
Pro-Environmental Activities as a Condition for Increasing Efficiency and Improving the Safety of the Organization

Submitted 21/03/21, 1st revision 18/04/21, 2nd revision 29/04/21, accepted 25/05/21

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Abstract:

Purpose: The research aimed to identify the critical variables for improving the organization's pro-environmental activities in the context of improving efficiency and safety.

Design/Methodology/Approach: In the research process, to achieve the assumed research goals, it was decided to use the following research methods: the "Delphic Method," the CAWI method (Computer Assisted Web Interview), and questionnaire research. Research on environmental performance measurement and indicators was conducted on a sample of 180 organizations with at least three implemented management systems: QMS (based on the requirements of ISO 9001); EMS (based on the requirements of ISO 14001), and OHSAS (based on the requirements of PN-N 18001 or OHSAS 18001). On the other hand, research on environmental activities was carried out on 103 production companies in the food sector.

Findings: As a result of the research, it was proved that organizations are more and more willing to implement pro-environmental measures, which reduce the negative impact of the production process on the natural environment. The most important activity for all groups of organizations was to reduce the load of sewage and reduce the impact of the production process on the population.

Practical Implications: A recommendation for the organization is to improve waste management, especially in limiting its generation, as well as continuous work on increasing the environmental awareness of employees and striving that pro-environmental activities are not perceived only as an additional cost for the organization, but also as a factor bringing financial and image benefits. In addition, organizations should constantly measure environmental performance, as it contributes to increasing the organization's effectiveness, improves the degree of strategy implementation, and thus improves the safety of management.

Originality/Value: Environmental management is still a current and vital trend in research, as pro-environmental activities contribute to increasing efficiency and improving the organization's safety.

Keywords: Environmental management, pro-environmental activities, organizational effectiveness, organization safety.

JEL codes: M10, M14, M20.

Paper type: Research article.

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1. Introduction

Commitment to the environment has become an essential variable in today's competitive strategies of organizations. Most researchers of environmental management systems indicate the visible positive effects of implementing and maintaining an environmental management system according to the requirements of ISO 14001 at the level of environmental efficiency. To meet the requirements and expectations of the environment in the field of environmental protection, an organization should incorporate into its management system appropriate planning, organization, and control procedures that define its relationship with the natural environment. Most researchers of environmental management systems indicate the visible positive effects of implementing and maintaining an environmental management system according to the requirements of ISO 14001 at the level of ecological efficiency, which is confirmed by the constantly growing number of systems implemented in organizations around the world.

Identification of critical activities related to environmental protection implemented in organizations, getting to know the reasons for taking pro-environmental measures, and the environmental indicators tested constitutes a significant research direction, both from a scientific and practical point of view.

2. Literature Review

2.1 Pro-Environmental Activities in the Organization

Organization can be considered a component of economic processes and the whole of economic life and as a component of the natural cycles of matter circulation, taken into the production process and transferred in the form of products and pollutants to the social and natural environment. On the expenditure side, apart from traditional factors - labor, capital, and knowledge, there are natural resources, understood not only as mineral resources or energy carriers but also geographic space and the assimilation capacity of the natural environment. On the other hand, on the side of the production process results, next to traditional products, pollution and waste appear (Hałasa and Rumianowska, 2000). When conducting its activities, the organization bases it on a set of resources and an influential group of natural resources, such as water, energy resources, and geographical space. Without these factors, production in the organization would not be possible, and it would certainly not be possible to carry out in each form (Zielecki, 2006).

Here are constant flows between the natural system and the economic system in which organizations operate, conditioning their interdependence. The essential components of the economic system are production and consumption. The main elements of the natural system interacting with the economic system are natural resources and the capacity and readiness of the environment to accept waste. The deteriorating quality of the environment resulting from the functioning of the sphere of production and consumption in feedback - causes a gradual decline in the quality of these two

spheres. The only possibility to partially eliminate this negative dependence is pro-environmental changes in the production and consumption process. The undesirable impact of production companies on the environment, on the one hand, consists in introducing various types of pollutants into the environment (sewage, dust, waste). On the other hand, it concerns the depletion of natural resources used in production processes (Stadnicka, 2006). The increase in production is reflected in more significant emissions of gases and dust to the atmosphere, greater pollution of surface waters and soil, contaminated with plant protection products, pesticides, acid rain, and littered with waste (Żuchowski, 2001; Halaburda and Bernaciak, 2020).

