number of the companies that have adopted the ISO 14001 standard, the interest demonstrated in research studies regarding the assessment of the motives for and benefits from the ISO 14001 standard implementation has also been increasing. Nevertheless, in spite of the importance of the ISO 14001 standards, a discussion on their importance and the role of accounting in this process yet remains an open issue among researchers and practitioners. Starting from the above said, the main purpose of the research conducted in this paper is to identify the motives for and benefits from the implementation of the ISO 14001 standard and to examine the role of accounting in the implementation process. The empirical research in this paper was performed on the example of the 33 companies that have the obligation to submit their data on the sources of environmental pollution to the National Pollution Register. The data were collected through a poll of the management of the companies via a questionnaire, whereas the data analysis was performed by using various quantitative statistical methods and techniques, and primarily through the application of descriptive statistics and non-parametric tests. The results of the research indicate that the primary motives for the introduction of the ISO 14001 standards are an environmental responsibility, creating the image of a socially responsible company and the improvement of performances, whereas the benefits can be synthesized through the improvement of environmental performances, efficiency and profitability. Also, the results of the research study indicate that the managers of the companies partly recognize the role of accounting in the implementation of the ISO 14001 standard. The main conclusion of the research is that the management of the companies partly recognize the role of accounting in the ISO 14001 standards implementation. The main conclusion of the research is that the management of the companies in Serbia understand the importance of the implementation of the ISO 14001 standards, but not to a proper extent, as well as the role of accounting in that process.

Keywords: environmental protection, enterprise, ISO 14001 standard, motives, benefits, accounting

JEL Classification: Q51, Q56, Q57, M14, M41

INTRODUCTION

Over the past decades, the impact of industrial organizations on the environment has become apparent. On a global scale, this has led to the fact that many enterprises invest all their efforts in seeking the management instruments that enable them to decrease a negative impact on the environment and increase their economic efficiency. An environmental management system is one of the instruments that have contributed to the achievement of this goal

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and attracted the increased attention of international researchers. The most popular and the most commonly used system is the ISO 14001 standard.

The International Organization for Standardization presented a series of the ISO 14000 standards in 1996, these being the voluntary procedures that companies should adopt in their environmental protection management processes. The initial reaction to these standards was not good. Namely, in 1999, three years after the publishing of these standards, there were 10,000 ISO 14001 certificates throughout the world. Nevertheless, around 2002, there were over 46,000 certificates; in 2005, there were more than 88,000 certificates (Gavronski, Ferrer & Paiva, 2008), and in 2016, there were more than 340,000 certificates worldwide (www.iso.org). The increase in the number of the enterprises that have implemented the ISO 14001 standard has led to an increased interest of researchers in identifying the motives for (Boiral & Sala, 1998; Hillary, 2004; Link & Naveh, 2006; Gadenne, Kennedy & McKevier, 2009; Tari, Molina-Azorin & Heras, 2012). Also, having in mind the importance of information for a successful implementation of the ISO 14001 standards, the interest of researchers in the examination of the role and importance of accounting in the environmental protection management process has been growing (Wilmshurst & Frost, 2001; Yakou & Dorweiler, 2004; Vasile & Man, 2012). These studies are mainly focused on the development of the market economy, whereas research studies in developing countries are limited.

The subject of the research study carried out in this paper is the motives for and benefits from the implementation of the ISO 14001 standards and the role of accounting in its implementation.

The aim of the research is to identify the motives for and benefits from the implementation of the ISO 14001 standards and to examine the role of accounting in the process of the implementation of the ISO 14001 standards.

Having in mind the defined topic, the goal of the research, as well as the research hypothesis, the qualitative and quantitative methodologies have been applied in the paper. The application of a qualitative methodology is reflected in consulting the relevant literature in order to create the theoretical foundation for conducting the research study and for testing the research hypothesis. The empirical research was carried out on the example of the enterprises that have the obligation to submit their data on the sources of the pollution of the environment media to the National Register of the Sources of Pollution, according to the provisions of the PRTR (Pollutant Release and Transfer Register) Protocol. The data collection was carried out by using the questionnaire distributed to the management of the enterprises. The data analysis was performed by applying various quantitative statistical methods and techniques, primarily by applying descriptive statistics and non-parametric tests.

The work is structured into five sections. After the introduction, the paper provides an overview of the literature creating the basis for the formulation of the research hypothesis. In the third section, the research methodology is explained. After that, in the fourth section, the results of the conducted empirical research are presented. Finally, in the fifth section, the conclusions are given, the contribution of the paper is highlighted, and the limitations and domains of future research studies are indicated.

LITERATURE REVIEW

The Conceptual Basis of the Environmental Management Systems

The application of the new legal approach, which is increasingly being spread worldwide, implying that for the created environmental damage a pollutant is responsible due to the fact that it performs risky activities with respect to the environment and, during regular operations, its activities represent a potential environmental hazard (Petrović, 2012, 108-111), has created the need for introducing standardized and documented environmental management systems (EMSs). Namely, good management practice in leading companies worldwide indicates that the

impacts companies have on the environment can be decreased if companies implement the EMSs. The organizations that implement the EMSs determine how their activities affect the environment, identify the type of the impact and sources for preventing the pollution of the environment and the degradation of natural resources (Rondinelli & Berry, 2000; Darnall, Henriques & Sadorsky, 2008).

