



Effectiveness of Occupational Health and Safety Rules in Shaping Organizational Culture

Mariusz KAPUSTA ¹⁾, Marta SUKIENNIK ²⁾, Patrycja BĄK ³⁾

¹⁾ AGH University of Science and Technology, Faculty of Mining and Geoengineering; email: kapustam@agh.edu.pl

²⁾ AGH University of Science and Technology, Faculty of Mining and Geoengineering; email: marta.sukiennik@agh.edu.pl

³⁾ AGH University of Science and Technology, Faculty of Mining and Geoengineering; email: pbak@agh.edu.pl

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Abstract

The article presents the results of a survey study on the level of organizational culture in the area of occupational health and safety. Culture defined in the area of occupational health and safety is one of the components of an organizational culture; consequently, it must be appraised and responded to in order to improve the quality of the culture. The results of the study enabled the authors to draw the occupational health and safety culture net that assists in direct management of this problem and contributes to raising of the OHS level in companies.

Keywords: corporate culture, occupational health and safety, measurement of safety culture, OHS network

Introduction

The mission that managers strive to achieve in their actions is continuous improvement of occupational health and safety conditions for the workers [1]. Consequently, what appears to be necessary is a process of constant monitoring, control, and identification of new hazards aimed to improve the safety. A hazard is a phenomenon that precedes an accident or an occupational disease and takes place in a situation where the likelihood of loss of human health or life is elevated. Such situations take place when there is a possible exchange of energy between people and their surroundings whose intensity exceeds the level that can be withstood by people without negative consequences to one's health [4]. Employees may be exposed to natural, technical, and personal hazards. What appears to be the hardest to control is natural hazards, which include earthquakes, rain, storms, temperatures, wind, floods, etc. Technical hazards are associated most of all with the energy stored in technical means (machines) or released in technical processes. Those are dangerous events associated with contact between employees and machines and equipment that is in operation, live, or hot. The last category is personal hazards, which are most often associated with uncontrolled consequences of the force exerted by muscles or the weight of the body. This is the most numerous category of accidents and is associated with tripping, slips, and falls resulting in light accidents.

In this article, the authors presented the results of a survey study conducted in the area of work safety culture in companies. The surveys were conducted among post-graduate students who are employees of mining industry companies.

Effectiveness of occupational health and safety rules with respect to corporate culture

Company operations effectiveness is the basic optimization task. Lately more and more emphasis has been put in the company management area on the human factor. This is due to the growing role and contribution of employees to the effectiveness of companies. This is closely tied to the problem of organizational culture. The authors of this article have written on this topic before [1, 2, 3, 6,7,8] and in this article they want to present the results of the study that has been conducted.

Effectiveness is related to many areas in which management activities can be undertaken. Table 1 shows the relation between the need for effectiveness with the levels of organizations where individual actions can be identified.

According to the definition [5], management of effectiveness includes:

- collecting information about evaluation of products and services of a company by customers,
- evaluation of real functioning of an organization in accordance with adopted evaluation criteria resulting from adopted objectives;
- transfer of feedback about the results to the relevant areas in the organization;
- implementing corrective actions if the results are different than assumed;
- a change of the organization's objectives that will enable ongoing adaptation to the environmental conditions and the actions of the organization.

An analysis of the problem of occupational health and safety in organizations leads to the conclusion that

Tab. 1. Variables affecting the effectiveness of organizations, source: [5]

Tab. 1. Zmienne wpływające na efektywność organizacji

| Effectiveness levels | Effectiveness needs | | |
|----------------------|-------------------------|---------------------|-------------------------|
| | Objectives | Design method | Management method |
| Organization level | Organization objectives | Organization design | Organization management |
| Process level | Process objectives | Process design | Process management |
| Job level | Job objectives | Job design | Job management |

all of the aforementioned issues can and should be implemented in order to improve the effectiveness of operation of occupational health and safety rules in organizational cultures. Further in this article, the results of a survey study have been presented; their analysis and implementation of conclusions drawn from them may contribute to an improvement of the effectiveness of actions aimed to shape the organizational culture.

Methods of the study

In order to determine the level of awareness of the occupational health and safety rules in place in companies and of the impact of functioning of occupational health and safety rules in companies on the level of corporate culture, a survey study was conducted on a selected group.

Given the growing role of organizational culture in contemporary company management, the principles of occupational health and safety become particularly important. Occupational health and safety culture properly shaped and implemented in companies influences the entire organizational culture. The results of the survey may contribute to determination of the level of occupational health and safety culture with regard to the internal relationships between employees, their health and safety, and proper relations with the environment.

