
Motivational Impact of Environmental Management on the Environmental Awareness in a Workplace

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Abstract:

Purpose: The aim of this article is to determine the level of motivational impact of environmental management (EM) on the environmental awareness of employees.

Design/Methodology/Approach: In one of the largest companies in the chemical sector in Poland, employing over 1,500 employees, survey on a sample of N = 306 respondents was carried out. An online questionnaire was used in the study.

Findings: There are significant correlations between the motivational impact of environmental management and the expectations and needs of subordinates in the context of environmental protection, and between the motivational impact of environmental management and environmental awareness.

Practical Implications: Motivational impact of environmental management is not characterized by the expected dynamics. It is recommended to improve the incentive system through its fuller integration with the activities and initiatives of employees to maintain the natural environment, including by rewarding all pro-environmental initiatives proposed by employees.

Originality/value: No research has been undertaken so far on the motivational impact of environmental management on the environmental awareness of employees in the chemical sector.

Keywords: Environmental management system, ISO 14001, motivation, environmental awareness of employees.

JEL classification: L29, M12, M19, Q59.

Paper Type: Research study.

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1. Introduction

The professional environment, which constitutes the context of this study, is not without significance for shaping attitudes conducive to the natural environment. The professional environment should instill in its employees a tendency to pro-environmental behavior using appropriate motivation tools (Aunger and Curtis, 2013). The range of such tools is very wide, from the so-called "soft" tools, such as pro-environmental attitudes / examples on the part of management staff, to "hard" tools, such as pro-environmental internal regulations (e.g., procedures, workplace instructions), as well as infrastructure equipped with mechanisms preventing emergencies or emissions of harmful substances to the environment. Knowledge of the principles contained in the tools, as well as the ability to use them in the case of infrastructure, is a factor of high environmental awareness of employees in working conditions.

The environmental management system is a tool that helps the organization to cover in an orderly manner the issues related to the impact on the environment. An environmental management system can be understood as part of an organization's overall management system, including the organizational structure, planning, accountability, policies, procedures, processes, and measures needed to develop, implement, execute, review, and maintain an environmental policy. Environmental management is therefore one of the management techniques, a set of good practices that enable the organization to minimize the burden on the natural environment (ISO 14000 Handbook, 2004).

Environmental management systems are commonly described in the literature on the subject. The literature is contained in hundreds of available records in scientific databases. A large part of them concerns the praxeological aspects of environmental systems, and thus the measurement of their effectiveness and efficiency. The remaining ones relate to the issues of legal and other requirements, and some of them concern technical solutions used in securing and improving processes to counteract the negative impact on the environment.

Considering the subject of this article, the authors focused their attention on the "soft" aspects, or more precisely on motivating, but in a different approach than just as a classic management function (Stoner *et al.*, 1998). To what extent the environmental management system and the resulting normative requirements motivate employees to build environmental awareness is an interesting issue.

2. Motivating Tools in a Workplace

Knowledge of effective incentives aimed at motivating in modern human resource management is of particular importance, because thanks to them a manager can establish positive relations with their subordinates, encourage them to act productively and influence their awareness and behavior.

In the literature, you can find many definitions and terms relating to the concept of motivation. For the purposes of this study, the authors chose two definitions (approaches) which, in their opinion, most accurately relate to the discussed issues. One of them emphasizes that motivating is a process that determines specific intentional behavior, which is conditioned by the perception of the assumed effects as useful and feasible (Berny *et al.*, 2012). Another one, similar in scope to the one previously indicated, emphasizes that motivating to work is a multidimensional process of influencing the behavior of employed subordinates, leading to the achievement of a specific type of attitudes and intensification of the results achieved by them (Kawka and Listwan, 2010).

According to the above-mentioned definitions, motivating is the process of reaching the inner views, attitudes, and beliefs of people to persuade them to a certain type of behavior.

