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WEAKNESSES REGARDING OCCUPATIONAL HEALTH AND SAFETY IN MACEDONIAN COMPANIES

Abstract: *The current situation regarding Occupational Health and Safety in Macedonian companies and institutions is not satisfying. Very often these issues are neglected by the management. There is also a lack of transparency in terms of accident reporting. Therefore, Macedonia is far behind the EU average in terms of registered injuries at works. This paper deals with some of the most frequent barriers and irregularities in this field, by analyzing the results from the survey conducted among the employees in Macedonian companies and institutions. The participants are divided into 3 groups - public entities and state administration, large companies and small and medium enterprises. The survey outcome indicates that the awareness, transparency as well as investments in this area are still not sufficient. Moreover, there is a lack of skilled and trained professionals in this field, especially in state-owned entities.*

Key words: occupational health and safety, implementation, barriers.

INTRODUCTION

The costs (economic, social and especially human) of occupational accidents, injuries and diseases as well as major industrial disasters have been a significant alarm at all hierarchy levels for a long time - from the individual workplace to the national and international level. Many measures and strategies are designed in order to prevent, control, reduce or eliminate occupational hazards and risks. They have been developed and applied continuously over the years, and in parallel with current technological and economic changes. Yet, despite continuous improvements, occupational accidents and diseases are still too frequent and their cost in terms of human suffering and economic burden continues to be a significant concern. The cost of accidents at work and occupational diseases in the EU-15 ranges from 2.6% to 3.8% of gross national product [1]. Occupational Health and Safety (OHS) is an extensive multidisciplinary field, which tackles issues related to different scientific areas such as medicine – including physiology and toxicology, ergonomics, physics and chemistry, as well as engineering, economics, law and other areas specific to various industries and activities [2]. Implementation of an Occupational Health and Safety Management System (OHS MS) is a valuable approach, but the effectiveness is influenced by a range of internal and external factors [3]. These factors include:

- inadequate resources (equipment, human resources, etc);
- lack of management commitment;
- limited mechanisms of accountability
- insufficient investments in training, protection equipment, risk evaluation, etc.;
- investments in OHS are mainly regarded as costs;
- frequent internal reorganizations.

The effective implementation of OHS MS has other benefits despite its principle role - prevention of work injuries and professional diseases. A consistent approach in terms of OHS improves the image and helps generate positive public relations (PR) for the business, improves the business efficiency, has lower maintenance costs, leads towards lower insurance premiums (since the company shows that can manage the risks), etc.

Corporate Social Responsibility (CSR) considers how a business deals with its economic, social and environmental impacts in the way it operates. OHS can play a major role in the effectiveness of these principles. The following activities have particular relevance:

- including OSH in wider corporate governance initiatives;
- ensuring OSH risks are adequately addressed by contractors and suppliers, and
- motivating other enterprises to make OSH improvements through peer pressure.

Besides the described benefits from OHS practices and systems implementation, unfortunately, a number of obstacles, barriers and even irregularities are omnipresent especially when it comes to developing countries. The causes of barriers and irregularities in this field should be addressed both on the relevant authorities' level and companies' level. These countries are facing underdeveloped technological culture, corruption, inefficient public administration and public utilities, etc. Moreover, the current situation could be described as quite resilient to change.

Hence, this paper addresses the main weaknesses, obstacles and even irregularities in the Macedonian companies regarding OHS, having into consideration

the employees' perception. It is focused on the identification of these weaknesses in terms of their origin (lack of expertise, resources, awareness, training, etc) and their disparity among the 3 types of entities (according to their ownership and size).

