

RESEARCH OF DETERMINANTS MOTIVING TO IMPLEMENT THE ENVIRONMENTAL MANAGEMENT SYSTEM

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Abstract: In the hereby paper, an evaluation of selected determinants that motivates organizations to implement the environmental management system compliant with the ISO 14001 standard has been made. The aim of the paper is to answer the questions which of determinants have influence on decision making to implement environmental managing. A research group is a population of 91 enterprises located in south-eastern Poland. In the researches, a distribution of organizations close to organization's population per a type of leading activity has been procured. On the basis of the obtained results it has been stated that the determinants deciding of decision making to implement the system are: endeavoring to productivity improvement and necessity of organization's managing improvement. Most often benefits according to the respondents' opinion, expected after implementation of the system, are improvement of the area of managing and also implementation of standardized – permanent betterment.

Key words: environmental management system, ISO 14001, implementing inspirations

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Introduction

In the subject literature (Oliveira-Neves et al., 2016) a few determinants motivating organizations to implement the environment management system can be distinguished. One of them is a situation where a client demands possessing of the environmental management system what is connected with a society stress in range of natural resources protection (Gomez and Rodriguez 2011, Moraru et al., 2017). Sometimes, on a basis of signals flowing from environment, organization considers that owning of a certified environmental system will be an additional asset for the organization (Campos, 2012). The highest management can treat a certification of an environmental system as some kind of a “market innovation” and to head only by increasing of company prestige emerging from the certificate possessing. However, if the system will be implemented correctly, benefits of its functioning can immeasurably change an approach of all the crew to managing way (Zhu et al., 2012). Another reason of the environmental management system implementing can be a necessity to equal competitors in a branch (Castillo-Rojas et al., 2012). Next implementing determinant is a will to avoid penalties due to not fulfilling of legal

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requirements of environment protection or a result of emerging of undesirable or a tragic environmental incident in organization (Pacana et al., 2017). Besides of mentioned determinants that are not always positive, it is worth to pay attention to many managers that are aware of responsibility for a natural environment and who want to improve the organization by the environmental management system implementation. Independently from a reasons determining implementation of environmental management systems, the implemented system requires a full involvement of all the employees of organization not only to maintain it but also to improve it, as it is in case of the ISO 9001 system (Ulewicz, 2016). The basis of human being, including societies where employees live, is the natural environment what seems to be nowadays, in west civilization countries, an irreplaceable value. Assurance of an efficient quality of environment is the aim of the environmental management system based on the ISO 14001 standard (Pacana, 2017). Increased competitiveness enforced organizations to constant actualization of theirs strategies to distinguish from competitors, as well in technical point as in managing point. These activities are to ensure still competitive position on a market in aspect of screenplays of uncertainty and competitiveness (Radonjic and Tominc, 2006). The goal of the presented results is to indicate determinants that stimulates and suppress implementation of the ISO 14001.

Main Research Assumptions

An analysis of an efficiency of implemented environmental management systems often meets a lot of problems (Oliveira et al., 2010). Due to this fact there has been taken some assumptions for examined population. The goal of realized researches was to determine main determinants that have influence on an efficiency of the environment management system implementation accordant with the ISO 14001. The raised goals enforced usage of a complex approach during realizing of the research process.

The following assumptions had been taken while researches accede:

- organizations located mainly in south-eastern Poland will be granted by researches,
- researches will concern to organizations of differ kind of activities and differ number of employees,
- form of organization's owning will be random,
- researches will be directed to organizations which already have the ISO 14001 (PN-EN ISO 14001:2005) certificate,
- to the questionnaire fulfilment, representatives of the highest managements of the EMS (plenipotentiary of EMS) or experienced internal auditors, had been asked, as the most competent persons.

The developed essential questionnaire had been sent to expertly selected organizations. 91 questionnaires were received. In a certain approximation it can be assumed, this number is, truth not much, but a representative sample of population

of organizations which have the environment management system. Assumption of this thesis is possible most of all because presumably questionnaires were fulfilled by plenipotentiaries, who know and understand a philosophy of the systemic environment management and they involve in a proper way to its improvement. With a certain probability it can be assumed the organizations which have a negative attitude to the owning system, were not eager to fulfil the questionnaire. This state is profitable from a point of view of the questionnaire's reliability. Information concerned to implementing and improving, descendent from competent persons, are not over casted by utterly negative and tendentious opinions of organizations, which were not able to implement such a system skillfully. Due to this fact, drew conclusions based on the research and flowing from them recommendations, will be more useful for organizations, which want efficiently and effectively to implement the environmental management system, accordant to the ISO 14001.