The EMS represents the part of the overall management system which includes the organization structure, the planning activities, responsibilities, procedures, processes and means for the development, introduction, achievement, monitoring and maintaining of the policy of environmental protection (Coglianese & Nash, 2001). Starting from the aforesaid, it can be concluded that the EMS creates a good starting point, according to which companies can evaluate all of the aspects of their operations, and therefore are able to minimize the damages of one subsystem against another (Shrivastava, 1995). Due to the fact that the EMS has the goal to design or alter operations, processes and products in order to prevent (and not only to improve) the negative effects on the environment, many researchers characterize these approaches as proactive environmental strategies or practices (Hart & Ahuja, 1996; Russo & Fouts, 1997; Sharma & Vredenburg, 1998; Aragón-Correa & Sharma, 2003), where these approaches lead to the improvement of environmental performances (Khanna & Anton, 2002; King, Lenox & Terlaak, 2005). When adopting the EMS, companies to a great extent apply various types of environmental activities, since environmental management systems are created in various surroundings. Therefore, the EMS can, for example, be created on the basis of national standards (the British BS 7750), international standards (ISO 14000), as well as environmental policy guidelines (EVRO-EMAS).

In Great Britain in March 1992, the BS 7750 standard was enacted, and it was named the "Specification for Environmental Management Systems". The goal of this standard is to provide a possibility for each enterprise to amend its management system with a socially verified and publicly recognized system of environmental management, which starts from the clear formulation of the environmental strategy and the environmental policy, as well as the goals of the enterprise. In the preface to the standard, it was indicated that the BS 7750 has the general principles of the management system as well as the ISO 9000 standard, which represents the starting point for the upgrading of the BS 7750 standards.

Eco-management and Audit Scheme – EMAS – is the initiative of the European Union enacted in April 1995, regulated by the EC 1221/2009 statute (Testa, Rozzi, Daddi, Gusmerotti, Frey & Iraldo, 2014, 165), whose goal is to induce a continual improvement of environmental protection in public and private organizations (Rahbek, 2007). EMAS operates in the manner that minimizes the probability of the occurrence of an event with a potentially negative impact on the environment. In companies, a greater implementation of the EMS is conditioned by the fact that banks and insurance companies, together with potential investors, are more interested in cooperating with the companies which have already implemented EMAS. Unlike the BS 7750, EMAS does not apply to an enterprise as a whole, but rather to a certain location of the company. The introduction and implementation of EMAS are aimed at improving the ecological performances of companies. Having in mind the fact that, in companies, managers, as well as employees, should take care of the environment, the success of EMAS is conditioned by their motivation to participate in the environmental management process (Freimann & Walther, 2002, 100-102).

As the ecological goal can be achieved through a purposeful distribution of tasks among organizational levels, the environmental standards of the ISO 14000 series have been developed, which has enabled efficient environmental management at various organizational levels. The International Organization for Standardization – ISO – is in charge of the preparation of the standards. As in the case of the previously mentioned EMS (the BS 7750 and EMAS), the important postulate of the ISO standards is that they are voluntary. The series of the ISO 14000 standards covers the two key areas of the valuation of a system or an organization:

- the first area is the so-called organizational issues,
- the other is products, services or processes.

Within the ISO 14000 series of standards, the basic standard defining good practices in environmental management is the ISO 14001, which specifies the various demands that must be fulfilled in the establishment of a more efficient system of environmental management so as to reduce and minimize pollution and other environmental incidents.

The Environmental Management System According to the ISO 14001 Standard

In the past two decades, the process of integration and globalization at the international level has increased the importance of the introduction of the EMS. Ecological disasters have had the main influence on the creation of the awareness of the importance of preventive actions and measures and the preparation of the international standards of environmental management. With the publication of the ISO 14000 standards series, the international business community tried to develop the international standard for environmental management. The development of ISO 14000 standards series has enabled companies to manage the environment more efficiently and to also reduce the negative impacts of their operations on the environment (Poksinska, Dahlgaard & Eklund, 2003, 585). Nevertheless, as a request for the need to improve the environment (Bansal & Bogner, 2002), in 1996, the International Organization for Standardization published a series of the ISO 14000 standards, which consists of the several consultative documents related to the systems of environment protection management, the evaluation of ecological performances, ecological labeling, the estimation of the lifecycle and the aspects of environmental products. This series was lately revised in 2004 and 2015. Although the ISO 14000 does not represent the only way for efficiently conducting the environment protection management system, it does try to advise companies with respect to the development of a better environmental protection policy. The ISO 14001 is a part of this series and is the only standard especially designed for the purpose of satisfying the needs of the system of environment protection management (Nawrocka & Parker, 2009; Gomez & Rodriguez, 2011).

As the basic standard of the ISO 14000 series, the international standard ISO 14001 – Environmental Management Systems – represents an altered version of the BS 7750. The ISO 14001 is so designed to help companies to identify and control the impacts of their activities, products and services on the environment. Also, it helps interested parties to recognize a company's concern for the improvement of the environment.

