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Pro-Environmental Organizational Culture: Its Essence and a Concept for Its Operationalization

Katarzyna Piwowar-Sulej

Department of Labor, Capital and Innovation, Wroclaw University of Economics and Business, Komandorska 118/120, 53-345 Wroclaw, Poland; katarzyna.piwowar-sulej@ue.wroc.pl; Tel.: +48-503129991

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Abstract: Organizational culture is currently considered a critical factor in achieving success in any business activity, including the implementation of the idea of sustainability. Sustainability-driven organizations incorporate a triple bottom line approach, which promotes the collateral achievement of companies' environmental, economic, and social goals. The first bottom line is related to environmental sustainability. This bottom line should be facilitated by a pro-environmental organizational culture (PE culture). A company should strive to bring this culture to the highest possible level. Although in the literature on the subject some research on the factors that influence employees' pro-environmental behavior have been presented, environmental sustainability in the context of organizational culture has received comparatively little attention. So far, the concept of levels of PE culture and the corresponding measurement instrument have not been developed. The aim of this paper is to present the concept of a pro-environmental organizational culture and its operationalization to support the achievement of sustainability goals. Operationalization is the process of determining the extension of a concept, which in turn transforms the concept into a metric. This paper presents a four-level concept of PE culture and a research instrument developed for the purpose of measuring the cultural level in organizations. The instrument was tested in a manufacturing company.

Keywords: environmental sustainability; organizational culture; pro-environmental culture; human resource management; cultural levels; survey questionnaire

1. Introduction

Sustainable development is a philosophy that is currently spreading around the world. Sustainable development—which has been widely studied in recent years—in general is defined as development "that meets the needs of the present without compromising the ability of future generations to meet their own needs" [1] (p. 49), while sustainability itself is associated with the ability to provide appropriate future living conditions [2]. The triple bottom line as a foundation of sustainability is a concept which consists of three elements—environmental, economic, and social sustainability [3].

The first bottom line, focused on environmental issues, is the basic assumption of the general concept of sustainability due to the fact that the idea of sustainability has been noticed and has gained attention since the report of the United Nations Brundtland Commission was published [1]. The document emphasized the importance of retaining the world's natural resources for future generations. The environmental bottom line is performed in the form of companies' endeavors that benefit the natural order as much as possible or that at least do no harm and minimize environmental impact [4]. They are represented by, for example, the careful consumption of energy and reduction of manufacturing waste.

Economic systems are mutually social systems. The social bottom line is related to employees—the most important stakeholders [5]—and the position of a company in the view of the local society. This bottom line is shaped by offering fair and beneficial labor practices and having an impact on

the local community. Finally, in 1992, Weale [6] smashed the conventional belief that economic goals and environmental concerns were mutually exclusive. Nowadays, the assumption is that economic sustainability depends on a suitable degree of sustainability in the social and environmental bottom line and continuous learning [7].

The concept of sustainability is linked with human resources management (HRM) in the form of sustainability-oriented HRM [8], sustainable HRM [9], socially responsible HRM [10], and green HRM [11]. The last notion indicates the role of HRM in environmental sustainability. The literature on general HRM strongly emphasizes that culture (including national culture and organizational culture)—like one's subconscious—affects people's aspirations, attitudes, and behavior. Organizational culture, especially in a non-verbal, unnoticeable manner, focuses employees' actions along routine tracks. The culture that connects people in an organization remains very closely linked to the organization's performance [12–15].

As mentioned above, the social bottom line, in the context of employees' needs, can be performed by ensuring appropriate labor practices. These practices should ensure safe and healthy working conditions. With regard to the issue of shaping such conditions, the notion of health and safety culture (OHS culture) or safety culture is used. This culture is an element of organizational culture which expresses the value of human health and life. In the literature on the subject, many concepts of levels of OHS culture and instruments used in order to diagnose it have been presented (e.g., the Safety Culture Grid [16], International Atomic Energy Agency (IAEA) Guidance for Use in the Enhancement of Safety Culture [17], and Score Your Safety Culture Checklist [18]) [19].

The first bottom line should be facilitated by a pro-environmental organizational culture (PE culture), or "green" culture. Researchers diagnosing the factors that influence pro-environmental behavior have noticed the importance of culture based on ecological values [20–22]. Environmental culture is discussed in reference to the features of modern society [23]. The results of different empirical research have proved that local and organizational culture has a significant impact on environmental performance [24,25]. Linnenluecke and Griffiths [26] tried to build a theoretical concept of organizational culture, which is based on the Competing Values Framework by Cameron and Quinn [27]. They described how different cultural dimensions are reflected in organizational pro-environmental policy. However, as Rompa [28] states, sustainability in the context of HRM has received comparatively little attention from scholars. The same thesis can be formulated for the topic of organizational culture. So far, for example, the concept of levels of this culture and the corresponding measurement instrument have not been developed.