The survey contained fourteen close-ended questions and four basic questions that made it possible to determine the age and sex of the respondent and made it possible to determine the size and nature of the company where the respondents worked. The survey form also contained questions that identified the length of employment of the employee, which facilitated determination of the level of knowledge and awareness of the respondents.

The key questions related to the place and role of occupational health and safety rules in the corporate culture of a company were close-ended questions, scored on the scale of 1 to 7. This method of collection of information makes it possible to identify the level of knowledge of the problem by the respondents.

The survey form was filled out by a total of 100 persons with the average age of 32 years. The median age

of the respondents was 28 years. This means that the respondents are mostly persons in the early stages of their professional career and with short job experience.

Given the criterion of sex, the respondents can be divided into basically even parts. 51 respondents are men and 49 respondents are females.

An analysis of the question concerning a sense of satisfaction with the work performed (the results are shown in Chart 2) leads to the conclusion that over a half of the respondents are happy with their work, which means that both the place and the conditions of the work are acceptable to them.

The situation looks slightly worse when analyzed based on the answers given to the question about the level of knowledge about any certificates that the company may have. Over a half of the respondents have no knowledge of whether the company where they work holds any certificates.

Analysis of the results of the source studies

In order to get answers concerning the level of occupational health and safety and safety culture among employees of companies, surveys were conducted. The questions were formulated so as to be able to obtain information from a broad area covering the subject of work safety. The study methods that were adopted were aimed to obtain information concerning the safety culture in companies. For each of the studied area two questions were formulated and place in different parts of the test (to eliminate chronology). Such formulation of the survey made it possible to acquire comprehensive subjective information provided by the respondents. The use of the 1 to 7 evaluation scale was intended to force the respondents to provide a precise evaluation of individual questions. However, for the purpose of further analysis of the results, the authors made certain assumptions. Positive answers were assumed to be those with values of 5 to 7 and negative answers - those with values of 1 to 3. Answers with the value of 4 were considered to be neutral. The identified areas (risk assessment, identification of hazards, etc.) are shown in Figure 1.

In the survey that was conducted among post-grad-

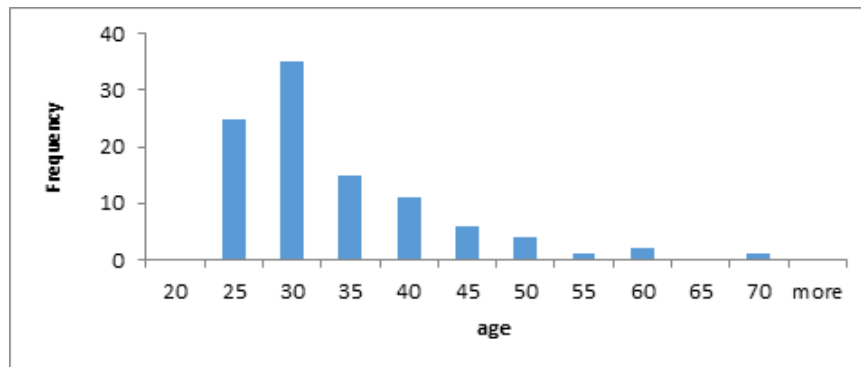


Chart 1. Distribution of the age of the respondents, source: prepared by the authors

Wykres 1. Rozkład wieku ankietowanych

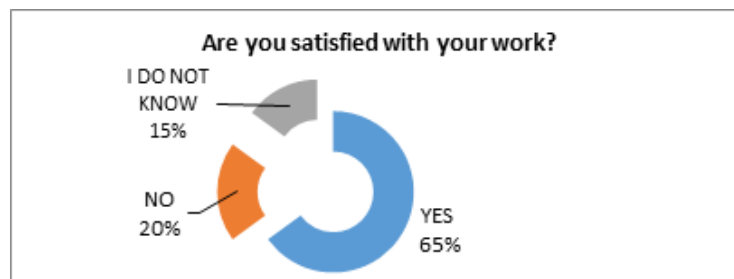


Chart 2. Results of the study concerning satisfaction with the work performed, source: prepared by the authors