The main requirement of the ISO 14001 standards is the permanent improvement of the relationship with the environment. The concept itself incorporates the Deming PDCA Cycle (Plan-Do-Check-Act Deming Cycle). This standard defines demands for the environmental management system that should enable an organization (a company) to develop and apply the policy and the goals, having in mind legislative demands, as well as the information on the significant aspects of the environment. The ISO 14001 provides directions for designing the system of environmental management, which enables companies to identify their own policy of environmental protection (Murat, 2009) and to also correct possible deficiencies in their operations. Therefore, the ISO 14001 should be incorporated into a company's strategy. Nevertheless, although the ISO 14001 is internationally recognized, many companies reluctantly adopt this standard, having in mind the fact that it is a voluntary standard and the benefits from the application of the same have not yet been sufficiently recognized by companies' managers. In order to stress the importance of this standard for companies' operations, there are a large number of studies carried out in the past two decades that have explored the methods of and benefits from the implementation of the ISO 14001 standards (Dyllick & Hamschmidt, 2000; Poksinska *et al*, 2003; Gomez & Rdriguez, 2011; Testa *et al*, 2014; Schylander & Martinuzzi, 2007).

The Motives for the Introduction of the ISO 14001 Standards

In order to understand the relationship between the ISO 14001 standards and the benefits from their implementation, it is important to overlook the

motives for adopting this standard. In the relevant literature in this field, there are various theoretical perspectives. On the one hand, a group of scientists relied on the aspects of the institutional theory in order to explain why companies adopted the ISO 14001 and other proactive ecological strategies (Bansal & Roth, 2000; Davidson & Worrell 2001; Bansal & Hunter, 2003; Bansal & Clelland, 2004). These authors suggest that companies are motivated to increase their inner efficiency and outside legitimacy, which can lead to competitive advantage. On the other hand, scientists rely on companies' opinions about resources in order to explain that complementary resources and capabilities lead to the adoption of proactive ecological strategies (Sharma & Vredenburg, 1998; Aragon-Correa & Sharma, 2003; Darnall & Edwards, 2006) and the improvements of business performances (Darnall *et al*, 2008). With the implementation of these strategies, authors suggest that companies have a higher probability to obtain competitive advantage. In a small number of cases, researchers combined both theoretical standpoints (Bansal, 2005) and came to the conclusions similar to those given in previous studies which individually take into consideration both these theories (Darnall *et al*, 2008).

Institutional theory starts from the fact that the companies operating in similar social normative frameworks, values and assumptions often perform in the same manner in order to achieve the social legitimacy needed for the long-term survival and competitiveness of the company (Suchman, 1995). Starting from this, researchers especially stress the importance of outside legitimization, with an accent on the fact that at the inter-organizational level institutional pressures are created from outside sources (the Government, the market and society), whereas at the organizational level, institutional pressures are derived from the culture, the mutual belief system, political processes and stakeholders (DiMaggio & Powell, 1983; Henriques & Sadorsky, 1999; Darnall *et al*, 2008). Therefore, institutional actors can impose forced, mimetic and normative pressures on managers.

The institutional theory starts from the assumption that external factors will lead to similar answers from all companies. Nevertheless, companies react to outside pressures in various ways, depending on their approach to resources and the complementary capabilities derived over time (Oliver, 1997). For example, organizations with fewer internal resources and possibilities may not be able to respond fast or efficiently to the various forms of institutional pressures, whereas the entities with a higher amount of resources and better abilities can do so.

Beside the classification of motives to institutional pressures and resources and capabilities, in their research study conducted in Sweden, B. Poksinska and associates (2003) identify internal (cost reduction, the improvement of the quality of and the attitude towards the environment, the motivation of employees, the advantages internal stakeholders have), regulatory (the avoidance of potential export barriers, the relationship with the community, the relationship with the authorities) and external market motives (a corporate image, market advantages, pressures from buyers, the imitation of competition). A research study conducted in Hong Kong is indicative of the fact that, as the main motives for the introduction of the ISO 14001 standards, the raising of awareness at the national and international levels focused on the improvement of ecological performances, as well as an increase in public and market pressures (Kwai-Sang & Kit-Fai, 1999), are stressed. In their research conducted in Switzerland, T. Dyllick and J. Hamschmidt (2000) indicate the improvement of the public image as the main motive for the introduction of the ISO 14001 standards. A similar conclusion was reached by E. Schylander and A. Martinuzzi (2007), who, in their study conducted in Austria, also indicated adjusting to the laws, the improvement of ecological performances, costs savings and the motivation of employees as the motives. D. Morrow and D. Rondinelli (2002) stress that German companies operating in the energy sector implement environment management systems in order to improve their coherence with the legislation, develop and improve their eco-documentation and improve their efficiency.

Starting from the above-mentioned research, the following hypothesis will be tested in this paper:

H1: The primary motives for companies to implement the ISO 14001 standards are responsibility towards the environment, the creation of the image of a socially responsible company and performances improvements.