The aim of this paper is to present the concept of pro-environmental organizational culture and its operationalization in order to support the achievement of sustainability goals. Operationalization is the process of determining the extension of a concept, which in turn transforms the concept into a metric. Hence, operationalization enables a uniform understanding and use of the concept. The main stages of operationalization are as follows [29]:

(1) formulating the research problem;
(2) sampling, or selecting elements that represent the studied population;
(3) selecting indicators, including identifying factors, that shape the examined phenomenon; and
(4) carrying out and completing at least a pilot empirical study.

The research problem is how to diagnose the PE culture in order to determine the level of this culture. The paper contributes to academic knowledge by (a) developing an original research tool, (b) testing the tool, (c) formulating implications for practitioners, and (d) suggesting directions for future research. In the second section of the paper, the concept of PE culture is presented on the basis of literature studies, and the author's concept of four levels of PE culture is described. The second section discusses methods of diagnosing and measuring PE culture as well. In the third section, the research methodology is presented. The author of this study built a questionnaire and tested it in 2020 in a medium-sized manufacturing company operating in the automotive industry. The survey

was conducted with 34 employees. The paper ends with conclusions, limitations, and directions for further research.

2. Pro-Environmental Culture and the Basics of Its Diagnosis

2.1. The Essence and Factors That Determine Pro-Environmental Culture

The term pro-environmental culture, or green culture, is derived from the general concept of organizational culture. Organizational culture can be defined as (a) a pattern of basic assumptions (b) invented, discovered, or developed by a given group (c) as it learns to cope with its problems of external adaptation and internal integration, (d) which has worked well enough to be considered valid and, (e) therefore, is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems" [30] (p. 114).

It is worth recalling here the definition of organizational culture according to Hofstede. This author places organizational culture in a broader cultural context. He defines it as "the collective programming of the mind which distinguishes the members of one group or category of people from another" [31] (p. 5). The author also points out that organizational culture is not limited to the minds of the members of a given organization, because it is rooted in the minds of the stakeholders of the entity—its clients, contractors, or representatives of the social environment as well. Organizational cultures primarily include the level of daily practices (symbols and rituals) and, to a lesser extent, the values that are promoted mainly in national cultures. In turn, Cameron and Quinn emphasize the greater—in comparison to Hofstede—importance of values in shaping organizational cultures. These authors state that organizational culture is manifested in organizational values, dominant leadership styles, language and symbols, ways of operating, routine procedures, and the definition of success [25]. These features of an organization not only distinguish it from others but can lead to the formation of specific subcultures in different organizational units. However, the authors emphasize that all organizational units have common and characteristic elements for the entire entity which constitute organizational culture.

Environmental (or green) organizational culture can be regarded as an element of organizational culture that reflects how important environmental problems are to the organization. It is "a symbolic context about environmental management and protection within which interpretations guide behaviors and processes of members' sense making and set of values and norms describing how the company perceives the environmental variable" [27] (p. 80). The creation of an advanced green organizational culture is an advantage for companies that would like to make change and reform in the context of green ideas. A pro-environmental culture is needed to socialize employees according to a company's environmental strategy [32]. Such a culture can also help to establish a good image of an organization, which results in good competitive abilities [33].

A pro-environmental culture can be analyzed from the perspective of elements distinguished by Schein [30]. In his model, individual components of organizational culture are distinguished on the basis of two criteria: the ease of observation and the degree to which the organizations' members are aware. These elements are then grouped into three levels, i.e., artifacts (symbols), norms and values, and basic assumptions. Artifacts are what we see, feel, and hear in our contact with a given organizational culture. Physical artifacts can be, for example, posters hung in many rooms of the enterprise that encourage employees to partake in ecological activities, or containers that enable recycling. There are also language- (when environmental topics are discussed) and behavioral artifacts (visible green practices). Values are defined as "desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity" [34] (p. 21). Cultural norms are shared expectations and rules that guide employees' behavior. Values and norms are expressed through the views and attitudes of members of the organization. In a green culture, such values as ecology or openness to change and such norms as sharing knowledge can be present. Finally, basic assumptions—as the most hidden level of culture—are the core of culture, being the basis of the other

previously mentioned components, responding to such problems as existence, human nature, etc. Basic assumptions are how people truly feel concern for the environment.

Dauber et al. [35] created list of factors that influence organizational culture, including organizational strategy, structure, and operations as the internal environment (which it could be argued are manifestations of the culture); risk and legitimacy environments as components of the external environment; and dynamic relationships among the various elements. These factors are of a general nature and can be used while analyzing the PE culture. However, in the academic papers one can find factors related in particular to OHS culture.

As indicated in the introduction, OHS culture has been comprehensively developed as a theoretical concept. Various typologies of factors impacting this culture have been presented in the subject literature. They can be related to pro-environmental culture. Protecting the environment is strongly connected with the state of our health. People should not harm nature due to the fact that they are a part of nature. The importance of OHS culture was first clearly highlighted after the Chernobyl disaster in 1986. The International Nuclear Safety Advisory Group investigation identified a weak safety culture as one of the factors contributing to this nuclear disaster. The accident is also an example of the connection and mutual influence of two areas: human health and safety and environmental issues. A clean environment means simply healthier lives.