Due to global environmental threats and the growing ecological awareness of the society, organizations are interested in implementing pro-environmental measures, which also bring benefits for themselves in the long term. These activities may take the form of neutralizing pollutants and preventing their formation. Treatment of pollutants is mainly done using end-of-pipe methods, techniques, or equipment (e.g., exhaust gas purification filters, wastewater treatment plants, landfills). On the other hand, pollution can be prevented by modifying the equipment or technology, changing the technology to a new, improved one (low-waste and non-waste methods), modernizing or redesigning products (appropriate changes in the design of products), introducing raw material substitutes or using renewable raw materials, as well as by making such changes in the structure of the final product intended for consumption or investment, which will reduce the share of environmentally polluting products in it (Poskrobko and Poskrobko, 2012; Kryk, 2001). As part of the “end-of-pipe” investments in the field of atmospheric air and climate protection, production companies can install dust reduction equipment and gas pollutant neutralization equipment.

On the other hand, in wastewater management, production plants install wastewater treatment plants, a sewage network supplying wastewater to the wastewater treatment plant and for rainwater and invest in equipment for the processing and management of sewage sludge. End-of-pipe investments in waste management include, for example, construction and arrangement of landfills and sedimentation ponds for industrial and municipal waste, reclamation of heaps, landfills, and sedimentation ponds for industrial and municipal waste. As part of the environmental policy of manufacturing companies, particular emphasis is placed on implementing methods that will minimize the number of pollutants and waste generated and not only neutralize them. As part of the “beginning of the pipe” investment, for the protection of atmospheric air, companies use, among others, new techniques and technologies of fuel combustion and devices for the reuse of exhaust gases, modernization of boiler rooms and heating plants, renewable energy sources. In water and sewage management, new techniques and technologies are implemented to produce a smaller amount of sewage and sewage sludge and water circulation systems. To minimize the amount of waste generated in the production process, organizations use new low-waste and non-waste technologies (Kobyłko, 2007).

These activities about the production company mean, among others, reducing the resource and energy consumption of production processes, implementing pro-environmental changes in production technology, reducing pollution and waste directly generated by the company, designing products in terms of their environmental performance, considering the requirements of environmental protection and rational management of its resources at all production stages (Jabłoński, 2001).

The critical issue related to environmental protection in the enterprise and financial matters related to profit generation is the improvement of activities in the area of sustainable use of raw materials, materials, water, and energy. In order to achieve this, the entrepreneur must introduce water consumption standards in selected, especially water-consuming production processes, based on data on the best available techniques (BAT), reduction of groundwater consumption, intensification of the use of closed water circuits and the reuse of less polluted wastewater, reducing the energy consumption of the production process by using energy-saving technologies, rationalizing transport and extending the life cycle of products, as well as reducing the material consumption of the production process (Hadryjańska, 2015).

2.2 Characteristics of the Environmental Management System

To meet the requirements and expectations of the environment in the field of environmental protection, the organization should incorporate into its management system appropriate planning, organization, and control procedures, defining its relationship with the natural environment, i.e., it should shape the approach to environmental protection in the same way as it develops other strategies (Burzyńska and Fila, 2007; Wysocki, 2017). Building an environmental protection strategy must begin with creating a "vision of the environment" in the company and developing a scenario containing, among others, a description of the ecological environment (in the context of the company's interests) and taking into account the company's tasks in the future, resulting from the stringent environmental protection rules, i.e., from the formulation of the principle of its development policy, which should be consistent with the hierarchy of values recognized by society and the provisions of national and international law (Penc, 2003).

Having already chosen an environmental protection strategy, an organization can start implementing activities that fall within the scope of environmental management understood as a resource of knowledge, skills, and techniques for managing a company, which ensures high economic efficiency of production and services, the minimal burden on the natural environment and good work comfort for the company's staff (Ejdys, 2002).