Benefits From the Implementation of the ISO 14001 Standards

The theoretical and empirical research studies of the benefits from the implementation of the ISO 14001 standards have been carried out in the past two decades. In the majority of those empirical research studies, the impact of a formal and an informal EMS on the economy and ecological performances has been subjected to analysis. The conducted research studies provide very useful pieces of evidence and an indication for the implementation of the ISO 14001 standards, but do not provide a sufficient piece of evidence for the generalization of their findings, as is indicated in the mentioned studies in the next part of the paper. Namely, numerous empirical research studies in this field have demonstrated that numerous companies achieved significant benefits in their operations after the adoption and implementation of the ISO 14001 standards. The adoption and implementation of the ISO 14001 standards into companies' operations can be observed as an investment intended to improve the image of a company, which is a way to generate additional income.

According to the analysis of the results of numerous research studies, J. J. Tari and associates (2012, 304) conclude that, with the implementation of the ISO 14001 standards, companies gain numerous benefits, which can generally be summarized into the following three groups:

- the improvement of ecological performances,
- efficiency and
- profitability.

Also, they stress that, taking into consideration the fact that there are numerous research studies dedicated to researching the benefits from the implementation of the ISO 14001 standards, these benefits can be systematized in various manners.

O. Boirai and J. -M. Sala (1998) summarize the benefits from the ISO 14001 standards into three categories: the improvement of the management system, better control and socio-economic benefits. In their research study conducted in Sweden, B. Poskinska and associates (2003) stress the fact that by the implementation of the ISO 14001 standards, companies demonstrate their dedication to environmental questions, improve their relationship with stakeholders, and improve their internal procedures, as well as their competitive position. In his research, R. Hillary (2004) systematizes all benefits into internal and external. In addition, this author divides internal benefits into three groups: organizational and financial benefits and the benefits related to employees. On the other hand, external benefits are divided into economic, environmental and social. S. Link and E. Naveh (2006) systematize all benefits from the implementation of the ISO 14001 standards into two groups: environmental performances and business performances. As the main benefits from the implementation of the ISO 14001 standards, E. Schylander and A. Martinuzzi (2007) highlight a decrease in the impact on the environment, especially in the field of waste disposal, the improvement of a company's image, costs effectiveness (especially a decrease in the costs related to waste management) and a more efficient use of resources. D. L. Gadenne and associates (2009, 46) indicate the fact that by the implementation of the environmental management system into a business strategy and a more efficient management of environmental protection, companies attain numerous benefits related to a decrease in waste, a decrease in costs, an increase in customers' satisfaction, increased employees' dedication, the improvement of products and public relations. The most comprehensive systematization is that provided by I. Gavronski and associates (2008), who group them into four groups:

- The first group is an increase in productivity and it involves: a decrease in the usage of resources, a decrease in production costs and a better motivation of employees;

- The second are financial benefits, and they are related to the fact that companies can have an opportunity to use various funds, i.e. to obtain loans at lower interest rates;
- The third group is related to market benefits, and involves the creation of competitive advantage, the creation of positive effects towards the market and customers, as well as an opportunity to expand care for the environment to the entire value chain; and
- The fourth group of benefits refers to social benefits, such as an improved image of a company and a better cooperation with environmental protection companies.

By summarizing of the previously mentioned benefits presented in the survey overview, and starting from the subject matter and the goal of the research, the following hypothesis will be tested in this paper:

H2: By the implementation of the ISO 14001 standards, companies obtain numerous benefits, such as the improvement of ecological performances, efficiency and profitability.

The Support of Accounting to the Implementation of the ISO 14001 Standards

Beside the identification of motives and benefits, an attempt is also made in this paper for the purpose of indicating the role of accounting or the importance of accounting information in the implementation, as well as consideration of the motives for and benefits from the ISO 14001 standards. Namely, for the reason of the consideration of the environmental impacts of a company's operations, it is necessary for accounting to integrate the corporative environment and the business policy, thus providing guidelines on building a sustainable business. Therefore environmental accounting integrates the characteristics of the system of environmental management (Yakou & Dorweiler, 2004).

T. D. Wilmshurst and V. Frost (2001) state in their study that accounting can play a significant role in the successful implementation of the environmental management system by introducing traditional accounting functions in the process of environmental management. These skills include measuring, recording, monitoring and verifying financial data. Environmental management systems can incorporate the accounting mechanisms that perform the assessment of the environmental impact, the assessment of environmental performance, and the monitoring of the success of the implementation of environmental actions. Associated with other management systems, they can improve the quality of decision-making in an enterprise. This role intended for accountants does not mean that they should be "environmental experts", but it rather means that an accountant is an "expert" in construction, engineering or retail business, whereas on the other hand their role should not only be limited to financial data. Accountants should be trained in the skills necessary for the development and operation of an environmental management system (the ISO 14001 standard) related to the recording, reporting, disclosure and verification of a company's performance, including environmental performances (Janjić and Jovanović, 2015).

E. Vasile and M. Man (2012) point out that environmental accounting provides information to the management by identifying and quantifying certain measures, such as: obligations arising from the environmental impact of the company, the costs incurred as a result of compliance with the law, the savings in costs achieved as a result of the implementation of the ISO 14001 standards, the economic benefits of other initiatives that lead to increased efficiency and improvements in business quality. As a significant contribution, M. Yakou and V. Dorweiler (2004) indicate the connection of environmental cost accounting with the ISO 14000 series. In the companies that adopt the ISO 14000 standards, environmental cost accounting is a tool, part of the environmental protection process integrated with the business strategy and decision-making. In her paper, K. Škarić-Jovanović (2013) states that the proper accounting treatment of environmental costs is an important presumption of environmental management and the basis for the

introduction of the ISO 14001 standard. On the basis of the above-mentioned, it follows that accounting should contribute to information on investments in environmental protection, the manner of their systematization, and the responsibilities and effects of these investments. Therefore, it is designed to trace and monitor environmental and physical activities, hereby providing such information that is essential for the successful implementation of the ISO 14001 standards and the measuring of the benefits of its implementation.