To mobilize subordinates to the expected course of action, organizations build motivational systems constituting sets of various tools, ways, and methods of influence (Michalik, 2009). The main division of the tools is, coercive measures, incentives, and persuasion (Deluga and Wallis, 2013). Each of the tools affects the awareness of employees, their attitudes and behavior, but each of them does it in a different way, namely:

- coercive measures use force, subordination of one of the subjects to the other (the effect of which is to achieve complete submission to the motivating intention). Such types of actions primarily refer to negative emotions and experiences, such as fear and punishment. Such motivational stimuli are presented in a specific and decisive way, quite often systematized, and regulated. Examples include various types of intra-organizational regulations, e.g., procedures, instructions, ordinances, standards;
- incentives mainly work in the long term. As the name suggests, they act by attracting people to work, to broaden knowledge, e.g., in the field of environmental protection activities, and finally to present certain attitudes, e.g., pro-environmental through an appropriately developed system of rewards (of a different nature);
- means of persuasion refer directly to the beliefs and emotions of an employee to persuade them to adopt certain beliefs and confirm that they are right.

Considering the above-mentioned tools for motivating employees, persuasion to the greatest extent shapes internal motivation to manifest specific attitudes, behaviors, including pro-environmental behavior. Therefore, it seems that effective persuasion on the part of management staff will be of fundamental importance in building pro-environmental awareness and, going further, manifesting attitudes and behaviors conducive to the natural environment, which will become a habit in the long term.

While normative regulations concerning the environmental management system initially constitute a coercive measure, they take the form of incentive measures in a long-term perspective, when their compliance with rewards goes hand in hand. Normative content can also take a form of persuasion when the needs and expectations of employees in the field of environmental protection are considered, satisfied / met. Then employees will begin to determine / identify themselves with the environmental management system, and environmentally conscious employees, when making products, will be guided not only by their quality but also by environmental aspects.

Meeting the guidelines and requirements of the environmental standard results in comfortable work because their full implementation and reliable application prevent the occurrence of non-compliance. This alone is a factor influencing motivation by reducing the stress caused by the potential consequences for the organization in the event of failure to meet the requirements set out in environmental regulations. The system, on the other hand, is a supplement, a supporting and organizing tool, ordering, and a common space for all environmental activities (PN-EN ISO 14001, 2015).

Awareness is acquired through the knowledge and social predispositions of the employee. Acquiring knowledge and skills, as indicated by the requirements and normative guidelines, can be a motivating factor. Keeping records for compliance with the requirements of environmental standards (not only ISO standards, but above all legal requirements regulating environmental protection law) is codified knowledge in an organization, and thus another role of the system in the functioning of the organization is revealed (Goranczewski, 2008). This is the integrator role of multidirectional motivational influence. In this case, acquiring knowledge and improving skills, which in themselves have a motivational value for employees developing competences with building environmental consciousness.

Considering the subject of the article, we can find references to motivation in virtually every part of the ISO 14001 standard. The most important requirements in this respect relate to the top management, obliged to demonstrate commitment to the environment with their actual and not only declarative actions.

Actions that, in the context of motivation, will cascade into the appropriate attitudes of employees, ultimately translating into the effective implementation of environmental programs and tasks. Consequently, it is necessary to ensure adequate implementation means, i.e., infrastructure, competences, and other necessary resources. In relation to the above considerations, one can risk a hypothesis (H1):

Hypothesis 1: *It is assumed that there are significant interdependencies between the motivational impact of the environmental management system and the expectations and needs of employees in this area.*

3. Environmental Consciousness and the Organization's Incentive System in the Field of Environmental Management

The term "environmental consciousness" has an ambiguous meaning and many authors have been interested in this issue for a long time (Burger, 1986; Kurpiewski, 1992; Łastowski and Rafiński, 1992; Poskrobko, 1995; Gliński, 1996; Domka, 1998; Sander, 1998; Sander, 1999; Papuziński, 2006). Scientific literature indicates a narrow and broad approach to environmental consciousness or presents views dominated by the subject and methodology of research in individual scientific disciplines. Strictly speaking, environmental consciousness is knowledge, views, and ideas about the environment.

However, in a broad sense - it is "the entirety of recognized ideas, values, and opinions about the environment as a place of human (society) life and development" (Domka, 1998). The second approach to environmental consciousness, broad sense, which is the result of noticing and appreciating the importance of the relationship between the economic activity of society and the process of devastation and degradation of nature, should be considered up to date. In a broad sense, environmental consciousness is a form of social awareness that manifests itself in the thinking and experiences of specific people and in socially accepted standards of understanding, experiencing, and evaluating nature (Hull, 1984).