A handy instrument in environmental management, improving the efficiency of its functioning, is the environmental management system, which is a sign of a modern enterprise and is in practice an element of the implementation of sustainable development assumptions. The environmental management system (EMS) is that part

of the overall management system that provides the organizational structure, planning, responsibility, methods, practice, procedures, processes, and resources to improve, implement, meet assumptions, evaluate, and maintain the company's environmental policy (Hajduk-Stelmachowicz, 2006; Chornomaz, 2016).

One of the best known and most frequently used environmental management systems is EMS according to the ISO 14000 standard. Its procedures and guidelines are so precise that implementing this standard in an organization ensures the organization's ecological safety and surroundings. ISO 14000 standards focus on environmental management with which the global community of stakeholders is associated. Having an environmental management system by an organization in many cases facilitates the conduct of international business (Mohamed, 2001; Pur, 2013).

The most helpful standard is 14001, which contains the requirements for an environmental management system. The purpose of the ISO 14001 standard is to provide organizations with elements of effective environmental management that can be integrated with other management requirements to make it easier to achieve the desired environmental and economic effects (Curkovic *et al.*, 2001). The ISO 14001 standard provides organizations implementing an environmental management system with guidelines and tips to identify the environmental policy, environmental aspects related to the organization's operation, legal requirements, and other obligations, a set of clearly defines goals and tasks for improving the environmental impact of the organization, and an environmental management program (Zobel and Burman, 2004). Continuous improvement is a critical element of the ISO 14001 standard. Together with the prevention of pollution, it is the primary obligation to which the organization commits its environmental policy and activities (Brouwer and van Koppen, 2008).

The ISO 14001 standard is a document applied voluntarily, widely available, and approved by an accredited standardization body. It includes the specification of a systemic approach to environmental management, including requirements subject to periodic, systematic, and objective audits for certification or self-declaration (Casadeusz, Marimon, and Heras, 2008). It has been developed to be applied to a variety of geographic, cultural, and social conditions. This standard does not lay down absolute requirements relating to the effects of environmental performance (Raines, 2002). Only requirements for the organization's commitment to the environmental policy are included, which indicate that the organization will act according to the relevant legislation and regulations related to the organization's environmental aspects. In addition, in the environmental policy, the organization should include a commitment to minimize the negative impact on the environment, prevent pollution, and continuously improve the effects of environmental activities (Ammenberg, Hjelm, and Quotes, 2002).

In 2015, the new ISO14001:2015 standard came into force, placing particular emphasis on strengthening the links between environmental management and the organization's core activities. It also drew attention to the strategic dimension of environmental management and the strengthening of the EMS performance

assessment requirements. The revised standard shows greater expectations of top management in terms of leadership, making its commitments in terms of sustainable development and social responsibility, considering the environmental impact of the organization's environmental management system on the entire value chain, including procurement (www.iso.org).

2.3 Implementation Status and Development Prospects for Environmental Management Systems According to ISO 14001 in the World

Environmental management systems are prevalent. Most often, organizations implement the system based on the requirements of the ISO 14001 standard. However, it should be noted that there are currently about 30 alternative systems globally in terms of environmental management.

Observing the development of certification of environmental management systems globally, one can see a steady increase in the number of certificates awarded for compliance with the requirements of the international environmental management standard according to ISO 14001. According to the data in the report published in December 2001 - 67,000 organizations worldwide had a certificate of compliance with the requirements of the international ISO 14001, in 2011 - 267,449 organizations, and 2019 - 312,580.

The number of environmental management system certificates increased almost nine times from 2001 to 2019. From 2001 to 2019, a continuous increase in the number of certificates can be observed. The estimated regression model for the certification of environmental management systems worldwide shows that the number of ISO 14001 certificates worldwide increases by approximately 24,334.