When referring to Geller's concept of factors that influence OHS culture, special attention should be paid to [36]:

- the physical work environment (tools, machines, and the organization of the work space);
- employee behavior (compliance with regulations, providing information and cooperation, and demonstrating concern for environmental issues); and
- the internal characteristics of employees (knowledge, skills, and motivation).

Moreover, different concepts of levels of safety culture can be found in academic publications. They refer to an organization's maturity model and serve as a tool to help organizations determine their current maturity level in the field of OHS and identify actions that should be implemented in order to improve working conditions [37]. The model developed for the oil and gas industry by Hudson [38] comprises five levels that are increasingly informed and characterized by increased trust:

(a) pathological—this level is characterized by the situation where nobody cares as long as they are not caught;
(b) reactive—on this level, safety is important but only after an accident occurs;
(c) calculative—there is a system in the company to manage all hazards;
(d) proactive—problems mean challenges;
(e) generative—OHS is a mindset.

In turn, the DuPont™ Bradley Curve™ consists of four stages [39]:

- the reactive stage, when only natural instincts dominate and employees do not feel that they are responsible for OHS; they also believe accidents will always happen;
- the dependent stage, which focuses on documentation, formal rules, and strict supervision; employees view safety as acting in accordance with the rules;
- the independent stage, in which self-motivation appears; employees take responsibility for OHS;
- the interdependent stage, which is fully based on intrinsic motivation, employee participation, and teamwork; individuals and teams of employees feel responsible for OHS.

In the literature devoted to sustainable HRM the four following approaches to implementation of this management concept are presented [40]:

1. Unsustainable. There is a lack of care about the environment and other elements related to sustainable development.

2.   Reactive. This means adjusting to the minimum required by legal regulation. Cost reduction (thanks to compliance with environmental regulations) and generating wealth for shareholders are two key goals.
3.   Stakeholder-based approach. The goal is to respond to activities undertaken by competitors and benchmarking. An organization can be also influenced by pressure from other stakeholders such as the community. Reaction is needed in order not to lose position in the market.
4.   Proactive approach. Sustainability is an element of organizational culture.

Based on above-presented theories and academic refection, the author of this paper developed a four-level approach to PE culture which is presented in Table 1.

Table 1. Pro-environmental (PE) cultural levels.

Cultural Level	Description	Type of Employee Motivation
Level 1—"zero level", "culture of high risk"	Environmental issues are not important. Nobody cares about them. There is lack of communication in this area. Pathological behavior is accepted.	No motivation
Level 2—"reactive culture"	The only motivation for PE activities is fear of punishment. The company focuses on ensuring the compliance of internal documentation with the relevant general legal rules. Nobody cares about communication in this area.	Negative motivation—fear serves as a motivational factor
Level 3—"active culture", "systematic culture"	The company undertakes more activities than are required by law. There is a formal environmental policy and environmental system. The flow of information and the procedures are effective. PE goals are formally set for individuals and teams. PE performance is a subject of assessment.	Positive but extrinsic motivation
Level 4—"continuous improvement"	The company undertakes more pro-environmental activities than are required by legal regulations and has a formal environmental policy. Employees are involved on an individual and group level in different activities related to risk assessment or improvements in working conditions, for example. They help each other and share knowledge about PE issues. They are not only involved but truly engaged in these activities and believe that together they can "change the world." The company participates in global pro-environmental programs and shares best practices with other companies.	Intrinsic motivation

The problem of environment protection does not exist in the organizations functioning at Level 1. The organizations from the second level of PE culture use passive strategies consisting of responding to the introduced legal regulations alone. Such companies approach environment protection as a secondary issue, generating mainly additional costs. Active strategies—implemented at Levels 3 and 4—are an expression of the company's involvement in the activities reducing environmental degradation. Level 3 enterprises operate while having the environmental issues in mind at all production stages. Level 4 enterprises, in turn, represent a model for other companies. They not only introduce internal projects, but also share their knowledge with other organizations.

The literature indicates that pro-environmental behavior might be developed using a hard HRM approach, following which the management implements policies in order to force employees into adopting pro-environmental behavior or through soft HRM, whereby employees actively participate in green events [41]. Hard HRM is a practice used in companies operating on Level 2. A middle solution can be added in the form of soft HRM, aiming at giving incentives to employees for appropriate behavior (Level 3). Thus, motivation can be negative (Level 2) or positive (Level 3 and Level 4), extrinsic (Level 2 and Level 3) or intrinsic (Level 4).

It can be assumed that a certain level of PE culture is reached when all level-specific features have been identified. For this purpose, a diagnosis of PE culture becomes necessary.

2.2. Stages in Diagnosing Pro-Environmental Culture

The diagnosis of PE culture allows the organization not only to assess its current status but also to implement necessary changes. Organizational culture, including PE culture, can change in a controlled

way. The organization's managers play a special role in shaping the desired culture. They have an impact on the numerous cultural factors mentioned in the previous part of this paper.