PROBLEM DEFINITION

Background

OHS is a legal obligation in Macedonia, encompassed with the correspondent Law as well as about 30 bylaws. European regulations and standards are transposed into the national legislation. Despite the solid legislative environment, there are difficulties in terms of a practical approach towards creating the OHS preventive culture. Moreover, the instruments for detection of the individual responsibility must be established. The reporting for the accidents at work should be more transparent and in due time. In addition, the national system for health statistics which includes the OHS should be improved in terms of reporting, monitoring and prevention. According to WHO Health for All Data Base (WHO HFA DB, 2010), [4] the rate of work injures incidence per 100 000 workers in the European region is 585.39, in the EU member states it is 916.71, while in Macedonia is only 51.03. The number of injures with fatal consequences based on the same source is as follows: European region – 1.45, EU countries – 1.14 and Macedonia – 0.1. This is an indication of the irregularities in the reporting of these issues in Macedonia. Moreover, there is a problem with the registration of occupational diseases. Namely, the register for occupational diseases in the country is not functioning at all. Failure to report is identified as one of the main problems in the country in the field of OHS [5]. One of the main reasons for underreporting is considered the no readiness of the managers to accept the responsibility for a certain event because they are concerned about the consequences from the inspection bodies. Moreover, the annual reports on fatalities should include the cause for the accident with fatal outcome (electrocution, fall, etc.) in order to target future prevention and education activities in certain industries [6].

Although the majority of Macedonian companies and institutions have implemented OHSAS 18001 and/or ISO 45001: 2018, there is still a significant lack of commitment towards these issues, which mainly arise from the company's management team. Moreover, very often OHS activities and obligations are marginalized. In some cases, the obligations of OHS professionals are underestimated as well as the criteria for OHS responsible officers' appointment. To perform their professional functions, OHS responsible officers must have proper education (engineering degree), training and corresponded practical experience [7]. Although the national OHS Law requires a bachelor's degree in engineering, very often appointed responsible officers do not satisfy the job requirements, or their educational

background is not corresponding with the core activity of the company. Based on a study from 2018, out of 711 certified OHS officers in Macedonia, only 10% are engineers in OHS [8].

The majority of OHS activities in the Macedonian companies are *pro forma* implemented, only because they are required by the Law. On the other side, there is a significant lack of preventive activities (especially in terms of education and training), risk analyses and safety improvements (investigation of the causes for the accidents and/or "near miss" situations), etc. Different patterns of companies' behaviors could be identified based on the company type and ownership. Large companies, especially foreign investments have solidly established OHS principles and standards, which are strongly integrated within their corporate culture. Small and medium enterprises (SMEs) are often facing a lack of finances for implementing certain OHS measures and activities, although they pay attention to hiring good OHS professionals. The biggest concerns in terms of barriers and irregularities in OHS implementation arise from public companies, as well as public and state administration. Political influence, corruption, nepotism and cronyism lead towards over-employment as well as employment of not suitable candidates for these posts. Very often, OHS officers are appointed workers without appropriate education, and even without working experience. Thus, OHS in such institutions is continuously neglected. When an accident or injury occurs, the management is trying to avoid reporting. In the case of irregularities that are somehow linked with the accident, they will also try to discourage the injured workers from starting a lawsuit against the company. Moreover, the lack of knowledge and awareness for detailed investigation of the causes for certain accidents creates a fertile ground for future similar safety problems and remains a long-term burden for the company. Namely, the proper conduction of such investigation could derive a new technological or engineering solution that could be not only safer but also more efficient.

Survey preparation

The above-mentioned obstacles and barriers could be summarized based on their area of origin - a source of the particular weakness. Based on this approach, Figure 1 presents the main groups of factors - sources for barriers and irregularities in terms of OHS in Macedonian companies. Some of them are related to organizations and behaviour, while others are related to engineering specifics (workplace safety). The latter is strongly related to the particular industry characteristics and requires skilled engineers in the role of OHS officers. When it comes to manufacturing industries, the implementation of health and safety principles during the product (manufactured good) design is of key importance. Thus, the elimination or control of OHS hazards is best accomplished at the machine, tool, or facility design stage. Retrofit control must be added

when a hazard exists, but it is usually more costly and less effective than control in the initial design. Nevertheless, the well-established role and responsibilities, as well as good competencies and established control procedures are present in all groups of factors and are of key importance for overcoming the barriers and irregularities in OHS.

Based on the identified factors shown in Figure 1, a questionnaire was prepared and distributed among employees in different positions and with different levels of education. The survey encompasses employees who are not directly involved in OHS activities and are employed in different companies (both in terms of type and ownership). The answering of the questionnaire was anonymous, assuming that the participants will be more honest in presenting their perception of the problems. The questionnaire was answered by 52 persons, from different types of companies and/or institutions. The persons' affiliations are the following:

- 24 from SMEs;
- 16 from large companies;
- 7 from the state administration, and
- 5 from public utilities.