Table 1 shows the leaders in terms of the number of certificates confirming compliance with the ISO 14001 standard in individual regions of the world in 2019. As regards the most significant number of environmental management system certificates at the end of 2019, organizations from highly developed countries dominate, among which the following can be distinguished: China - 134,926, Japan - 74,443, Italy - 28,409, Spain - 26,356, and United Kingdom of Great Britain and Northern Ireland - 11,420. In 2011, Poland was in the 19th position with the number of 1,900 certificates obtained, and in 2019 in the 12th position with the number - 3,766 certificates.

The following industries were characterized by the most significant number of environmental management system certificates issued for compliance with the requirements of the ISO 14001 standard in 2019: Construction - 61,162 certificates, Sector not known - 56,030, Wholesale and retail trade, repairs of motor vehicles, motorcycles and personal & household goods - 34,870, Basic metal and fabricated metal products - 32,662, Electrical and optical equipment - 31,162, Engineering services - 21,683.

Table 1. Leaders in the number of certificates confirming compliance with the requirements of the ISO 14001 standard in the world in 2019.

	Country	certificates
1	China	134 926
2	Japan	74 443
3	Italy	28 409
4	Spain	26 356
5	United Kingdom of Great Britain and Northern Ireland	11 420
6	India	8 486
7	Germany	8 465
8	France	6 402
9	Korea (Republic of)	5 698
10	Romania	4 658
11	Czech Republic	4 409
12	Poland	3 766
13	United States of America	3 671
14	Thailand	3 189
15	Colombia	3 071

Source: Own study, 2021, based on The International Organization for Standardization - ISO Survey of Certifications 2019, 2020.

Summing up the popularity of environmental management systems according to the requirements of the ISO 14001 standard, it should be stated that according to the data contained in the ISO Survey 2019 report, the interest in the certification of environmental management systems is a development perspective in the coming years.

2.4 Increasing the Efficiency of an Organization as a Determinant of Improving Security

Efficient and effective management is the key to achieving a competitive advantage and improving the organization's security, understood as the ability to survive and develop (Wysokińska-Senkus, 2020). The professionalism of management, competencies of managers, and a style adapter to the nation's culture and the work culture of managers are the most crucial source of stimulating entrepreneurship (Penc, 2007).

Management effectiveness is the key to increasing the organization's competitiveness through the ability to implement the company's strategy and goals. As shown by the source analyses, an organization that achieves high efficiency is characterized by a great match between the strategy, systems, structure, leadership style, as well as the skills and style of work of employees (Peters and Waterman, 1982), constantly strives to improve the way it operates not to be content with a state of contentment that could become the beginning of the end (Collins, 2001).

Efficiency is not an unequivocal concept, as there are various interpretations of this term in social and economic sciences, and there is also no clear-cut approach to this concept in the environment of management practitioners and theorists. Most often, efficiency is perceived in terms of purpose and system (Bielski, 2004; Krzyżanowski, 1975; Drucker, 1994; Katz and Kahn, 1979). Organizational effectiveness is based on four dimensions: financial, operational (internal processes), market (client), and dynamic (development) (Kaplan and Norton, 2001).

Efficiency is a concept that is difficult to define and measure. It is defined by terms such as operational efficiency, positive result, profitability, productivity, competence, effectiveness, purposefulness, rationality, efficacy, and usefulness.

P.A. Samuelson and W.D. Nordhaus argues that efficiency is perhaps the main object of economics and is, broadly speaking, related to the absence of waste. According to them, the economy functions effectively if it is not possible to increase the production of one good without reducing the production, which is tantamount to reaching the limit of production possibilities (Samuelson and Nordhays, 1995).

H. Emerson defines in his 1924 book "Twelve Principles of Efficiency" the concept of efficiency, which he describes as a "relationship to a certain pattern expressed as a percentage." According to C. Barnard, an influential organization achieves its goals (Barnard 1938). Campbell, Dunnette, Lawler, and Weick defined efficiency as an activity that gives value to a specific behavior in an organization that leads to achieving important goals of that organization (Campbell *et al.*, 1970). "The effectiveness of an organization concerns the degree of achievement of the assumed goals" (Kaczmarek, 2001). According to Drucker, efficiency is a crucial element of human and organizational development, which is used for self-realization and the ability of the new society to survive; it is also the degree of mastery of the goal (Drucker, 2007).