Determinants of the EMS Implementation

Making of decision to start to implement the environmental management system based on the ISO 14001 should be preceded by analysis of benefits and costs. Operational steering in range of the ISO 14001 can bring particular financial benefits as incomes from recyclable materials salvage, managing of wastes and recycling, savings connected with lower expenditure of raw materials, media and materials and also from avoiding of penalties caused by exceeding of emission of substances and gases to the environment and decreasing of environmental taxes and decreasing of insurance costs due to increasing level of environmental safety (Nowicka-Skowron et al., 2015). While considering benefits for an enterprise emerging from applying of the ISO 14001 standard, we cannot forget about intermediate benefits. Though its financial evaluating is difficult they are often a very important cause of implementation of the environmental management system in a company. Acquiring of the certificate of compliant with the ISO 14001 significantly improves a picture of an enterprise in eyes of clients and potential investors, showing sensitivity and care of company about the natural environment. Implementation of the system makes also easier communication inside an organization (Vladutescu et al., 2016). It happens that acquiring of the certified management system according to the ISO 14001 is being included in supplier's specification during procedure of tender. In many supplying companies connected with foreign corporations implementation of the ISO 14001 is a condition of further cooperation. Size of costs connected with the system implementation depends from many determinants. Among others form an actual level of organization's managing. In organizations well systemic managed in area of the environment these costs can be, in extreme case, limited only to costs connected with certification. However in most cases the costs are increasing due to employing of external consultants and accommodation of previous way of organization's managing to requirements of the standard (material costs, trainings of employees

including internal audits, costs emerging from prescriptions after standpoint environmental audits). Most often, however, costs of implementation and certification the EMS are lower in well-organized enterprises. In turn more visible are benefits of implementation in these enterprises where many comments can be done in managing area. Due to endured costs, building of the system, so the costs should be consider as an investment for future. Because of many factors differing organizations, it is sensible to analyse and to set out determinants inspiring to implementation of the environmental management systems and determinants that represent barriers of decision making of implementation. Separate questions are an issue of costs which analysing is constricted because of aversion of organization to unveiling information with financial character.

During researches an attempt to determine premises had been taken, which organizations implementing the environmental management system, were guided by. Plenipotentiaries had been asked about motives (premises) if system's implementation. Answers are presented in Table 1.

Table 1. Causes (motives) of decision making to implement the EMS

| Causes (motives) of decision making to implement the EMS: | Percentage share |
|---|------------------|
| will to improve a productiveness | 20.5 |
| will to use as an element to compete with competitors | 7.8 |
| demand from clients/contractors | 16.3 |
| will to increase a quality of products and services | 14.7 |
| will to improve an organizational system and company's management | 17.6 |
| marketing goal, company's prestige improvement | 15.6 |
| because it is a demand, requirement of current market | 5.5 |
| encouraging by a professional literature | 1.0 |
| recommendation from a company, which already implemented it | 1.0 |
| others | 0.0 |

As a main reason of the system implementation, respondents determined a “will to improve productiveness”. Application of the ISO 14001 standard requirements is arduous because of time-consuming and costs connected with this, however due to these requirements an entrepreneur obtains quantitative and qualitative data relative to raw materials consumption (e.g. fuel, water) and media (e.g. electricity), levels of gas pollution emitting to the environment, solid wastes and sewage. The entrepreneur knows also on which aspects he should pay more attention, where it was not significant before, or conversely – which aspects will become less important due to changes implemented in production process or to company functioning. Management of the organization must be aware the productivity growth won't occur by itself in the day of the certification obtaining but it demands a process of constant monitoring and perfecting according to the PDCA (Jagusiak-Kocik, 2017). Increase of productivity is a result of well implemented system, procedures and applying of good practice by employees. Following indicated determinant was “a will to improve an organizational system and organization's

managing” and “requirements of clients/contractors”. It is very exemplary that managers understand a fact of necessity to improvement of compatibility of managing with the legal requirements and they understand necessity of constant improvement of organization's managing, also in the area of the environmental managing. It happens that possessing of the certified management system according to the ISO 14001 is being considering in supplier's specification during tender procedure. In many delivering companies connected with foreign corporations implementation of the ISO 14001 standard is a condition of further cooperation. It is exemplary that managing personnel understand a necessity to keep up to date changes in a law and considering it in activity of own organization.

Analysis of Expected Benefits of the EMS Implementation

Each manager when is deciding to implement the system, without looking on premises disposing him to this, expect benefits as external as well as internal in the organization. Collective collation of answers is showed in Table 2, 3 and 4 as well as on the Figure 1.