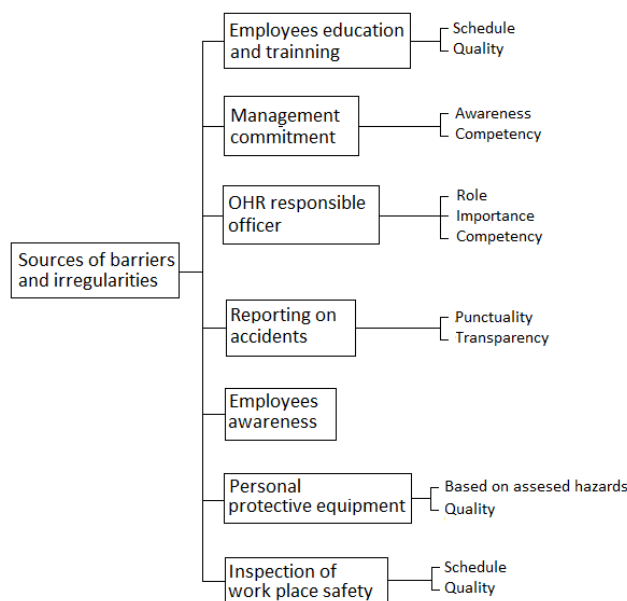


Figure 1. Main groups of factors affecting OHS in Macedonian companies

Having into consideration the ownership, the participants from state administration and public utilities (12 in total) are merged as one group of participants. The questionnaire was focused on the employees' comprehension and acquaintance in terms of their OHS rights, as well as their perception regarding implemented OHS measures and practices. Several questions were related to the educational background and skills of the OHS officers in the companies, while other sets of questions were correlated with accidents reporting, frequency of OHS audits, investigation of the accidents and "near-miss"

incidents, as well as the assessment of management commitment. The total number of questions was limited to 17 (multiple choice questions), in order to keep the focus of the participant in as much as the possible shortest time required for answering. Nevertheless, the survey was intended to encompass the relevant OHS aspects and to quantify their weaknesses in the Macedonian companies and institutions from the employees' perspective. The findings from the survey are summarized and analyzed based on the type of the company as well as on the question's topics. In accordance with that, this paper presents specific comments and conclusions on the following issues: OHS officers quality and visibility in the company (appointment, license, elected representative from the employees), employee's rights in terms of OHS (statement, personal protective equipment (PPE), education and training), management behaviour (awareness, investment in OHS, audits) and accident reporting (transparency and established practices).

RESULTS AND DISCUSSION

The results indicate that the employees have a significant lack of knowledge and information in terms of OHS and their OHS rights including the ones stipulated by the Law. The survey results in terms of responsible OHS officers are shown in Figure 2.