According to Papuziński (2006), the motivation to act pro-environmentally is the primary and basic form of environmental consciousness. This cannot be forgotten when defining environmental consciousness in a narrow sense. As rightly emphasized by Wodz and Wodz (2001) "the whole sphere of motivation for pro-environmental behavior belongs to environmental consciousness". Motivation for pro-environmental behavior can be internal and external, informal, and formal. Due to the wide range of thematic indicated types of motivation, the authors will focus on external motivation of formal nature in this study.

However, it should be remembered that there are many activities that the management staff can promote in the workplace to develop environmental consciousness, shaping internal motivation, informal in nature, and encouraging behavior for environmental protection, e.g., reducing the use of plastics to a minimum in the workplace in favor of biodegradable or bio-additive materials, as well as those derived from recycling and / or products of the circular economy. (Szymczak, 2019).

The above examples / informal activities contribute to the increase of environmental consciousness of employees. If they are repeated, they quickly become a habit because subordinates become convinced of them and identify with them. At the same time, they favor the adoption of formal, normative regulations in the field of environmental protection.

As in any standardized system, also in environmental management, there is a construct enabling the implementation and maintenance of employees' awareness, in this case environmental consciousness. This construct includes environmental policy, environmental goals and the resulting programs and tasks. They are used to meet the normative requirements which indicate that employees should be aware of the above-mentioned documents and, above all, the environmental aspects that interact with the environment. Especially those that occur at individual workstations. Environmental consciousness also includes knowledge of the potential environmental consequences in the event of non-compliance (PN-EN ISO 14001, 2015).

Therefore, each employee should know what their role is in implementing the policy and the resulting goals, as well as to what extent their work affects the compliance of the organization with environmental requirements (Puciato and Goranczewski, 2011). Consciousness is also built up by requirements such as:

- knowledge of the context of the organization enabling specifying those environmental aspects that are the most important from the perspective of environmental impact and stakeholder expectations,
- appropriate leadership translating into involvement in the organization, not only in environmental matters,
- support from the organization (organizational, technical, financial) in all pro-environmental activities submitted by employees or external entities.

The above considerations result in another hypothesis (H2):

Hypothesis 2: *It is presumed that there are significant interdependencies between the motivational impact of the environmental management system and environmental consciousness.*

4. Research Methodology

The study results described in this paper are part of a wider research project conducted in April - May 2020 in one of the largest companies in the chemical sector, employing over 1,500 people. Due to the wide thematic scope of the studies, it was necessary for the group of authors to access the results of internal audits, as well as the audit documentation of the body certifying not only environmental management systems, but also access to internal and organizational documentation related to the system documentation, including confidential documentation. It was therefore concluded that such broad access justifies the need for not disclosing the entity's name. Especially in the context of the high competitiveness of the industry in which the entity operates, the oversupply of products on the market, caused by the expansion of large foreign manufacturers. At the conceptualization stage, it was assumed that the studies would be carried out using the principle of triangulation of the methods, hence the studies used:

- Literature review in such databases as: Academic Search Ultimate, Education Resources Information Center, Newspaper Source and Google Scholar using generally accepted procedures (Czakov, 2013; Easterby-Smith *et al.*, 2015).
- Review of internal documentation in the form of results of internal and external audits confronted with the results of questionnaire surveys.
- A survey conducted on a sample of N = 306 respondents from a chemical company. The selection of the sample was quota. The obtained sample constituted 20.6% of the total number of employees. People with secondary education accounted for 48%, while people with higher education accounted for 38.9%. In the study sample, two age groups can be specified, from 36 to 49 years (40.9%) and over 50 (36.9%). Similarly, in the case of work experience over 25 years of work (37.6%) and in the range of 11 to 24 years, 56.5%. The study included the χ^2 independence test and Pearson's contingency coefficient C. The survey questionnaire used a disjunctive and conjunctive cafeteria, as well as 40 substantive questions concerning issues covering a broader scope of research than described in this paper.
- Self-observation - as a form of participant observation (Easterby-Smith *et al.*, 2015; Goranczewski, 2018).