Wykres 2. Wyniki badań nt. satysfakcji z wykonywanej pracy

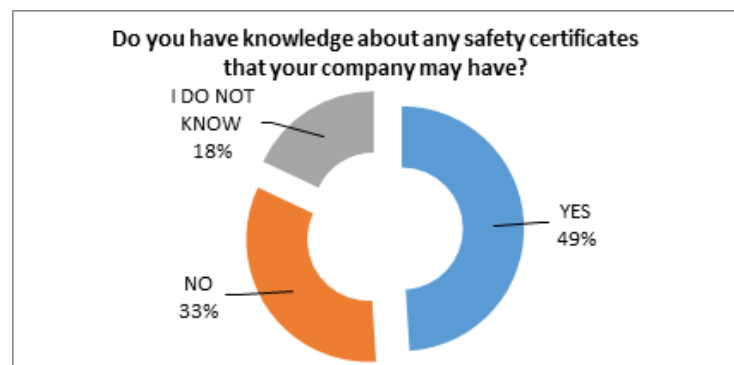


Chart 3. The results of the survey related to knowledge about certificates held by employers, source: prepared by the authors

Wykres 3. Wyniki badań nt. wiedzy o posiadanych certyfikatach przez pracodawcę

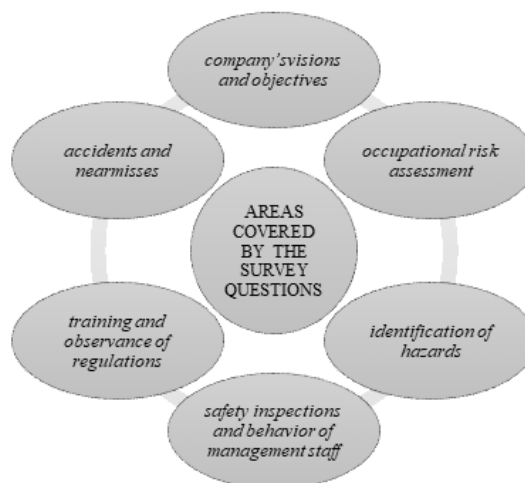


Fig. 1. Areas covered by the survey questions, source: prepared by the authors

Rys. 1. Obszary badań ankietowych

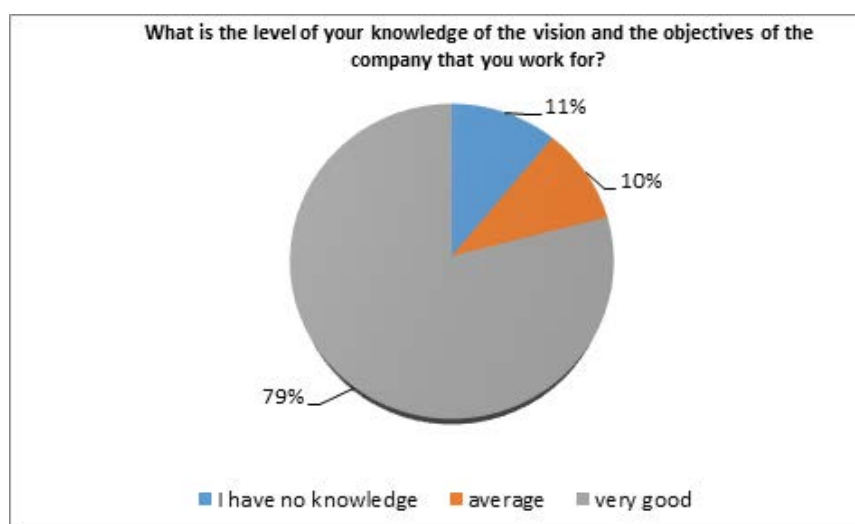


Chart 4. Company's vision and objectives, source: prepared by the authors

Wykres 4. Wizje i cele przedsiębiorstwa

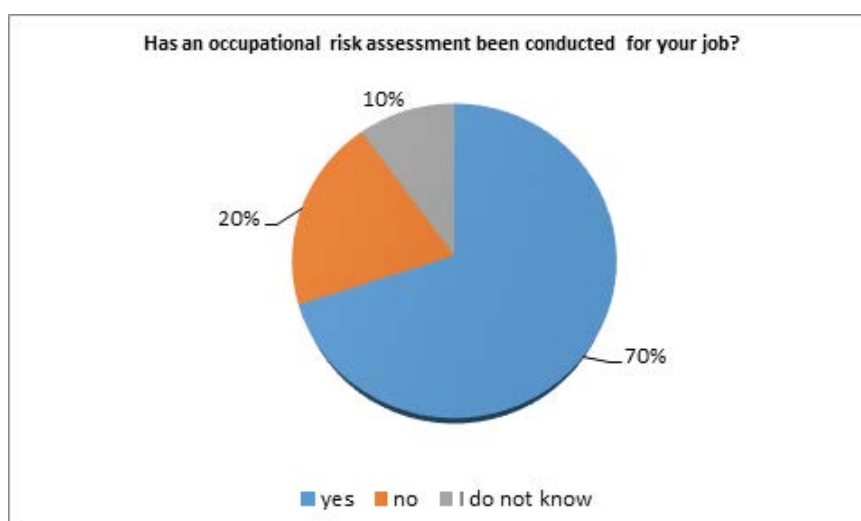


Chart 5. Occupational risk assessment in companies, source: prepared by the authors