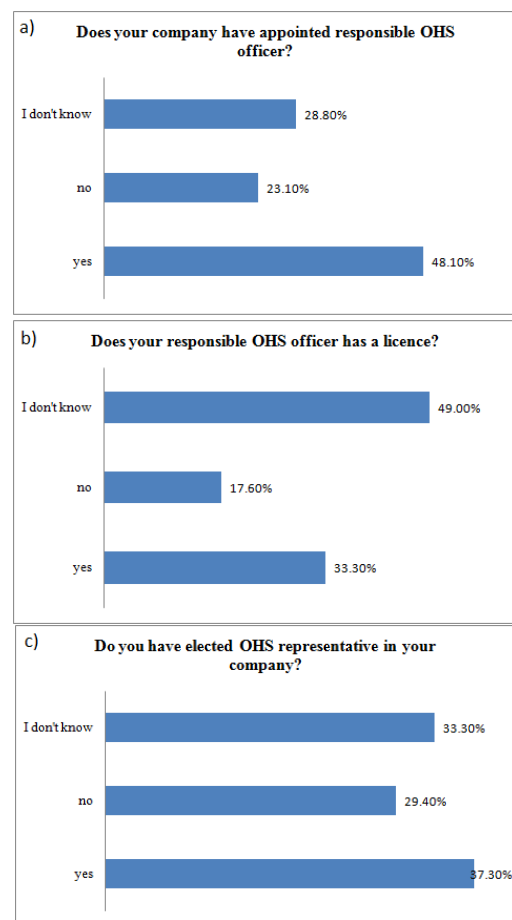


Figure 2. Survey's findings in terms of OHS officers

It indicates that the number of companies without appointed responsible OHS officers could not be neglected. Namely, 23.1% of the participants answered that their company doesn't have a responsible OHS officer, while only 33.3% of the appointed OHS officers have a licence issued by the Ministry of Labour and social policy. Thus a significant number of companies and institutions are actually on the other side of the Law when it comes to their OHS obligations, which refers to the management's ignorant behaviour. Not less concerning is the fact that the percentage of participants that are not familiar with these issues (whether a company has appointed an OHS officer and what his/her qualifications are) is quite significant. In addition, a large part of the employees doesn't know if they have elected OHS representatives (elected by the employees). Hence they are not familiar with their rights stipulated by the OHS Law. Moreover, the results indicate that the recruiting process in this area is faced with serious challenges, especially when it comes to state-owned companies and institutions. Namely, even 27% of state-owned and public companies are without responsible OHS officers, while only 6% of large companies failed to comply with this obligation.

Figure 3 deals with the training and education weaknesses as well as the availability of the required PPE.

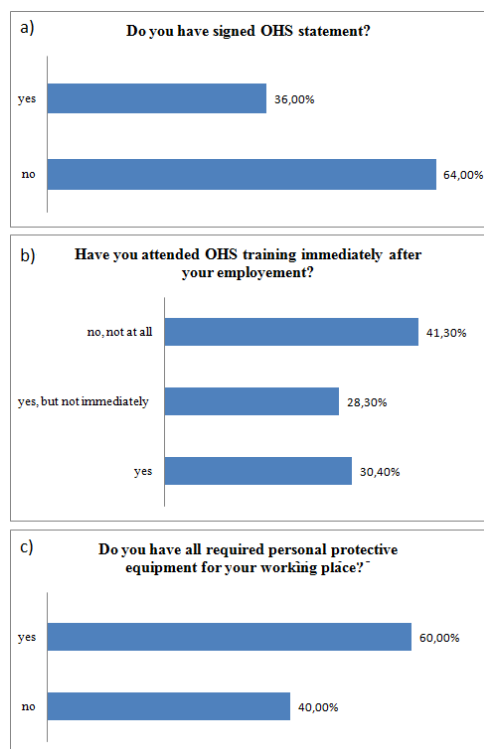


Figure 3. Results regarding OHS training and education

OHS training and education is a crucial element in creating OHS culture and awareness. OHS training is a legal obligation, and it must be realized every 3 years. However, the fact that 64% of the survey's participants

don't have signed OHS statements is quite concerning. As per Figure 3, it could be also noticed that a large majority of the participants don't have signed an OHS statement, which is a legal obligation and its absence is very serious irregularity. Once again, it is confirmed that the situation is the worst in public and state entities, where are located 83.4% of the participants without an OHS statement, while in the large companies there is only a small number of participants without it. When it comes to OHS training, there is a significant share of participants who didn't have OHS training at all. The majority of them come from public and state institutions (56.3%), while only 12.5% from large companies. In terms of PPE availability, 40% of the participants are facing a lack of PPE. The situation is the most concerning in SMEs, where almost 1/3 of the participants come without the required PPE. Surprisingly, that share is the lowest among public and state entities. On the other side, this fact could indicate a situation of oversupply and misuse of public funding for unnecessary procurement in public and state-owned entities.

Figure 4 presents the survey outcome in terms of management awareness, investments in OHS and frequency of performed OHS internal audits.