Regarding the issue of diagnosing and changing PE culture, there are several elements that require special attention [42]:

- The purpose of diagnosing PE culture should not only be to collect characteristics of this culture but first of all to assess its condition and formulate recommendations on how it can be changed.
- The recognition of PE culture requires understanding of the mechanisms of employee behavior. It is not enough to know the cultural assumptions. You need to know its strength in order to be able to explain employee behavior.
- The assessment of culture is complicated. It requires a theoretical (analytical) and pragmatic approach.
- It takes many years to successfully introduce changes in organizational culture.

Taking into account the above-listed elements, it can be said that the first stage in diagnosing the organizational culture is to formulate a clear purpose. Then—in the second stage—the researcher should identify possible factors that influence employee behavior. It is worth emphasizing that there is difficulty in assessing the relationship between organizational culture and other factors that may affect pro-environmental behavior, such as experience from employees' private lives (see Table 2). Muster and Schrader [43] state that interactions between working life (first domain) and private life (second domain) can have positive effects. The companies should implement green work–life balance practices (promoting positive influences from the first to the second domain and vice versa) in order to decrease imbalances between these two domains.

Table 2. Factors that influence the pro-environmental behavior of employees.

Authors	Factors which Encourage Pro-Environmental Behavior in the Workplace
Remmen and Lorentzen (2000)	Employee participation in environmental teams
Ramus (2001)	Supervisory support, corporate environmental culture and strategy orientation and mechanisms related to championing behavior in the context of innovations
Fernández et al. (2003)	Provision of environmental training programs
Govindarajulu and Daily (2004)	Communication and interaction processes, implementing appraisal tools or reward systems
Russo and Harrison (2005)	Direct line reporting to superiors, monetary incentives for activities
Muster and Schrader (2011)	Experience and behavior in the domain of private life
Wagner (2011)	Clearly defined responsibilities, identification and evaluation of relevant legal requirements, written environmental policy, measurable environmental goals, evaluation of the environmental efficiency
Zibarras et al. (2012)	Commitment from staff, managers' support, commitment from senior management
Harvey et al. (2013)	Where firms are committed to "greening" their operations and embed these clearly in their mission statements and strategies
Pinzone et al. (2016)	Employees believe in the value of environmental management; employees encourage their co-workers to care about environmental issues; employees willingly do additional work that can result from environmental practices
Wesselink et al. (2017)	Supervisors' behavior, sustainability policy
Yuriev et al. (2018)	Support from colleagues, employee knowledge
Kaaronen and Strelkovskii (2020)	Giving people increased opportunities to behave pro-environmentally

Own work based on [32,43–53]

The third stage is to choose an appropriate research approach. There are many different methods of diagnosing organizational culture. An important step in determining the level of PE culture is to choose the source of data for diagnosis and the method of data collection. There are primary and secondary sources. The study of organizational culture based on secondary sources consists in analyzing documents located in the company. Information for diagnosing the PE culture can come from reports, measurements of environmental performance, available instructions, procedures, etc. Secondary sources should be supplemented with primary sources. In addition, research on organizational culture can be performed using quantitative or qualitative methods [54]. The sample of respondents should be consistent with the aim of the study and the research method. It is possible

to diagnose organizational culture on both the organizational and departmental level. In the second approach, subculture is in the area of interest.

The fourth stage is conducting the research, while the last (fifth) stage of diagnosing PE culture is preparing the research report and interpreting the results obtained. These results should be communicated to research participants and decision-makers.

3. Methodology

In the second section of this paper (Table 1), the four-level concept of PE culture was presented. In order to measure the organizational level, a quantitative research approach was used. Quantitative methods provide a picture of the culture at a given moment and result in findings that allow the researcher to determine the cultural dimensions or cultural indicators.

A medium-sized manufacturing company, which operates in the automotive industry, was intentionally selected as the research object. The automotive industry is an interesting area of research because of its twofold environmental impacts—through the vehicles themselves and the functioning of factories in which vehicles are manufactured. Using cars requires a large amount of fossil fuel and remains a significant source of pollution. In turn, the process of vehicle manufacturing results in major negative environmental effects caused by the production of solid waste and the emission of volatile organic compounds as well as high energy and water consumption. In addition, end-of-life cars pollute both the soil and the aquifer [55].

The surveyed enterprise lists environmental protection among its publicly presented business principles. It underlines both drawing attention to compliance with law and taking optimization measures. However, the official declarations made by the management board do not mean that the PE culture of this company presents the highest level.

The participants in the study were 34 operational workers from the production department. This sample size meets the requirements for pilot studies (a minimum of 30) and the operationalization of a given concept—as was indicated in the introduction—requires at least a pilot empirical study to be completed. The production department is a core department in manufacturing companies, with a significant numbers of employees. The criterion for employee participation in the survey was their availability.

While using quantitative methods, it is important that the questions are properly formulated, i.e., they cannot relate to obvious or momentary opinions. Properly formulated questions lead to conclusions about hidden and underdeveloped elements of culture.