Starting from the theoretical standpoints and the empirical research studies of the role of accounting in the implementation of the ISO 14001 standards, the following hypothesis will be tested in the paper:

H3: Accounting plays an important role in the implementation of the ISO 14001 standards.

THE METHODOLOGICAL APPROACH

The survey was carried out at the end of 2016 by interviewing the company management through a questionnaire, which was conceptualized on the concepts identified in similar research papers listed in the literature review. The questionnaire consists of 18 questions, and the answers related to the ISO 14001 standard and the role of accounting in its implementation are analyzed in this paper. Most questions in the questionnaire are the closed-ended –type of questions. In the questionnaires, a five-step Likert scale is also used, which indicates the degree of the agreement of the management of the company with the defined opinions. The respondents were able to answer by providing the answers between 1 – I totally disagree, and 5 – I completely agree. Prior to the implementation of the main research, the questionnaire was subjected to a pilot study aimed at determining the necessity of implementing changes before the commencement of the main research. After the pilot survey had been conducted, minor changes were made in the questionnaire, and they were mainly related to the formulation of the questions. All of the companies involved in the survey were contacted by telephone before being provided the questionnaire, this having been done in order for questionnaires to be sent to the addresses of the management of those companies.

The research hypotheses were tested on a selected sample of the companies that have an obligation to submit their data to the National Pollution Registry, in accordance with the provisions of the PRTR (Pollutant Release and Transfer Register) Protocol, regarding the sources of environmental media pollution (Službeni glasnik Republike Srbije, 2011). According to the data of the Environmental Protection Agency, 179 enterprises (or 250 plants) are obliged to submit data to the National Register of Pollutants. Out of the 179 companies that had received the questionnaires, 60 companies completed the questionnaire, which is a response rate of 33.52%, which is in line with the response rates in previous surveys (Christmann, 2000, Studer, Welford & Hills, 2006; Schylander & Martinuzzi, 2007; Darnall *et al*, 2008). Starting from the defined hypotheses, only the companies that have implemented the ISO 14001 standard are included in the analysis. The analysis of the questionnaire has found that the 33 companies that responded to the questionnaire have the ISO 14001 and the answers given by the management of these companies will be the subject matter of a further analysis, whereas the remaining 27 companies will be excluded from the analysis as they could not answer the questions which relate to the ISO 14001 standard because they do not have it.

In Table 1, the basic information on the certified organizations, as well as the respondents (managers), is provided.

As shown in Table 1, the majority account for the limited liability companies in the sample (60.6%), which is followed by the joint-stock companies (33.3%) and ultimately the fewest are the public enterprises (6.1%). Observed by size, the large enterprises are predominant (51.5%); they are followed by the medium enterprises (27.3%), whereas the least represented are the small enterprises (21.2%). If the sample is analyzed according to the characteristics of the respondents, it

Table 1 Characteristics of the sample

	Frequency	%
Legal form of the company		
public enterprise	2	6.1
shareholders company	11	33.3
limited liability	20	60.6
Size of the company		
Small	7	21.2
Medium	9	27.3
Large	17	51.5
Sex		
Male	12	36.4
Female	21	63.6
Position in the company		
CEO	5	15.2
Financial Director	12	36.3
Technical Director	3	9.1
Commercial Director, Chief Accountant, etc.	13	39.4
Education level		
Faculty	32	97
Secondary school	1	3
Years of service		
3-5	1	3.0
6-10	3	9.1
11-15	7	21.2
16-25	13	39.4
>25	9	27.3

Source: Authors

is possible to observe that the questionnaire was more responded to by female respondents (63.6%). Also, according to the age structure, the most numerous categories of the respondents are the persons under 45 years of age (54.5%). If we take into consideration the fact that the questionnaire was intended for the management of the companies, the structure of the sample according to the position indicates that the questionnaire was filled in by 15.2% of the CEOs, 36.3% by the financial directors, 9.1% by the technical directors and the remaining 39.4% by the commercial directors, the chief accountants, the QMS and EMS sector managers and the others. In the sample, the respondents with a faculty diploma (97%) are predominant, among whom 51.5% account for those who have graduated from the Faculty of Economics. If the years of service are observed, the persons with a working experience longer than 10 years (60.6%) are predominant in the questionnaire.

The questionnaire data were analyzed in the Statistical Package for Social Sciences (SPSS, Version 20.0). The measuring of the reliability and internal consistency of the variables was performed by using Cronbach's Alpha Coefficient. Descriptive statistics was used to measure the central tendency (the arithmetic mean, the median, and the modus) and the measurement of variability (the standard deviation). Also, a correlation analysis and non-parametric tests were used in the paper with the aim of obtaining a clearer presentation of the results and making the conclusions as precise as.