Table 2. Collation of answers concern to expect by organizations internal benefits from the EMS implementation

| What benefits were expected from the EMS implementation | Percentage share |
|---|------------------|
| management improvement | 13.8 |
| arrangement of organizational structure | 5.1 |
| reduction of internal costs of quality | 3.8 |
| improvement of information's flow | 4.1 |
| allowing for constant improvement | 14.4 |
| effectiveness and productiveness increase | 1.1 |
| decrease of mistakes and complaints | 2.2 |
| assurance for on-time and constant deliveries | 10.0 |
| simplify of procedures of new employees introduction | 15.2 |
| reduction of audits from another participant | 7.6 |
| improvement of a quality and a safeness of work | 4.1 |
| change an approach to a quality | 2.2 |
| quick identification and resolving of problems | 6.5 |
| improvement of internal communication in company | 4.6 |
| improvement of formulating of actualizations approving and of documents archiving | 0.5 |
| improvement of efficiency of organization's activity | 2.2 |
| arrangement of procedures and techniques of work of organization | 2.4 |
| arrangement of an organizational structure | 10.0 |
| others | 0.0 |

In result of conducted researches a set of answers had been achieved that affect expecting benefits of the EMS implementation, without explicit prevalence of any answer. Only few answers were pinpointed by more than 10% of respondents. It concerns as external as well as internal expected benefits.

Table 3. Collation of answers concerning to expected external benefits of the EMS implementation in organization

| What benefits were expected from the EMS implementation: build a client's trust | Percentage share |
|--|-------------------------|
| build a client's trust | 14.5 |
| make contact with clients easier | 7.9 |
| decrease of complaints number and increase of company's credence | 4.7 |
| sales increase with lower own costs | 4.5 |
| achieve more confident position on the market due to a better company image | 12.9 |
| improvement of cooperation with suppliers | 5.8 |
| competitiveness increase | 2.1 |
| achieving of international appreciation | 2.6 |
| reduction of audits number from other participant side (from clients) | 2.6 |
| better access to the international market | 5.3 |
| increase a participation in the market | 1.8 |
| increase of number of a won tenders | 0.5 |
| increase of a client's number | 5.5 |
| sales increase | 10.0 |
| better access to the foreign market | 4.5 |
| export's increase | 5.8 |
| achieving of competitive prevalence | 3.2 |
| increase of credence and trust in clients opinion | 2.9 |
| change of company image | 0.8 |
| prestige's improvement | 1.3 |
| possibility to join to higher number of tenders for supplying and orders | 0.0 |
| the certificate was to be a valuable tool for a marketing strategy | 0.8 |
| others | 0.0 |

None of respondents did not defined factors in category "others". In case of internal benefits, the most of respondents have spotlighted on simplifying of procedures of new employees introduction, on allowing for constant improvement and management's improvement. In case of the question about external benefits, the most often expected was to build a trust from more and more environmentally aware clients.

Table 4. Collation of answers concerning to feeling if the system brought expected internal and external benefits in examined organizations

| Did the system bring expected benefits | Percentage share | |
|---|-------------------------|----------|
| | internal | external |
| Decidedly yes | 38.5 | 33.3 |
| Rather yes | 56.0 | 56.7 |
| Rather not | 2.2 | 4.4 |
| Hard to say | 3.3 | 5.6 |

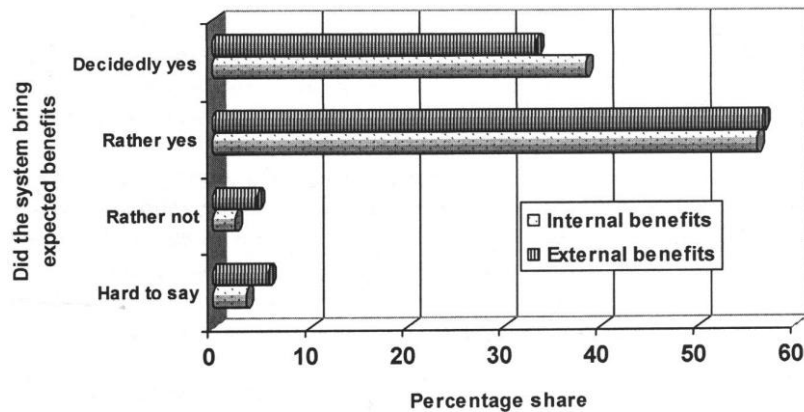


Figure 1. Visualization of answers concerning to feeling if the system brought expected benefits in examined organizations

A little bit less often, but also often it was expected to notice achievement of more stable position on the market due to a better company's image. A diversity of expectations, order to consider different circumstances for which it will be advisable to implement the EMS. It's consequence will be a choose of implementation's variant so implementation as a preparation to certification and as a tool to support a management. In context of expectations interesting are answers for the question fifteenth of the questionnaire which concern to feeling if the system brought expected benefits. Massive majority of answers (94.5% and 90%) confirms that expected internal and external benefits can be noticed. Within these answers however most of them are defensive what can be seen in answer "rather yes".

Analysis of Barriers Connected with the EMS Implementation

Analysis of difficulties connected with the EMS implementation was conducted basing on gained answers to question concerning to observed barriers occurring in organizations connected with the EMS implementation. The results are presented in the Table 5.