Efficiency is a positive result, effectiveness, efficacy, and skill; it is also an essential tool for measuring the effectiveness of management (Skrzypek, 2002). It can be understood as: the cost-effective relationship, the ability to quickly adapt to changes, a tool for measuring effectiveness and efficiency, the speed of response to market challenges and expectations, a measure of the organization's ability to implement the strategy and achieve goals (Skrzypek, 1999). The efficiency category includes both economic and organizational values that an enterprise creates. According to K. Lisiecka, organizational effectiveness is synonymous with effectiveness, while economic effectiveness is equivalent to the so-called efficiency (Lisiecka, 2002).

This concept is an expression of the ratio of effects to inputs (Melich, 1980). This is because efficiency is assessed based on the ratio of the results achieved to the necessary expenditure incurred to obtain these results (Pasiczny, 1987). Contemporary challenges that organizations face, related to the constant process of changes, have contributed to the fact that to guarantee success in the long-term

perspective, organizations should include the continuous improvement process in the framework of strategy design.

Organizational effectiveness is an exciting issue, which is still a current research stream, which is particularly important for economic practice because increasing efficiency is a crucial goal of every organization. Measurement of management effectiveness with an indication of measurement methods is a critical issue in small and medium-sized enterprises. The results of the literature review carried out by the author show that this is an area not fully recognized in the SME sector. Enriching the organization's strategy with a set of measures that assess the organization's effectiveness is a prerequisite for success in a dynamically changing environment.

Enterprises must be aware that operating in a turbulent environment forces monitoring and analyzing the performance of the enterprise. Measurement of organizational performance has been recognized as a critical element to improve the company's performance (Sharma, Bhagwat, and Dangayach, 2005).

The effectiveness of the organization's operation should relate to the achievement of goals in at least the three perspectives mentioned above determined by the environment of the organization, i.e., in the economic, social, and environmental perspectives. High environmental performance is one of the goals of the organization. Organizations should set goals that will translate into a management program that will achieve the desired level of security. The basis of an acceptable level of safety is an organization's comprehensive safety management system, which provides means of controlling and monitoring performance. The critical factor in improving the efficiency of an organization is designing a strategy that will ensure success in the changing environmental conditions.

Fernández-Muñiz *et al.* (2014) explored the relationship between safety leadership and risk management, and safety performance. This study showed that the safety-related behavior of employees has a positive effect on occupational safety, active risk management has a significant positive impact on safety behavior and safety performance (Ershadi, Edrisabadi, and Shakouri, 2019). The determinant of organizational effectiveness and improvement of its security is a properly designed security culture, development, and implementation, which is a complicated issue (Gunningham and Sinclair, 2014).

3. Research Methodology and Results

The research aimed to identify critical activities related to environmental protection implemented in organizations, the reasons for taking pro-environmental measures, priority pro-environmental measures, and the tested environmental indicators.

- Research questions: What are the critical pro-environmental activities undertaken by organizations?
- What is the state of implementation of environmental management systems

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- in the world, what changes have occurred in the last 16 years?
- What are the reasons for taking pro-environmental measures?
 - What environmental indicators are used by organizations, and what is their degree of use and sustainability in the organization?

Research on environmental performance measurement and indicators was conducted on a sample of 180 organizations with at least three implemented management systems: QMS (based on the requirements of ISO 9001); EMS (based on the requirements of ISO 14001), and OHSAS (based on the requirements of PN-N 18001 or OHSAS 18001).

On the other hand, research on environmental activities was carried out on 103 production companies in the food sector. Among them, there were 50 medium-sized enterprises, 36 small enterprises, and 15 large enterprises.

The following methods were used in our study: document research method, diagnostic survey method, survey method, observation method, CAWI (Computer Assisted Web Interviews), analysis of case studies, survey questionnaire.