Wykres 5. Ocena ryzyka zawodowego w przedsiębiorstwach

uate students in the field of OHS, the first question was: "Please indicate the level of your knowledge of the vision and the objectives of the company that you work for." In their subjective answers, the respondents evaluated their knowledge on a scale from 1 (I have no knowledge) to 7 (I have very good knowledge). An analysis of the results leads to the conclusion that employees know the vision and the objectives of their companies. Nearly 80% of the respondents indicated good opinions about their companies by marking scores 5, 6 or 7. Chart 4 shows, in a graphic form, the answers given by the respondents.

The second question was: "Has an occupational risk assessment been conducted for your job?" The question is related to Art. 226 of the Labor Code which requires employers to assess, document, and inform employees about the occupational risks associated with their

jobs [9]. In this case, the possible answers were "Yes," "No," and "I do not know." Even though 70% answered "Yes," as many as 20% admitted that no such assessment has been performed for their jobs. The results are shown in chart 5.

The next two questions were related to identification of hazards related to jobs and were the following: "Please indicate your perceived level of awareness concerning the hazards present in your job" and "Have you been involved in identification of hazards in your job?" Those issues are directly related to knowledge of dangerous, harmful, and onerous agents and factors that may lead to accidents or diseases, e.g. occupational diseases. In the responses to the first of those questions, 86% of the respondents stated that they were highly aware of the hazards present in their jobs. At the same time, in their responses to the second question, 61% of the respondents admitted that they did

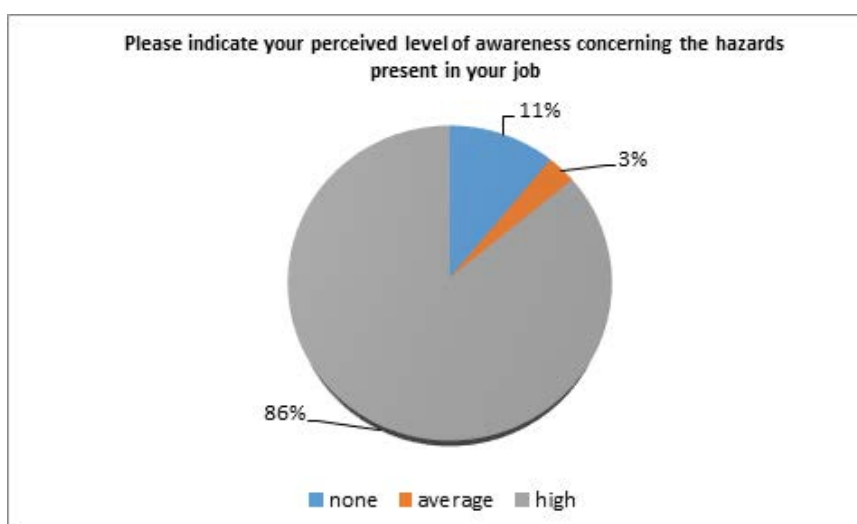


Chart 6. Identification of hazards present in jobs, source: prepared by the authors

Wykres 6. Identyfikacja zagrożeń na stanowisku pracy

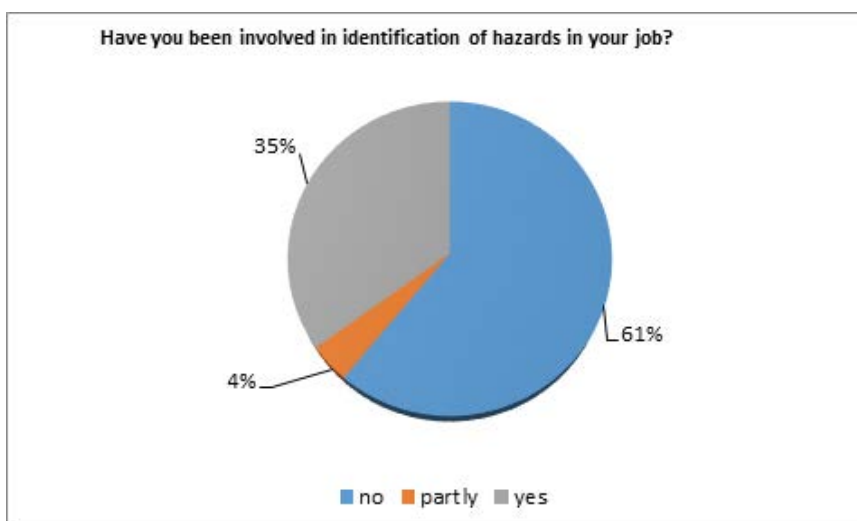


Chart 7. Involvement of employees in identification of hazards, source: prepared by the authors