THE RESEARCH RESULTS

The value of Cronbach's Alpha Coefficient is calculated for each of the questions to which the respondents provided the answers on the Likert scale. The value of Cronbach's Alpha Coefficient for the reliability of the measuring scale is greater than 0.7; on the basis of the foregoing, it can be concluded that the questionnaire has a good internal consistence. The generally agreed lower limit for Cronbach's Alpha is 0.70, although it may fall up to 0.60 in exploratory research (Hair, Anderson, Tatham & Black, 1998; DeVellis, 2003). After the reliability check, the checking of the normality of the distribution of the used variables was checked. The normality is shown by a statistically insignificant (random) deviation from normality, i.e. by a Sig. value greater than 0.05. After having conducted the Shapiro-Wilk test, we established the fact that the assumption about a normal distribution was not confirmed.

Table 2 shows the frequency of the statement on the question related to the motives for the introduction and implementation of the ISO 14001 standards. The statements in the table are sorted according to the order of the frequency of the variables. The highest level of agreement was demonstrated by the respondents is that relating to the environmental responsibility statement (M = 4.85), which is in accordance with the expected results and the theoretical framework presented in the literature overview. The results of the study show that the respondents have shown the lowest degree of agreement with the stakeholders' pressure statement (M = 2.73). Also, in a more detailed analysis of the results, a conclusion could be drawn that a large number of the respondents (54.5%, i.e. 18 respondents) fully or partly agree with the statement that the motive for the introduction and implementation of the ISO 14001 standards is accounted for by the existence of a legal obligation, which is incorrect given the fact that it is the standard voluntarily applied by the companies. However, the value of the modus indicates that the largest number of the respondents circled the number 1 for this question on the offered Likert scale ranging from 1 to 5, so it can be concluded that the opinions are divided regarding that.

When elaborating the results of descriptive statistics, it should also be noted that the distribution is not normal, so the arithmetic mean is not the best measure of the average, for the reason of which fact is is necessary that we should obtain the values of the median and the modus. The median value in the statements is 4 or 5, whereas the most common marks given by the respondents when completing the questionnaire were 4 and 5, except for the legal obligation and the pressure from the stakeholders statements. By analyzing the results of descriptive statistics, the companies' primary motives for the introduction of the ISO 14001 standard can be said to be their environmental responsibility, building the image of a socially responsible company, a better reputation of the company and the improvement of performances. Starting from the abovesaid, it follows that Hypothesis 1 has been confirmed.

Table 3 accounts for the frequency of the statement on the benefits of the introduction and implementation of the ISO 14001 standard. The results presented in the table indicate that the respondents gave the highest

Table 2 The expression of the statements on the motives for the introduction and implementation of the ISO 14001 standard

Motives for the introduction and implementation of ISO 14001 standards	N	Min	Max	M	SD	Med.	Mod.
Responsibility for the environment	33	4	5	4.85	0,364	5	5
The creation of the image of a socially responsible company	33	4	5	4.67	0.479	5	5
A better reputation of the company	33	3	5	4.58	0.614	5	5
Performance improvements	33	2	5	4.39	0.747	5	5
Cost reduction	33	1	5	3.76	1.001	4	4
The motivation of employees	33	1	5	3.45	1.175	4	4
The legal obligation	33	1	5	3.15	1.734	4	1
Stakeholders' pressure	33	1	4	2.73	1.126	3	3

N - number of respondents, Min - minimum, Max - maximum, M - Mean, SD - standard deviation, Med. - median, Mod. - modus

Source: Authors

Table 3 The frequency of the benefits from the introduction and implementation of the ISO 14001 standard statement

The introduction and implementation of the ISO 14001 standard	N	Min	Max	AS	SD	Med.	Mod.
The improvement of the environmental performance of enterprises	33	1	5	4.52	0.939	5	5
The improvement of the competitive position	33	1	5	3.94	1.059	4	4
Increased business efficiency	33	2	5	3.76	0.792	4	4
Increasing profitability	33	1	5	3.39	0.864	4	4

N - number of respondents, Min - minimum, Max - maximum, M - Mean, SD - standard deviation, Med. - median, Mod. - Modus

Source: Authors

mark to the improvement of ecological performances statement (M = 4.52), i.e. the commonest score given to this statement by the respondents was 5 (Mod. = 5). Namely, 30 respondents (90.9%) fully or partially agree that the introduction and implementation of the ISO 14001 standards contributes to the improvement of ecological performances. The other statements listed in Table 3 have approximately the same significance in the respondents' opinions since the greatest number of the respondents graded these statements with a 4. Summarizing the results accounted for in Table 3, the implementation of the ISO 14001 standards can be said to create a lot of benefits for companies, such as improving environmental performances, the competitive position, efficiency and profitability. On the basis of the foregoing, it follows that Hypothesis 2 has been confirmed.

After the identification of the motives for and benefits from the implementation of the ISO 14001 standard, a correlation analysis (Table 4) was carried out in order to examine whether, and to which extent if so, there was a relationship between the aforementioned variables, i.e. quantitative coherence (Cohen, 1998, 79-81).