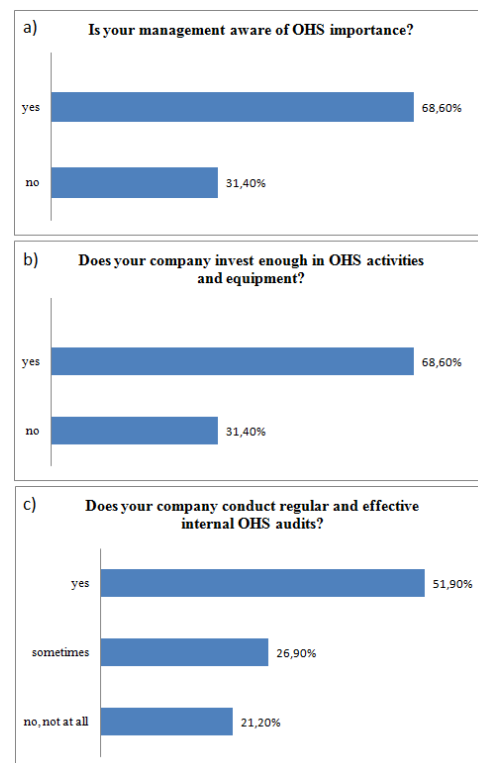


Figure 4. Survey's findings regarding management awareness and commitment for OHS

The majority of participants consider that their management is aware of OHS issues' importance (68.6%), and think that their company invests enough in OHS. As per the OHS audits, the situation is more concerning. Only half of the participants (51.9%) confirm that their company performs internal OHS

audits on a regular basis, while 21,2% of the companies have never conducted it. Among the companies that have never conducted an internal OHS audit, the most numerous are public and state-owned, while this number is the lowest when it comes to large companies. Thus, the large companies which are mainly part of the multinational corporations (foreign investments) have established solid OHS practices especially when it comes to recruitment of OHS officers, providing regular employee training and education as well as their attention on fulfillment of the legally binding obligations in terms of OHS statements. On a contrary, these issues are quite neglected in state-owned entities, where there is significant political influence over the employment process. Besides the aforementioned, Figure 4 shows that the management's awareness of the importance of OHS should be improved, and additional investments in these issues are required. The system of regular and effective internal OHS audits is often not established, and the corresponding strengthening of the capacity is required, in particular for public and state-owned entities.

Last but not the least, Figure 5 is presented the current situation in terms of transparency and punctuality regarding accident reporting.

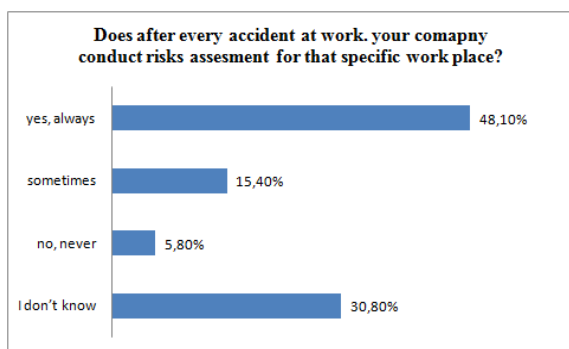


Figure 5. Survey's findings regarding accident reporting

According to Figure 5, only one-half of the answers confirm that after each accident a comprehensive risk assessment for that specific work is a regular procedure. It is rather surprising to note that even 25% of the participants from public and state entities said that such an assessment had never been performed. On a contrary, none of the participants from SMEs and large companies alleged such behaviour. Since the accident reporting has already been pointed as one of the main weaknesses of OHS in Macedonia, the straightening of the institutional capacities (in particular State Labour Inspectorate) and more severe penalties for the managers and other responsible persons could lead towards improvement of this situation.

The overall survey results show that the major weaknesses could be located in internal and effective internal audits and regular and proper conducting of the accident investigation causes including risk assessment

of the workplace. Training and education must not be neglected. Such an approach could foster improvements in safety and efficiency aspects and will contribute to lower maintenance and insurance costs on a long-term basis.