5. Results and Discussion

To check the motivational impact of the environmental management system in the enterprise being the research area for the needs and expectations of employees in the field of environmental protection, the respondents were asked, inter alia, about their needs and expectations regarding this system and whether these needs and expectations are considered by the enterprise at the system maintenance stage. Table 1 presents the responses of the respondents from all the above-mentioned questions, which showed significant correlations (Table 1).

Table 1. *The organization's incentive system in the field of environmental management according to ISO 14001 and the expectations and needs of subordinates in the context of environmental protection.*

Needs and expectations	Are your environmental needs and expectations taken into account in the system maintenance phase?			
	Yes	Rather yes	I do not know	Rather not
Thanks to this system, I want my organization to contribute to reducing the negative impact on the natural environment				
0	1,794118	37,6765	16,54575	4,98366
1	7,205882	151,3235	66,45425	20,01634
Total	9,000000	189,0000	83,00000	25,00000
I want the implemented system to contribute to the preservation of the	Yes	Rather yes	I do not know	Rather not

natural environment				
0	3,882353	81,5294	35,80392	10,78431
1	5,117647	107,4706	47,19608	14,21569
Total	9,000000	189,0000	83,00000	25,00000
I want my organization to optimize costs thanks to the system				
	Yes	Rather yes	I do not know	Rather not
0	5,676471	119,2059	52,34967	15,76797
1	3,323529	69,7941	30,65033	9,23203
Total	9,000000	189,0000	83,00000	25,00000

Notes: The table does not include "no" responses, as none of the respondents chose this option.

Source: Own study.

Table 1 shows that there are significant correlations between the three needs and expectations that are possible to be indicated in the context of environmental protection (respondents were allowed to indicate any three needs and expectations) and considering the requirements by the company at the stage of maintaining the environmental management system, i.e.:

- as many as 80% of the respondents expect the organization to contribute to reducing the negative impact on the environment thanks to an environmental management system,
- 57% want the implemented system to contribute to the preservation of the environment,
- 37% expect the organization to optimize costs thanks to the system.

The results show that the respondents have few needs and expectations in the field of environmental management, which may result from the low environmental consciousness of the respondents. As it has been shown, there are significant relationships between the needs expressed by respondents in the field of environmental protection and taking them into account by the enterprise. Therefore, it can be concluded that the applied environmental management system shows features of an incentive effect on employees. This conclusion is supported by further study results, which show that more than 60% of respondents revealed that their needs and expectations were or were rather considered at the system maintenance stage.

However, the enterprise should improve both the incentive system and the environmental system by not so much considering the needs and expectations articulated in relation to the environmental system by the users (including respondents), but by rewarding all pro-environmental initiatives reported by the employees in the applicable incentive system.

To further verify the motivational role of the environmental management system, a question was asked about the respondents' knowledge on how the enterprise determines training needs for the environmental management system. Table 2 shows the correlation between the way the enterprise determines training needs in the field of the environmental management system and consideration of the needs.

Table 2. Knowledge of how the enterprise determines training needs in the field of environmental management system and consideration of the needs

Have your environmental needs and expectations been taken into account in the maintenance phase of the environmental management system?	Do you know how the training needs for your environmental management system are determined?		
	Yes, through annual surveys	By management bodies	I do not know
Yes	1,06419	2,28041	5,6554
Rather yes	21,63851	46,36824	114,9932
I do not know	9,34122	20,01689	49,6419
Probably not	2,95608	6,33446	15,7095
Total	35,00000	75,00000	186,0000

Notes: The table does not include "no" responses, as none of the respondents chose this option.

Source: Own study.

Table 2 shows that there are correlations between the respondents' knowledge of how the enterprise determines training needs in the field of the environmental management system and the respect for those needs. The most frequently indicated methods were, annual surveys and management's initiative. At the same time, it should be noted that as many as 62% of respondents do not know how the enterprise determines training needs in the field of environmental management, and over 27% of respondents do not know whether their needs in the field of environmental management have been considered.

The obtained study results confirm the hypothesis (H1) that there are significant correlations between the motivational impact of the environmental management system and the expectations and needs of employees in this area. At the same time, the analysis carried out shows that this impact is not characterized by the expected dynamics. It can be concluded that this system is unclear for most of the respondents. Ignorance of the respondents in the ways of determining training needs by the enterprise may be a manifestation of the lack of interest on the part of the management in determining such needs in the field of environmental management - the satisfaction of which is the basis for external motivation. It is recommended that the company improves its incentive system by integrating it more fully with the activities and initiatives of employees for the environment.