After the conducted correlation analysis (Table 4), it is concluded that there is a statistically significant quantitative coherence between the motive related to cost reduction, on the one hand, and ecological performance (rs = 0.523 – a strong positive correlation), increased efficiency (rs = 0.401 – a medium positive correlation), increased profitability (rs = 0.543 – a strong positive correlation) and the improvement of the competitive position (rs = 0.545 – a strong positive correlation), on the other. The abovesaid indicates that there is a link between the cost reduction motives and the benefits from improving ecological performance, an increase in efficiency, profitability and the improvement of the competitive position. Also, the results of data processing indicate that there is a positive correlation between the employees' motivation and increased efficiency (rs = 0.393 – a medium correlation), a profitability increase (rs = 0.599 – a high correlation) and the improvement of the competitive position (rs = 0.402 – a medium correlation). In addition to the abovementioned, the results of data processing point to the existence of a correlation between the motives for creating the image of a socially responsible company and improving the competitive position (rs = 0.391 – a medium correlation). On the basis of the results of the correlation analysis, it can be concluded that there is a link between the motive for the introduction and the benefits from the implementation of the ISO 14001 standards.

The third research hypothesis is that related to the role of accounting in the implementation of the ISO 14001 standards. Within this segment of the descriptive analysis, the role of accounting in the implementation of the ISO 14001 standard will also be highlighted (Table 5). Namely, the results of descriptive statistics indicate that 39.4% of the respondents fully or partially agree that accounting plays a significant role in the implementation of the ISO 14001 standard (M = 3.12), while 33.3% are not sure, and 27.3% of the respondents

Table 4 The correlation analysis of the motives for and benefits from the introduction and implementation of the ISO 14001 standard

Motivation for the introduction of ISO 14001 standards		Benefits from the implementation of the 14001 standard				
			The improvement of ecological performances	Increased efficiency	Increased profitability	The improved competitive position
Spirman's correlation coefficient of rank	A better reputation of the company	rs	0.060	0.001	0.034	0.395*
		Sig.	0.739	0.997	0.852	0.023
		N	33	33	33	33
	Stakeholders' pressure	rs	-0.095	-0.012	0.194	0.053
		Sig.	0.598	0.948	0.278	0.769
			33	33	33	33
	Costs reduction	rs	0.523**	0.401*	0.543**	0.545**
		Sig.	0.002	0.021	0.001	0.001
		N	33	33	33	33
	Performances improvement	rs	0.299	0.240	0.206	0.282
		Sig.	0.091	0.179	0.250	0.112
		N	33	33	33	33
	The motivation of employees	rs	0.283	0.393*	0.599**	0.402*
		Sig.	0.110	0.024	0.000	0.020
		N	33	33	33	33
	The legal obligation	rs	0.066	-0.274	0.143	0.158
		Sig.	0.716	0.123	0.427	0.378
		N	33	33	33	33
	Responsibility to the environment	rs	0.341	0.192	0.194	0.293
		Sig.	0.052	0.284	0.278	0.099
		N	33	33	33	33
	The creation of the image of a socially responsible company	rs	0.092	-0.004	-0.115	0.391*
		Sig.	0.611	0.983	0.526	0.024
			33	33	33	33

*Statistical relevance at the level of 0.05; ** Statistical relevance at the level of 0.01

Source: Authors

Table 5 The role of accounting in the implementation of the ISO 14001 standards

		Freq.	%	Min	Max	M	SD	Med	Mod
Accounting plays an important role in the implementation of ISO 14001 standards	I completely disagree	3	9.1						
	I partially disagree	6	18.2						
	I am not sure	11	33.3	1	5	3.12	1.11	3	3
	I partly agree	10	30.3						
	I fully agree	3	9.1						
	Total	33	100						

Freq. - frequency, Min - minimum, Max - maximum, M - Mean, SD - standard deviation, Med. - median, Mod. – Modus

Source: Authors

either totally or partially disagree with the statement that accounting plays a role in the implementation of the ISO 14001 standards. Based on the above, it can be concluded that the third hypothesis has only partially been confirmed.

Bearing in mind the fact that managers' opinions about the role of accounting in the implementation of the ISO 14001 standards are divided, the application of non-parametric tests was an attempt to identify whether there is a statistically significant difference between the groups in the sample (the subsamples). After the application of the Kruskal-Wallis test, it was found that there was no statistically significant difference in the managers' opinions about the role of accounting in implementing the ISO 14001 standards when the size of the company ($\chi^2(2, n = 33) = 2.73$, $p = 0.255$) and the position of the managers in the company ($\chi^2(3, n = 33) = 5.05$, $p = 0.168$) are observed; also, by using the Mann-Whitney U Test, a conclusion was drawn that there was no statistically significant difference in the managers' opinions about the role of accounting in the implementation of the ISO 14001 standards when the gender of the managers ($U = 119$, $z = -0.272$, $p = 0.786$) was taken into consideration. However, after using the Mann-Whitney U test, it was found that there was a statistically significant difference if the joint-stock companies were compared with the limited liability companies ($U = 49.500$, $z = -2.593$, $p = 0.01$, $r = 0.47$). Namely, the respondents from the joint-stock companies gave greater importance to accounting in the implementation of the ISO 14001 standards ($M = 3.82$, Med. = 4, Mod. = 4) than those from the limited liability companies ($M = 2.80$, Med. = 3, Mod. = 3). Such a result can be justified by the fact that joint-stock companies, covered by this research, are mostly with foreign capital, i.e. they come from the countries where socially responsible business is more developed and are more focused on exports, so that the pressures from stakeholders are stronger when it comes to environmental issues.