The Polish version of the Gunning Fog test resulted in using university-level language in the questionnaire. Operational workers are not highly educated. Taking these factors into account the author decided to use a household drop-off survey. The interviewer (the author of this paper) did not simply send an impersonal survey instrument but made personal contact with the respondents. The respondents were able to ask questions about the study and get clarification on what was to be done. Such a research procedure results in an increase in both the percentage of people who are willing to respond and the number of valid questionnaires.

In the process of building the survey questionnaire, different OHS culture questionnaires and survey instruments related to pro-environmental behavior were analyzed and utilized to address culture-related questions. In addition, the questionnaire included all organizational factors influencing the pro-environmental behavior listed in Table 2.

All questions (statements) were grouped into the four following categories (sections) related to the particular areas that constitute PE culture:

Section A: Company Policy and Practices (14 statements)
Section B: Responsibility for Environmental Issues (11 statements)
Section C: Communication and HRM (11 statements)
Section D: Employee Attitudes toward Environmental Issues and Employee Behaviors (16 statements)

The above-mentioned sections, along with the assigned statements, are presented in Appendix A (Table A1). The responses collected in sections A, B, C, and D allow identifying cultural artifacts as well as norms and values. Artifacts and norms/values—as indicated in the theoretical part of the article—are the two components of organizational culture, included in Schein's model, which are easier to analyze. The last category (section D) helps to partly recognize a deeper layer of PE culture, i.e., cultural assumptions.

The general information about Company Policy and Practices (Section A) is published by companies in their annual corporate social responsibility (CSR) reports. The questionnaire, however, put emphasis on more detailed practices, e.g., regarding the implementation of environmental policy. A survey focused on finding out employees' opinions allows the assessment of whether the specific organizational practices are familiar to employees.

Section B (Responsibility for Environmental Issues) included statements about formal liability and the involvement of employees in environmental matters. The questionnaire brought up, e.g., the issue of the existence of a department or a team responsible for environmental problems, management involvement, and employee empowerment.

Section C (Communication and HRM) dealt with the issue of activities undertaken as part of internal communication in an enterprise and HRM practices. It referred to diagnosing whether the practices undertaken toward employees (e.g., periodic assessments and training) aim at raising positive motivation for pro-environmental behavior.

Finally, the statements included in Section D (Employee Attitudes toward Environmental Issues and Employee Behaviors) related to individual employee opinions regarding environmental protection and unwritten rules, organizational habits, and daily behaviors, which do not have to be in line with company policy.

The respondents were given either two or three variants of answers ("Yes/I agree", "No/I don't agree", and additionally, "I don't know/Non-applicable"). In the case of questions about personal attitudes and daily work observations, the respondents had to clearly answer "Yes" or "No". In the case of the other questions, the variant "I don't know/Non-applicable" reflected an indifferent attitude of respondents toward company activities or huge problems with the company's internal communication.

All variants of answers were assigned to specific levels of PE culture. An assessment of cultural level can be derived by summarizing the answers assigned to a particular level and counting their proportion to the total number of questions (in a given section or for the culture as a whole). The research questionnaire and instruction on how to transfer answers into cultural levels are presented in Appendix A (Table A1).

The below steps had to be followed to determine the cultural level of a particular section (e.g., A: Company Policy and Practices):

- In the first step: add up the number of responses assigned to each cultural level (according to the key given in the Appendix A);
- In the second step: divide the above number by the number of respondents;
- In the third step: divide the number obtained in the second step by the number of statements assigned to a specific section (in section A there are 14 statements). The result should be expressed as a percentage.

In this way the information about the frequency of individual PE culture levels in relation to a given section was obtained. This allowed identification of the prevailing level.

Similarly, to determine the level of PE culture approached holistically, the following steps had to be completed:

- In the first step: add up the number of responses assigned to each cultural level (according to the key);
- In the second step: divide the above number by the number of respondents;

- In the third step: divide the number obtained in the second step by the number of all statements in the questionnaire (n = 52). The result should be expressed as a percentage.

In this way the information about the frequency of individual PE culture levels and which level is the prevailing one in relation to PE culture approached holistically was obtained.

4. Results and Discussion

Table 3 presents the cultural levels identified during the pilot study. As presented above, one can say that a certain level of PE culture was reached when all level-specific symptoms were identified (the frequency of a particular cultural level was 100%). The PE culture from a holistic point of view was spread out between all cultural levels. Although Level 2 was the most frequently represented one, it cannot be stated that the reactive culture was the generally prevailing one in the analyzed enterprise. Firstly, the remaining levels were characterized by a similar frequency. Secondly, the assessments of individual sections influenced the level of the entire PE culture.

Table 3. Cultural levels identified in the studied company (the frequency of each level in relation to individual sections and for the entire PE culture).