CONCLUSION

This paper addresses some of the main weaknesses, barriers and irregularities in terms of OHS in Macedonian companies and institutions. Hence, it could be noted that raising awareness both regarding employees and the management is quite important. Regular training as well as solid human resources policy when it comes to OHS officers' appointments is also quite significant. OHS issues are particularly neglected in state and public companies. Moreover, regular inspection in terms of risk reduction and elimination of possible sources for accidents and injuries is also one of the fields that must be improved. The overall results from the conducted survey refer to the large companies as the most aware and organized in terms of OHS, while state and public companies are the least aware. The latter is an advantage only in terms of PPE procurement. For this reason, focused and coordinated actions are necessary in order to overcome such obstacles. Moreover, in a lot of cases it doesn't require additional financial resources, but a good organization, awareness and commitment for OHS issues. Hence, the improvements in OHS systems in Macedonian companies and institutions could be done via the establishment of solid criteria for OHS officers appointments (especially in state-owned entities), development of good engineering and safety skills using continuous training and education, regular and optimal budget allocation for PPE as well as regular inspection of working places and tools in order to prevent hazards. Moreover, the inspection of the machines and the closest working environment after every accident and/or "near miss" is very important for the prevention of future similar events. This aspect is quite neglected and requires significant efforts for its proper implementation. One of the main preconditions is the solid engineering knowledge of the OHS officers gained through formal education and years of practice experience. On the other side, the employment awareness for their rights in terms of OHS should be improved by means of training and lectures, public campaigns, etc. Only through a comprehensive approach and involvement of all stakeholders, will the weaknesses in OHS in Macedonian society be conquered, and the country statistics on work-related injuries and fatalities be at the same time transparent, prompt and corresponding to the reality. Needless to say, the common interest is that these numbers are as lowest as possible; however, they must be real.

ABBREVIATIONS AND ACRONYMS

EU	European Union
OHS	Occupational Health and Safety
WHO	World Health Organization
OHSAS	Occupational Health and Safety Assessment Series
SMEs	Small and Medium Enterprises
PPE	Personal Protective Equipment

REFERENCES

- [1] <https://osha.europa.eu/en/publications/factsheet-77-business-benefits-good-occupational-safety-and-health>. (accessed on 02.03.2021)
- [2] B. O. Alli: "Fundamental principles of occupational health and safety, second edition", International Labour Office, 2008, Geneva.
- [3] C. Gallagher, E. Underhill, M. Rimmer: "Occupational Health and Safety Management Systems: A review of their Effectiveness in Securing Healthy and Safe Workplaces", National Occupational Health and Safety Commission, 2002, Sydney.
- [4] <https://gateway.euro.who.int/en/datasets/european-health-for-all-database/> (accessed on 04.03.2021)
- [5] D. Ivanov, D. Stanoeski, T. Velkovski, J. Čalovska, Lj. Dudeski: "Systems for electronic keeping records in the field of safety and health at work", International Conference for Regional Collaboration OSH BON TON Proceedings, Vol. 1, 2015, pp. 117-123.
- [6] Annual report for accidents at work 2019, Macedonian Occupational Safety and Health Association, 2020, Skopje.
- [7] M. A. Friend, J. P. Kohn: "Fundamentals of Occupational Health and Safety, seventh edition", Berman Press, 2018, Maryland, USA.
- [8] T. Velkovski: "Occupational Health and Safety, Study Macedonia", Macedonian association for occupational health and safety, 2018, Skopje.

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PROCENA PROBLEMA U VEZI SA PRIMENOM BEZBEDNOSTI I ZDRAVLJA NA RADU U MAKEDONSKIM KOMPANIJAMA

Daniela Mladenovska, Iliana Dubravac

Rezime: Trenutna situacija u vezi sa bezbednošću i zdravljem na radu u makedonskim kompanijama i institucijama nije zadovoljavajuća. Menadžment vrlo često zapostavlja ova pitanja. Takođe nedostaje i transparentnost u pogledu izveštavanja o nezgodama. Zbog ovoga, Makedonija je daleko iza proseka EU u pogledu registrovanih povreda na radu. Ovaj rad se bavi nekim od najčešćih prepreka i nepravilnosti u ovoj oblasti, analizirajući rezultate ankete koja se odnosi na ova pitanja sprovedene u makedonskim kompanijama i institucijama. Rezultati pokazuju da svest, transparentnost, kao i ulaganja u ovu oblast još uvek nisu dovoljni.

Ključne reči: bezbednost i zdravlje na radu, primena, barijere.