CONCLUSION

Market saturation and the increasing demands from the community related to the environmental protection impose on the companies an obligation to adapt their goals and strategies to the requirements of the environment which they operate in. Managers are increasingly required to manage their companies in a manner that will create benefits for society as a whole. Therefore, the successful management of a company in changed business conditions requires from the management to choose a new, original mode of operation, behavior and proactive thinking. Therefore, the enterprises that incorporate into their business proactive environmental strategies earlier are more likely to take on better strategic positions and better access to resources and opportunities than it is the case with the companies that implement reactive strategies. In the literature, the ISO 14001 standard is listed as a particularly useful tool for the implementation of a proactive environmental strategy.

The results of the research presented in this paper indicate that environmental responsibility, the creation of the image of a socially responsible company, a better reputation of the company and the improvements of performances are particularly the primary motives for the introduction and implementation of the ISO 14001 standards, whereas costs reduction and the motivation of employees are presented as the secondary motives in this regard. Also, based on the results obtained from the research study, it can be concluded that the introduction and implementation of the ISO 14001 standards, in the opinions of the respondents, has contributed to the improvement of ecological performances. In the respondents' opinions, the improvement of environmental performances, caused by the introduction and implementation of the ISO 14001 standards, has positively impacted the competitive position and an increase in the efficiency of operations. It is important to note that the stated benefits are highly correlated with the motive of costs reduction and employees' motivation.

As far as the role of accounting in the implementation of the ISO 14001 standards is concerned, the attitudes are divided: one-third of the respondents consider it to have a significant role, one-third of the respondents consider that it does not have an important role, and one-third are not certain regarding that issue. T. D. Wilmshurst and G. R. Frost (2001) have also come to a similar conclusion, namely that there is a

neutral attitude towards the accountant's role in the environmental management process. The obtained results can be justified by the fact that in the sample more than 50% are the medium and small enterprises that do not have a developed accounting function and often have only one person performing all accounting tasks. Also, in small-sized accounting joint-stock companies, above all those with foreign capital, the role of accounting in the implementation of the ISO 14001 standards is recognized and, taking into account the fact that their participation in the sample is less than 50%, the obtained results are expected to be such.

In addition to the abovementioned, it is necessary to point out the fact that the results of the empirical research study do not deviate from the results of similar research studies conducted in the world (Dyllick & Hamschmidt, 2000; Wilmshurst & Frost, 2001; Poksinska *et al*, 2003; Schylander & Martinuzzi, 2007; Gavronski *et al*, 2008; Gadenne *et al*, 2009) and that they confirm the two out of the three defined hypotheses. Namely, the third hypothesis is partially confirmed since the attitudes of the companies' management in the Republic of Serbia are divided when it comes to the importance of accounting in the implementation of the ISO 14001 standard.

Starting from the abovesaid, it can be concluded that the results of the research study have significant theoretical and practical implications. Namely, the results of the research indicate the importance of implementing the ISO 14001 standards, as well as the fact that company managers still do not fully recognize the role of accounting in this process. Bearing in mind the fact that there are a small number of research studies in this area in developing countries, this research study contributes to filling in the gaps in the literature, highlighting the motives for, benefits from and the importance of accounting in the environmental management process. By linking the empirical research results to the existing research results in the world, certain guidelines can be derived that can help managers to improve the process of environment protection management. Enterprises should think of investments in environmental protection as investments into the future, bearing in mind the importance of proactive environmental strategies for the operations of the company. In addition, companies should motivate employees to behave more responsibly towards the environment and be more rational in using resources. Also, the benefits from the implementation of the ISO 14001 standards should be highlighted, and they should be expressed both qualitatively and quantitatively. The study provides a significant contribution to the business policy of a company, emphasizing the fact that, in the periods of constant change, the success of an enterprise is largely conditioned by its social responsibility. The results also indicate that domestic enterprises have not yet fully recognized the role of accounting in environmental management systems, and that greater progress here should be made in the future, namely companies in developed market economies should be looked after.

The main limitation of this study relates to the size of the sample. Namely, the small sample limited the application of a more demanding statistical methodology. In order to have more general conclusions, all the companies that have implemented the ISO 14001 standard should be included and the number of variables should also be increased and more advanced statistical techniques applied. It would be useful to carry out a comparative analysis, which would enable a comparison of the expectations from the implementation of the ISO 14001 standards with the benefits that would be measured both by financial and non-financial indicators. The subjectivity of the respondents can also be stated as a constraint. Namely, having in mind the fact that this is a sensitive problem companies are being faced with, it is possible that the respondents gave socially desirable answers in order to create a better picture of the company in which they work. For future research studies, it would be good to separately interview CEOs, financial and environmental managers, and compare their responses. Also, more detailed results would be obtained if an interview were used in addition to the poll. Bearing in mind the aforementioned constraints, future research should include a time dimension in order to see the cost-effectiveness of and benefits from the implementation of the ISO 14001 standard over time.

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Received on 14th March 2018,
after revision,
accepted for publication on 23rd April 2018.

Published online on 26th April 2018.

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