	Section A Company Policy and Practices	Section B Responsibility for Environmental Issues	Section C Communication and HRM	Section D Employee Attitudes and Employee Behaviors	PE Culture
Level 1—"zero level", "culture of high risk"	37%	71%	66%	47%	54%
Level 2—"reactive culture"	41%	71%	63%	69%	61%
Level 3—"active culture", "systematic culture"	56%	53%	67%	64%	60%
Level 4—"continuous improvement"	58%	29%	34%	51%	45%

Having considered the above, apart from analyzing the research results for PE culture treated holistically, it is worth examining whether a certain cultural level was achieved in individual sections (Figure 1). This should refer not only to the analyzed enterprise, but to each diagnosis of the organizational culture, the results of which are to be used in undertaking appropriate actions.

None of the sections reflected all the symptoms (100%) related to particular cultural levels. It is worth analyzing separately all areas (sections) constituting PE culture in order to find elements that have to be improved.

As Figure 1 and Table 3 show, in the case of Company Policy (Section A), similar cultural levels were present with a small advantage achieved by Level 4. As indicated in the Methodology section, the company under study publishes information on the activities undertaken for the benefit of the natural environment. As the respondents stated during the research process, the company included environmental concerns in its vision/mission (Level 4), as highlighted by Harvey et al. [41] on the list of factors that positively influence the pro-environmental behavior of employees. The environmental policy has been documented and the company regularly evaluates its environmental practices (Level 3-4), which is important according to Wagner [48]. However, the company's policy does not include the need of continuous improvement (Level 3). After analyzing the responses assigned to low levels of PE culture, it should be stated that employees attributed negative motivation to an enterprise, i.e., the actions undertaken in response to legal requirements (Level 2).
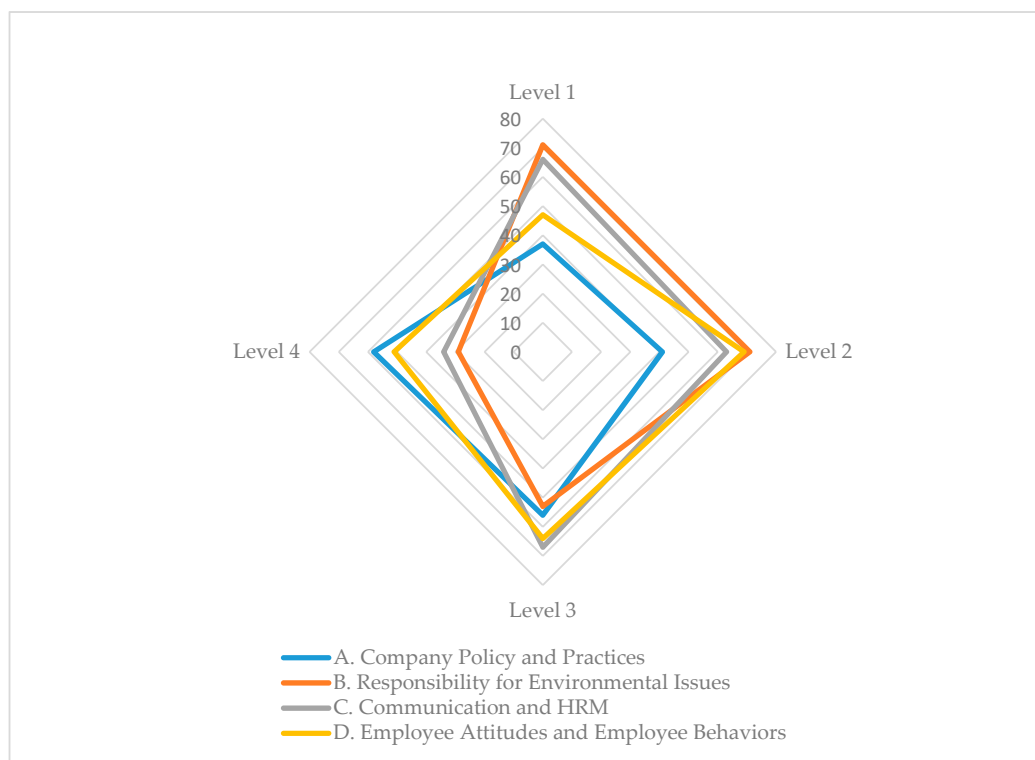
Figure 1. Visualization of PE culture levels identified in the studied company. Cultural levels' frequencies in relation to the individual sections.

Responsibility for Environmental Issues (Section B) effects mostly at Levels 1-2, because the respondents did not notice managers' engagement in environmental issues, which has been underlined by Zibarras et al. [49] and Wesselink et al. [51] as an important factor in shaping employees' pro-environmental behavior. The research participants did not feel empowered in environmental activities, while giving people increased opportunities to behave pro-environmentally is an essential driving force. Empowerment means offering people more chances to behave pro-environmentally [53]. Although—as presented above—there is a formal environmental policy (Level 3), the respondents neither knew nor stated whether any formal environmental objectives for managers, teams, and individuals existed (Level 1-2), which are important according to Wagner [48].