Wykres 7. Udział pracowników w identyfikacji zagrożeń

not participate in identification of those hazards themselves. Charts 6 and 7 show the results of the study.

The next two questions were related to the areas of safety inspections and behavior of members of the management in relation to the occupational safety in companies. The respondents were asked: “Please indicate your opinion about the level of occupational safety inspections conducted by the company” and “Please indicate the level of involvement and participation of the management in OHS issues in the company.” 58% of the respondents stated that inspections in their companies are conducted frequently and regularly. As for the question concerning involvement of the management, the results are quite diverse. In this case, 47% saw high or full involvement of the management in OHS. The results of the study are shown in Charts 8 and 9.

Important elements of the occupational safety sys-

tem are training and observance of OHS regulations by employees. The next two survey questions were: “What is your opinion about the occupational safety talks and the level of OHS training conducted by your company?” and “What is your opinion about observance of OHS regulations by employees at work?” 51% of the respondents stated that the level of training and the issue of occupational safety are priorities in their companies. At the same time, in the opinion of the respondents, as many as 42% of employees do not follow the OHS rules and regulations at work. Charts 10 and 11 show the results.

The last area covered by the questions was related to accidents and near misses. The following questions were asked: “What is your opinion about the implementation of preventive actions and post-accident recommendations in your company?” and “What

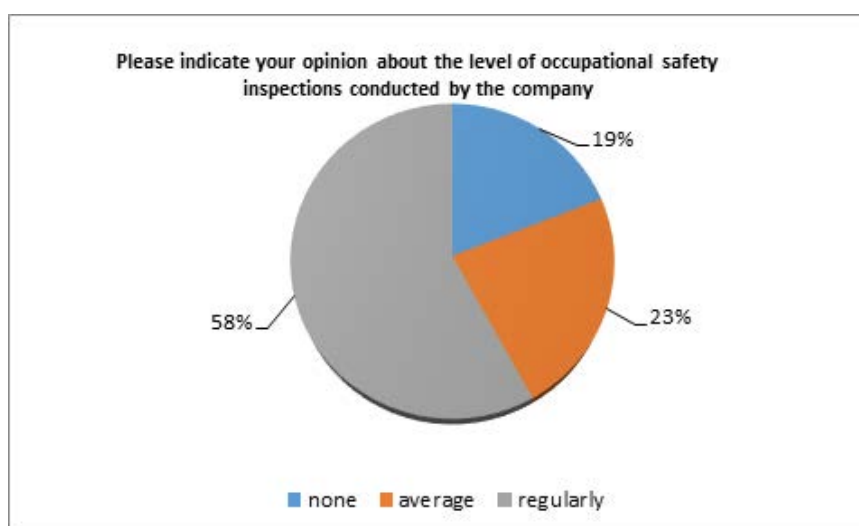


Chart 8. Safety inspections in companies, source: prepared by the authors

Wykres 8. Kontrola bezpieczeństwa w przedsiębiorstwie

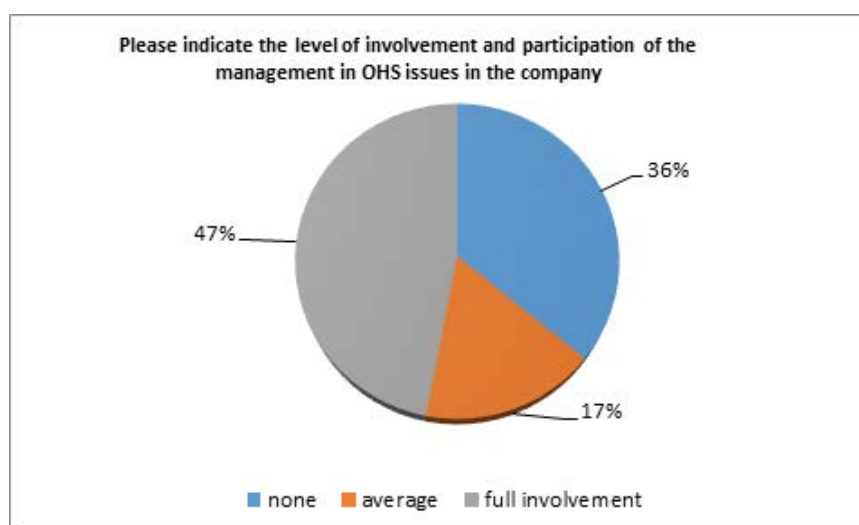


Chart 9. Involvement of the management in occupational safety, source: prepared by the authors