The surveyed organizations were asked about specific pro-environmental activities introduced in their plants in 2003 (before joining the EU) and 2019 (Table 2). Within 16 years, the involvement of enterprises in activities aimed at reducing the negative impact of the production process on the natural environment has increased. It was observed that the number of small organizations that declared the implementation of measures to increase the environmental awareness of employees, reduce losses and leaks during the management of raw materials, and ensure lower consumption of raw materials for the production process increased more than twice.

Among medium-sized enterprises, a substantial increase in involvement in activities related to the installation of filters reducing the emission of pollutants into the atmosphere and activities limiting the negative impact on the natural environment in the transport department. In 2019, over 70% of large organizations implemented measures to increase the environmental awareness of their employees, reduce losses and leaks in the management of raw materials, measures to reduce the negative impact on the natural environment in the transport department, and also had its sewage treatment plant. It follows that the group of enterprises that implement pro-environmental activities to the greatest extent are large organizations, which is not surprising considering that these organizations have the most significant investment capital. At the same time, it should be emphasized that in small enterprises, the most significant changes in the implementation of environmental protection measures took place during the period under study.

The organizations also specified the reasons for taking pro-environmental measures (Table 3). For all three types of enterprises, an essential motivation for such activities was adapting to legal regulations. For small and large enterprises, an important factor was the reduction of production costs resulting from reducing the consumption of raw

materials for production and the formation of harmful substances during production. For large organizations, the prospect of increased operational efficiency was necessary, met consumers' expectations, and maintained a competitive position on the market. When deciding on the implementation of pro-environmental measures, enterprises were to a small extent guided by the improvement of the company's image and increasing its competitiveness.

Table 2. *Specific pro-environmental activities implemented in manufacturing enterprises in 2003 and 2019*

Activities related to environmental protection carried out in the enterprise	Small [%]		Medium [%]		Large [%]	
	2019	2003	2019	2003	2019	2003
Increasing the environmental awareness of employees through training, by increasing duties and responsibilities, by increasing influence on decisions made within the labour department.	88,8	33,3	78,0	60,0	80,0	66,6
Reducing losses and leaks during the management of raw materials through regular inspections of warehouse areas, by providing training for employees, by storing tanks on a hardened surface, by equipping them with protective brickwork, by ensuring that passages are not blocked	77,7	36,1	80,0	64,0	73,3	66,6
Installing filters to reduce the emission of pollutants into the atmosphere	55,5	36,1	80,0	20,0	66,6	40,0
Limiting the negative impact on the natural environment in the transport department	52,7	33,3	66,0	20,0	86,7	46,7
Less consumption of raw materials for the production process	46,5	0,0	66,0	50,0	60,0	40,0
Having your own treatment plant	43,3	25,0	66,0	46,0	73,3	46,7
Designed to reduce noise levels	32,7	30,0	46,0	24,0	66,6	40,0
Indoor air condition control in production areas	31,2	10,0	68,0	36,0	93,3	53,3
Prevent contaminated water from flowing into sewers	33,4	20,0	30,0	20,0	73,3	53,3

Source: Own studies 2019.

Table 3. *Reasons for taking pro-environmental measures by manufacturing companies in 2019*

The reason for taking pro-environmental measures	Small [%]		Medium [%]		Large [%]	
	the most important	unimportant	the most important	unimportant	the most important	unimportant

the need to comply with legal regulations	66,6	33,3	81,0	2,4	60,0	33,3
meeting the requirements and expectations of consumers	44,4	38,9	25,0	54,2	55,6	11,1
maintaining the position on the market	22,2	47,2	34,6	38,5	55,6	11,1
improving the image of the company	22,2	75,0	42,9	31,4	41,7	41,7
increase in operating efficiency	44,4	55,5	48,5	30,3	76,9	15,4
reduction of production costs	61,1	22,2	37,5	25,0	85,7	14,3
increasing the company's competitiveness	27,8	33,3	20,7	58,6	45,5	18,2
general industry trend	0,0	50,0	29,2	50,0	28,6	42,9

Source: Own studies 2019.