Similar cultural levels occurred in the case of Section C (Communication and HRM), with a slight advantage achieved by Level 2. Although environmental awareness was promoted through internal communication (as underlined by Govindarajulu and Daily [46]), the respondents stated that training, if any, was organized to the minimum extent and their involvement in environmental issues was not considered a positive factor in the context of HRM decisions. Meanwhile, Fernández et al. [32] emphasized the importance of training.

Employee Attitudes and Behaviors (Section D) presented Level 3 rather than Level 4, but the differences between all cultural levels were small. The respondents declared that they felt responsible for environmental problems (Level 3-4). However, they also stated that employees did not motivate each other toward pro-environmental behavior and did not always report environmental issues to management (underlined by Russo and Harrison [47]), which is typical for Level 1.

The examples of responses assigned to specific cultural levels are listed above. It has to be emphasized, yet again, that the organization did not fully achieve any of the defined PE culture levels. The research revealed the occurrence of symptoms characteristic for Level 1 (employee behavior), Level 2 (the nature of enterprise motivation for pro-environmental activities), Level 3 (formal environmental policy), and Level 4 (employees believe that all of them are equally responsible for environmental problems).

To increase the environmental performance connected with the environmental bottom line, it is not enough to make changes in technology. As presented in the theoretical part of this paper, it seems right to say that organizational culture is a factor of success in different company activities and that the level of PE culture determines the environmental performance of a company. Therefore, one should strive for a state when this culture is at the highest possible level (all features of this level are present).

With the above in mind, the enterprise management board—in order to increase the effectiveness of pro-environmental activities—should focus on the opinions of employees who assign PE culture to Level 1 or 2. This means, among others, the need to change the motivation type stimulating pro-environmental activities or the need to increase employees' awareness of the existing positive grounds for undertaking the analyzed activities (if motivation goes beyond the compliance with legal provisions). Due care should also be taken to formalize the environmental protection objectives and improve the quality of HRM practices. It is worth building on the positive symptoms of organizational culture, such as employees' declarations regarding their responsibility for environmental issues. These declarations can be publicly appreciated as part of ongoing internal communication activities.

5. Conclusions

The article operationalized the essence of pro-environmental culture by developing an instrument not only for diagnosis, but also for assigning PE culture to a certain level. This instrument was tested on a group of 34 operational employees.

The main limitation of this study is that the instrument was tested under the conditions of a pilot study. The results, therefore, reflect the answers given by employees from one department. The level of PE culture identified in the study can be interpreted, at most, as the level of PE subculture in that department. In order to measure the level of PE culture for the entire company, research using the novel instrument should be carried out on various groups of employees. Culture fragmentation (a number of subcultures and differences between them) is an important issue in cultural studies. Thus, a researcher should both summarize all of the answers and analyze them in cross section with the use of such criteria as department affiliation. Such a research approach will help to identify areas for improvement and increase the level of PE culture at both the organizational and departmental level. Today, many people are employed in companies based on civil-law contracts. It is important that these people—just like full-time employees—show environmental concern and actively participate in PE efforts. In multinational companies, it is also worth conducting this survey among different ethnic groups. Taking into account national cultures, it is worth mentioning that previous research indicated environmentalism to be negatively connected with individualism and positively connected with egalitarianism [56].

The instrument presented herein can be further developed and used in order to provide comparisons between different companies. However, researchers should focus on an individual industry because one important factor that may influence the level of organizational pro-environmental culture is industry macro-culture [57].

This study emphasizes conducting comprehensive research projects that will contribute to a better description, explanation, and prediction of the social processes taking place in organizations. It contributes to the development of knowledge in PE culture and related research methods in order to measure the level of this culture. It also provides useful research material for further cultural analyses meeting the postulate of methodological triangulation. Finally, this paper provides knowledge for management educators who develop students' awareness and managerial potential toward environmental issues.

Conflicts of Interest: The author declares no conflict of interest.

Appendix A

Table A1. Research instrument and detailed research results.