Wykres 9. Zaangażowanie osób kierownictwa w bezpieczeństwo pracy

is your opinion about the behavior of the members of your company's management in relation to submitted employee's comments and observations concerning OHS?" In this case, 57% of the respondents stated that preventive actions and post-accident are implemented in a very good manner. Moreover, 54% of the respondents indicated high involvement of their company's management in relation to employees' comments and observations. The results are shown in Charts 12 and 13.

Conclusions from the study

The survey study was conducted in May 2017 among post-graduate students in the field of occupational health and safety at the AGH University of Science and Technology. The respondents have university diplomas and already work as OHS staff or aspire to

work in OHS after they gain relevant qualifications. Thus, it can be assumed that their knowledge about occupational safety is good and often enriched by their vocational experiences. The authors of the article, who are lecturers in the postgraduate program, can also expect to have obtained reliable and subjective answers from the respondents. Based on the survey study that was conducted, the following conclusions can be drawn for the analyzed areas:

1. Employees have very good knowledge of the objectives and visions of their companies.
2. A high percentage of the respondents stated that vocational risk assessments have been conducted.
3. Employees know the hazards present in their jobs but do not participate in their identification themselves.
4. The level of safety inspections is considered to

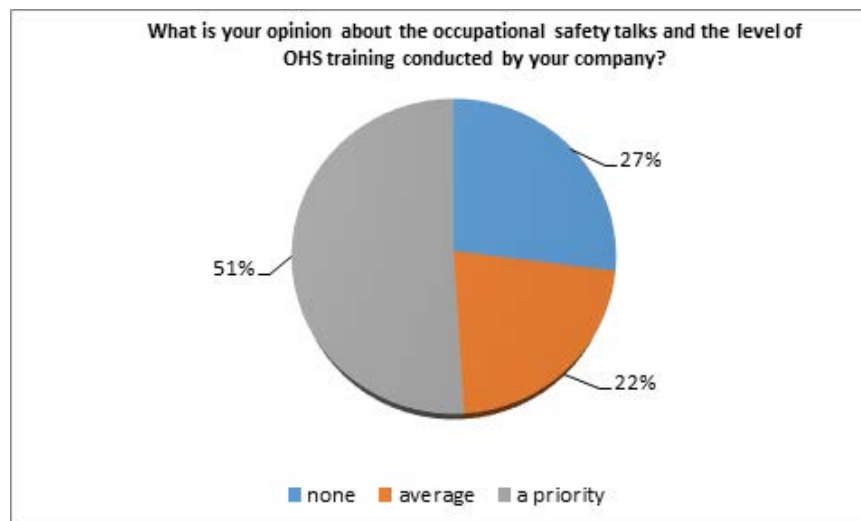


Chart 10. Level of OHS training, source: prepared by the authors

Wykres 10. Poziom szkoleń bhp

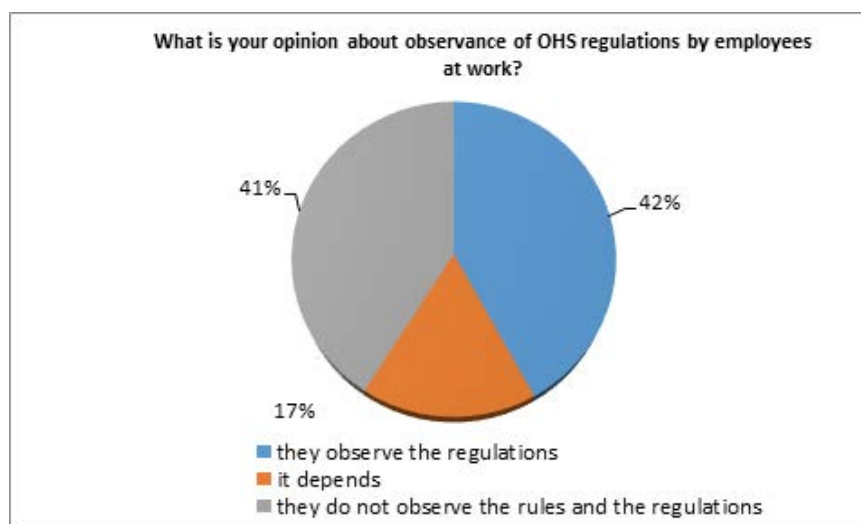


Chart 11. Observance of regulations by employees, source: prepared by the authors

Wykres 11. Przestrzeganie przepisów przez pracowników

be high but, at the same time, 36% of the respondents indicated lack of involvement on the part of the management.