Small production enterprises of the food sector most often indicated reducing the pollution load of sewage and reducing the negative impact on population centers as the priority pro-environmental action. Almost 80% of medium-sized organizations have introduced a reduction in the amount of waste, and 70% have implemented measures to reduce emissions to the atmosphere and reduce the number of pollutants in wastewater. The most frequently indicated priority pro-environmental action was reducing the amount of heat and electricity used in the production process among large organizations. The most crucial activity for enterprises, irrespective of their size, was to reduce the pollution load of sewage and the negative impact (Table 4).

Table 4. Priority pro-environmental activities undertaken by manufacturing companies in 2019

Priority pro-environmental activities	Small [%]		Medium [%]		Large [%]	
	the most important	unimportant	the most important	unimportant	the most important	unimportant
waste reduction	61,1	38,9	78,0	6,0	40,0	33,3
reduction of emissions to the atmosphere	50,0	0,0	70,0	18,0	53,3	26,7
reduction of pollutant load of wastewater	91,7	11,1	70,0	8,0	53,3	21,4
reduction of the amount of heat and electricity	58,3	22,2	52,0	28,0	79,7	20,0
savings in raw materials	55,5	27,8	48,0	30,0	20,0	53,3
reducing the negative impact on population centres	80,5	19,4	60,0	20,0	53,3	40,0

Source: Own studies 2020.

According to the research conducted, organizations measure environmental performance using obligatory environmental indicators, including nine indicators (Table 5).

Table 5. *Characteristics of the studied indicators - obligatory environmental indicators*

Symbol	Nazwa	QMS,EMS, OHSAS	
		%	WRO
DWMP	Disposal and Waste Management Policy	96,4	0,92
GELT	The amount and types of gases released into the air	90,6	0,84
DELT	The amount and types of dust released into the air	85,6	0,86
ACSWR	Amount, Condition and Composition of Solid Waste	82,3	0,86
EC	Energy consumption	77,4	0,86
WLQQT	Quantity and Quality, and Type of Waters Taken	70,0	0,86
ACSR	Quantity, condition and composition of the discharged sewage	52,3	0,76
ATFU	Amount and Type of Fuel Used	47,8	0,84
LU	Land use	46,0	0,52

Source: Own studies 2019.

Among this group of indicators, the analysed organizations measured: DWMP - Disposal and Waste Management Policy with the number of responses 96.4%; GELT - The amount and types of gases released into the air - 90.6%; DELT - Amount and Types of Dust released into the air - 85.6%; ACSWR - Quantities, Condition, and Composition of Solid Waste - 82.3%; EC - Energy consumption - 77.4%; WLQQT - Quantity, Quality, and Type of Collected Water - 70.0%; ACSR - Quantities, Condition, and Composition of the Released Sewage - 52.3%; ATFU - Amount and Type of Fuel Consumed - 47.8% and LU - Land Development - 46%.

These indicators are obligatory, but not for all organizations, which results from the fact that fees for using the environment are charged only after exceeding a certain level specified in the relevant laws and regulations relating to mandatory indicators. The analysis of the relative assessment indicator shows that all indicators in this group were considered important.

4. Conclusion

Production organizations are more willing to implement pro-environmental activities that reduce the negative impact of the production process on the natural environment. In the 16 years that have passed since Poland joined the European Union, all three groups of enterprises (small, medium, and large) have increased their involvement in this area. Substantial positive changes were observed in the group of small plants. There is a visible difference between large enterprises and entities belonging to the other two groups. Due to higher financial capital, large enterprises demonstrate a greater degree of implementation of measures to improve environmental parameters than other organizations. Large enterprises are more willing to undertake universal actions. This demonstrates their essential role as pattern-setting organizations in the food sector.

The most important activity for all groups of organizations was to reduce the load of sewage and reduce the impact of the production process on the population. This can be associated with implementing CSR (Corporate Social Responsibility) strategies and the concept of sustainable development in many production plants.

A recommendation for organizations operating in the food sector is to improve waste management, especially in limiting its generation, as well as to constantly work to increase the environmental awareness of employees and to strive to ensure that pro-environmental activities are not perceived only as an additional cost for the organization, but also as a factor that brings financial and image benefits.

Efficient and effective management is the key to achieving a competitive advantage and improving the organization's security, understood as the ability to survive and develop.

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