Among answers for the question, first one is an *“employee’s fear of bureaucratization”* and *“employees averseness from changes introduction”*. On next positions have placed answers concerning to employees encumbrance and employees averseness to introduction of changes. It is necessary to draw employees attention to a fact, that environmental management system do not add a lot of work to each employee if it is implemented skillfully basing on practices until now. An attention to this fact should be draw at the stage of the EMS implementing and meetings with employees.

Table 5. Collation of answers concerning to observed difficulties connected with the EMS implementation

| The biggest, observed difficulties connected with the EMS implementation | Percentage share |
|--|------------------|
| employees encumbrance | 12.1 |
| necessity to rearrangement of organization | 7.4 |
| insufficient number of trainings and its bad quality | 4.8 |
| lack of time | 7.0 |
| too short implementation's time | 3.3 |
| lack of adequately qualified staff | 2.9 |
| difficulties with documentation's formulation | 8.5 |
| complicated implementation's procedure | 2.2 |
| difficulties with language understanding and standard requirements understanding | 7.7 |
| too small management's engagement | 2.2 |
| implementation and certification costs | 6.6 |
| too small employees engagement | 5.1 |
| employees fear of bureaucratization | 18.4 |
| employees averseness from changes introduction | 11.8 |
| others | 0.0 |

Summary

While analysing of the EMS condition in Poland it is important to notice that numerical data concerned to the ISO 14001 system in range of the country, concerns only to certified systems of environmental management. There can be much more really implemented but not certified systems. Although the popularity of ISO 14001-based systems is still less than quality management systems, the question is what determinant motivating so many entrepreneurs to invest in the implementation, maintenance and potential certification of the ISO 14001 environmental management system. Conducted researches clearly shows that the most important determinants indicated by the respondents are their willingness to improve their productivity (20.5%), organizational and management systems improvement (17.6%) and improvement of the company's image (15.6%). The most frequently expected benefits of the ISO 14001 implementation are the simplification of new employee's introduction procedures (15.2%), continuous improvement of the organization (14.4%), and improvement of managing (13.8%). The research shows that respondents more clearly identify internal expectations than external ones. Most often from the expected benefits (14.5%) respondents were indicating a building of customer trust. To the most significant determinants-barriers, respondents included the high degree of system's formalization (18.4% employees' apprehension of bureaucratization) and additional workload (12.1%). The determinant, which was not included in the research due to the diversity of the sectors of analyzed enterprises, is the availability on the market of so-called pure production technologies. Implementing of the environmental management system

accordant with the ISO 14001 can bring many benefits, both short-term and long-term benefits. Investment expenditures incurred on the ISO 14001 may be refunded if the system is skillfully implemented, properly maintained and continuously improving. The growing number of companies certified on an agreement with the ISO 14001 is the best evidence of usefulness of the environmental management system and of benefits that an entrepreneur can achieve with its application.

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BADANIA DETERMINANTÓW MOTYWUJĄCYCH DO WDROŻENIA SYSTEMU ZARZĄDZANIA ŚRODOWISKOWEGO

Streszczenie: W artykule dokonano oceny wybranych determinantów motywujących organizację do wdrażania systemów zarządzania środowiskowego zgodnych z normą ISO 14001. Artykuł ma celu udzielenie odpowiedzi, które z determinant mają wpływ na podjęcie decyzji o wdrożeniu zarządzania środowiskowego. Grupę badawczą stanowi populacja 91 przedsiębiorstw z Polski południowo – wschodniej. W badaniach uzyskano rozkład organizacji zbliżony do populacji organizacji wg rodzaju prowadzonej działalności. W oparciu o uzyskane wyniki stwierdzono, że determinantami decydującymi o podjęciu decyzji o wdrożeniu systemu jest dążenie do poprawy produktywności oraz konieczność poprawy zarządzania organizacją. Spodziewane korzyści z wdrożenia systemu to najczęściej w opinii respondentów poprawa w obszarze zarządzania, a także wprowadzenie standaryzowanego – permanentnego doskonalenia.

Słowa kluczowe: system zarządzania środowiskowego, ISO 14001, inspiracje wdrożeniowe

实施环境管理体系的决定因素研究

摘要:在这篇文章中,对选定的决定因素进行评估,激励组织实施符合ISO 14001标准的环境管理体系。本文的目的是回答决定因素对实施环境管理决策有哪些影响的问题。一个研究小组是位于波兰东南部的91家企业。在研究中,已经获得了按照一类主导活动接近组织人口的组织分布。在得出的结果的基础上,已经表明决定决策者实施该系统的决定因素是:努力提高生产力和组织管理改进的必要性。根据被调查者的意见,经常会受益,预计系统实施后,管理领域的改善以及标准化-永久性改善的实施。

关键词:环境管理体系ISO14001, 实施启示