5. The opinions about the level of observance of OHS regulations by employees and about the level of training are very critical.

About 30% of the respondents expressed their concern about implementation of recommendations and accident prevention, as well as about actions taken in relation to near misses.

Knowledge of the strengths and weaknesses in the different areas makes it possible to determine the actions that need to be taken. Certainly the human factor is a weak element of the system of occupational safety in companies. The lack of involvement on the part of the management and the violation of regulations by employees, which were emphasized in the study, re-

duce the level of occupational safety. Also, the forms and methods of training require more in-depth analysis in order to eliminate accidents and property losses, which will enable building a positive image of companies, among both employees and business partners.

Measurement of organizational culture

One of the most popular methods of studying the level of safety culture is the so-called safety culture net (described in more detail in [7]). The purpose of the net is to indicate the strengths and weaknesses of the safety culture in the analyzed company. Its objective is to indicate those areas where preventive steps must be taken in order to minimize negative actions and behavior.

The original net has the shape of a heptagon with the factors that determine the level of safety culture in a company located on its tips. Those factors are:

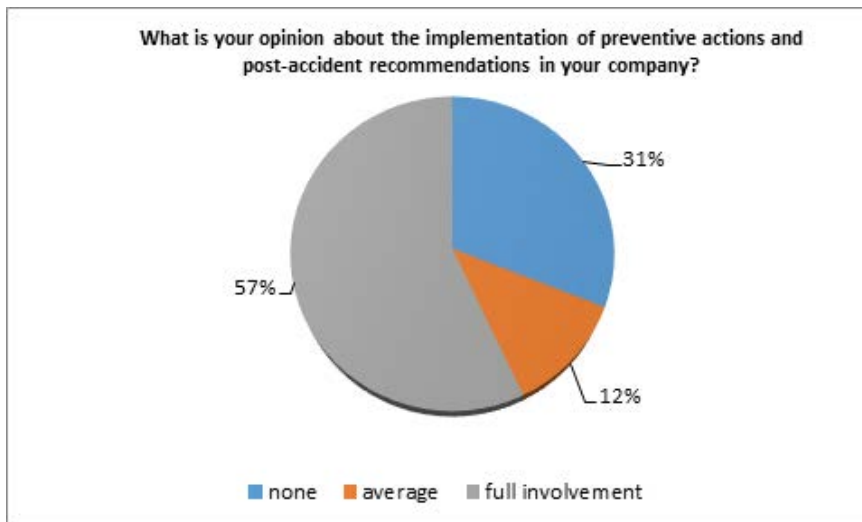


Chart 12. Implementation of accident prevention, source: prepared by the authors

Wykres 12. Realizacja profilaktyki powypadkowej

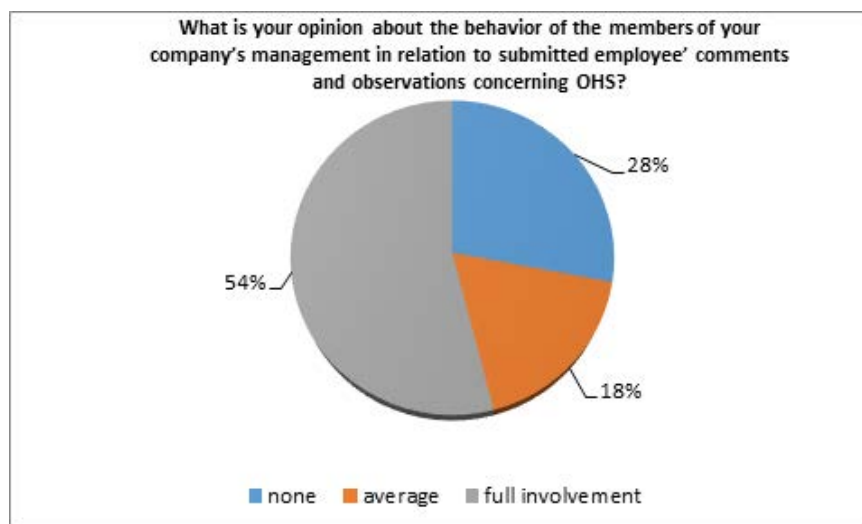
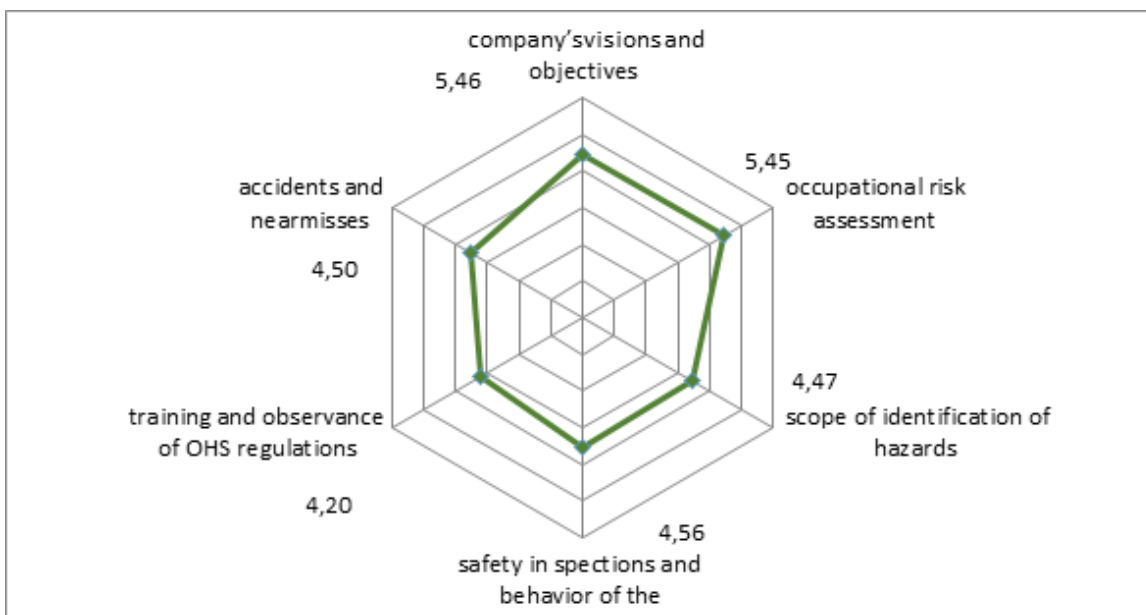


Chart 13. The management's preventive actions in relation to near misses, source: prepared by the authors

Wykres 13. Profilaktyka kierownictwa w zakresie zdarzeń potencjalnie wypadkowych



- vision and objectives;
- occupational risk analysis;