No.	Section	Statements Related to Pro-Environmental Culture	Variants of Responses (only one Answer per Statement)			How to Transfer Answers into Cultural Levels		
			Yes/I Agree	No/I Don't Agree	I Don't know/Non-Applicable	Cultural Level—for "Yes/I Agree"	Cultural Level—for "No/I Don't Agree"	Cultural Level—for &&&"I Don't Know/Non-Applicable"
1	A. Company Policy and Practices	Environmental concern is presented in the organization's vision/mission statement.				4	1, 2, 3	1, 2
2		Environmental rules in our company have not been documented so far.				1	2, 3, 4	1, 2
3		The organization's main environmental concern is to avoid breaking the law.				2	3, 4	1, 2
4		The company regularly evaluates its environmental practices.				3, 4	1, 2	1, 2
5		In our company, an environmental policy/system has been implemented.				3, 4	1, 2	1, 2
6		The environmental policy contains a commitment to continuous improvement.				4	3	1, 2
7		The company's environmental procedures and practices are useful and effective.				3, 4	1, 2	1, 2
8		The company's partners are required to strictly comply with environmental regulations.				4	1, 2, 3	1, 2
9		In the case of failed inspections from regulatory bodies, the emphasis is on deciding who is responsible for accidents and punishing them, without improvement or preventative action.				2	3, 4	1, 2
10		Lessons are shared with other companies.				4	1, 2, 3	1, 2
11		My company provides environmentally friendly equipment.				3, 4	1, 2	1, 2
12		My company provides all up-to-date means of protection.				4	1, 2, 3	1, 2
13		My company participates in local pro-environmental initiatives.				3, 4	1, 2	1, 2
14		My company participates in global pro-environmental initiatives.				4	1, 2, 3	1, 2
15	B. Responsibility for Environmental Issues	There is a position or department that is an expert in environmental issues.				3, 4	1, 2	1, 2
16		There is a pro-environmental committee composed of managers and employees to analyze the state of environmental issues.				4	1, 2, 3	1, 2
17		Teams of employees from different departments are established to solve specific problems related to environmental aspects.				4	1, 2, 3	1, 2
18		Solutions are often adopted based on consultation with employees or suggestions from employees.				4	1, 2, 3	1, 2
19		There is visible engagement of senior managers in environmental issues.				3, 4	1, 2	1, 2
20		There is visible engagement of line managers in environmental issues.				3, 4	1, 2	1, 2
21		Managers play the role of coach in environmental issues.				4	1, 2, 3	1, 2
22		All employees are equally involved in environmental matters (e.g., non-permanent and permanent employees, foreigners, and natives).				4	1, 2, 3	1, 2
23		All members of my company's management have formal environmental objectives to improve environmental performance.				3, 4	1, 2	1, 2
24		Employees have individual and team environmental objectives that are appraised by management.				4	1, 2, 3	1, 2
25		Employees are empowered to assist management in identifying risks and implementing environmental programs.				4	1, 2, 3	1, 2

Table A1. *Cont.*

No.	Section	Statements Related to Pro-Environmental Culture	Variants of Responses (only one Answer per Statement)			How to Transfer Answers into Cultural Levels		
			Yes/I Agree	No/I Don't Agree	I Don't know/Non-Applicable	Cultural Level—for "Yes/I Agree"	Cultural Level—for "No/I Don't Agree"	Cultural Level—for &&&"I Don't Know/Non-Applicable"
26		Environmental awareness is promoted through periodic memoranda, notice boards, newsletters, award programs, etc.				3, 4	1, 2	1, 2
27		In my company, engagement in environmental issues is considered a positive factor in the context of HRM decisions.				4	1, 2, 3	1, 2
28		The quantity of work is more important in employee assessment than pro-environmental behavior.				1, 2	3, 4	1, 2
29		Employees are positively motivated to implement policies and operating procedures.				3, 4	1, 2	1, 2
30	C. Communication and HRM	There is more training in environmental issues than just an initial one (part of employee onboarding).				4	1, 2, 3	1, 2
31		The pro-environmental training conducted in our company is interesting.				4	1, 2, 3	1, 2
32		After the pro-environmental training is completed, the employee's knowledge in this area is verified.				3, 4	1, 2	1, 2
33		Working in accordance with environmental rules means a lower salary.				1, 2	3, 4	1, 2
34		Periodically (not only after training) employees' knowledge in environmental issues is verified.				4	1, 2, 3	1, 2
35		The company uses recruitment and selection criteria that recognize the pro-environmental attitude of candidates.				4	1, 2, 3	1, 2
36		Employees are punished for inappropriate behavior in order to improve pro-environmental performance.				3, 4	1	1, 2
37		My co-workers and I discuss environmental issues on a regular basis.				4	1, 2, 3	
38		I think that only employers are responsible for taking care of the environment.				1	2, 3, 4	
39		I think that only the department specializing in environmental issues should be responsible for taking care of the environment.				1	2, 3, 4	
40		Humans have the right to modify the natural environment to suit their needs.				1	2, 3, 4	
41		Pro-environmental training is a waste of time.				1	2, 3, 4	
42		Reporting the anti-environmental behavior of co-workers amounts to snitching.				1	2, 3, 4	
43		My co-workers always use all necessary means of protection.				4	1, 2, 3	
44	D. Employee Attitudes and Employee Behaviors	I think that everyone in our company is equally responsible for the environment.				4	1, 2, 3	
45		Anti-environmental behavior at work allows me to gain the favor of my manager.				1	2, 3, 4	
46		Anti-environmental behavior at work allows me to gain the favor of my co-workers.				1	2, 3, 4	
47		Co-workers motivate each other toward pro-environmental behavior.				4	1, 2, 3	
48		Employees always report to management environmental issues which need to be reviewed and improved.				4	1, 2, 3	
49		Employees are really active in submitting ideas in order to improve the company's environmental performance.				4	1, 2, 3	1, 2
50		Employees voluntarily participate in activities related to environmental issues.				4	1, 2, 3	1, 2
51		I think that environmental accidents will always happen—no matter how hard people try to do their best.				1	2, 3, 4	
52		Employees in my company have good knowledge of the environmental regulations.				4	1, 2, 3	1, 2

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