Subsequent responses of the respondents confirm the low effectiveness of the applied incentive system in the environment, including the low impact of this system on the environmental consciousness of employees. Half of the respondents can report preventive and / or corrective actions regarding improvement in the environmental management system (52% of responses), while the other half, i.e., 19%, do not have such a possibility, and 30% have no knowledge about it. At the same time, as many as 46% of respondents replied that the current incentive system did not consider their involvement in the achievement of environmental goals, which may indicate that employee participation is not considered in the planning and decision-making process in the field of environmental management.

The analysis of the participants' responses to the questions in the context of the relationship between the barriers that make it impossible to improve the environment and the discussion of environmental problems during consultations and meetings with management indicates significant interdependencies between the variables (Table 3).

Table 3. *Organizational barriers preventing improvement of the environment and discussing environmental problems with the management*

	What are the organizational barriers to environmental improvement?	
Are environmental problems discussed during meetings with management?	Lack of proper organization	Lack of proper work procedures, instructions
Yes, and rather yes	10,27815	14,13245
I do not know	3,92053	5,39073
No, and rather not	1,80132	2,47682
Total	16,00000	22,00000

Notes: The table does not include "no" responses, as none of the respondents chose this option.

Source: Own study.

The above study results indicate that employees' lack of knowledge of environmental problems of the enterprise, probably resulting from the lack of participation in consultations and meetings with management, is significantly related to the lack of appropriate work organization. Similarly, not discussing such problems is significantly related to the lack of proper organization of work and the lack of proper procedures and instructions, and vice versa - lack of formal regulations and lack of proper organization of work have an impact on not discussing environmental problems during meetings with management staff. The above responses may indicate negligence on the part of the management in promoting environmental consciousness in the workplace.

As many as 70% of respondents indicated various communication barriers that make it impossible to improve the natural environment. The most important factors that

were indicated include, unclear, unintelligible information, lack of appropriate meetings, too little information provided by management, limited access to information, documents related to the environment, and communication in the supervisor-subordinate system carried out online only. The responses also indicate the ineffective use of persuasion by the management as a tool aimed at increasing the environmental consciousness of employees and shaping pro-quality attitudes among them. What is more, it should be added that as many as 89% of respondents admitted that they had not recently submitted any ideas to reduce the negative impact of the organization on the environment. In turn, as many as 82% of respondents do not have any ideas for improving the environmental management system and this is the main reason why the ideas cannot be considered by the company. The responses in this regard also confirm the fact that the respondents' awareness of the environmental management system and its improvement is low.

The study results also indicated the existence of significant relationships between the company's consideration for employee involvement in the implementation of environmental goals and reporting preventive and / or corrective actions in the field of EMS improvement by employees (- p-value = 0.00000, Pearson C = 0.4001806).

Therefore, it should be concluded that the hypothesis (H2) assuming that there are significant interdependencies between the motivational impact of the environmental management system and environmental consciousness is confirmed. At the same time, it should be noted that both the company's incentive system in the field of environmental management and the environmental consciousness of the respondents are of low level and require continuous improvement.

6. Conclusions

To conclude the above considerations, it should be stated that the motivational impact of environmental management in the examined enterprise is not characterized by the expected dynamics. It is recommended to improve the incentive system through its fuller integration with the activities and initiatives of employees to maintain the natural environment, including by rewarding all pro-environmental initiatives proposed by employees. It seems justified in the future to expand research on the motivational impact of environmental management on the environmental consciousness of the employees, mainly through:

1. Identification of the causes of unsatisfied employees' needs in the context of maintaining the natural environment and introducing corrective actions (eliminating the existing causes) and preventive actions (eliminating potential causes).
2. Permanent identification of training needs of employees (including management staff) in the scope of the environmental management system according to ISO 14001, training planning and their recurrent implementation, and evaluation of the training provided, including the identification of their added value (ratio of the level

of environmental consciousness after the training to the level of environmental consciousness before the training).

3. Researching the level and ways of rewarding pro-environmental initiatives reported by employees.

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