- safety inspections;
- safety talks and training;
- post-accident investigations;
- management and involvement; and
- organization and regulations.

The original elements of the net were reduced in this article and adjusted to match the objective of the study, and include only those that the authors found important from the standpoint of their analysis. Those factors are:

- company's vision and objectives;
- occupational risk assessment;
- scope of hazard identification;
- safety inspections and behavior of members of management;
- training and observance of OHS regulations; and
- accidents and near misses.

Conclusions

The results of the survey study presented in the article made it possible to identify the areas and directions of actions for companies. An analysis of the results leads to the conclusion that the weakness of companies is employee training and observance of OHS regulations by employees themselves. Moreover, what raises big concerns are actions related to reported near misses and also implementation of recommendations and accident prevention. On the other hand, the study confirmed that the strength is knowledge of objectives and visions of companies and knowledge concerning occupational risk assessment in companies.

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Efektywność funkcjonowania zasad bezpieczeństwa i higieny pracy w kształtowaniu kultury organizacji

W artykule przedstawiono wyniki badań ankietowych dotyczących badania poziomu kultury organizacji w zakresie bezpieczeństwa i higieny pracy. Kultura definiowana w zakresie bezpieczeństwa i higieny pracy jest jednym z elementów składowych kultury organizacji, zatem trzeba ją wyceniać i reagować w celu poprawy jakości kultury. Wyniki badań pozwoliły Autorom wykreślić siatkę kultury bezpieczeństwa i higieny pracy, która pomaga w bezpośrednim zarządzaniu tym zagadnieniem i przyczynia się do podnoszenia poziomu bhp w firmach.

Słowa kluczowe: kultura korporacyjna, bezpieczeństwo i higiena pracy, pomiar kultury bezpieczeństwa, siatka bhp