

SNEŽANA ŽIVKOVIĆ¹
JOSIP TARADI²

¹University of Niš, Faculty of
Occupational Safety in Niš

²University College of Applied
Sciences in Safety, accredited,
Zagreb

¹snezana.zivkovic@znrfak.ni.ac.rs
²josip.taradi@vss.hr

COMPARATIVE ANALYSIS OF THE ORGANISATION OF WORK OF OCCUPATIONAL SAFETY PROFESSIONALS IN BUSINESS ORGANISATIONS IN SERBIA AND CROATIA

Abstract: *A comparative analysis of the results obtained through empirical research into the work of occupational safety professionals in business organisations in Serbia and Croatia has determined the current insights and comparative values of the circumstances of the organisation of work of occupational safety professionals in Serbia and Croatia. The research results and their comparison have shown that out of 10 determined comparison aspects, only three show no significant difference (higher than 5%), while in 7 aspects the difference is significant (higher than 5%). According to this, there are significant differences in the circumstances of the organisation of work of occupational safety professionals in business organisations in Serbia and Croatia. However, despite the differences, there are identical trends in both countries.*

Key words: organisation, occupational safety expert, occupational safety

INTRODUCTION

Safety at work, according to Kacian [4] is “the state which enables a normal flow of business processes and functioning of business systems and thereby better business results”, and factors which affect safety at work are human, social and economic. Safety at work is achieved through the implementation of occupational safety measures and regulations.

According to Žugaj [10] “occupational health and safety is a set of professional and scientific methods, measures and procedures with an aim of protecting workers from various causal factors that emerge in the process of work, and the consequence of which is the creation of safe working conditions. Occupational health and safety is also an applied science of mutual adaptation of man and work as a part of the production process or other form of activity, for the purpose of human protection.” The causes of injuries at work and other medical impairments are divided into four groups of factors: 1) personal factors, 2) work organisation factors, 3) factors of production processes and working environment and 4) sociological factors. Occupational health and safety is a part of the organisation of production functions as a part of business processes and business functions.

The role of occupational safety and health is determined by its goal and the range of rights and obligations of employers and workers. The aim is, in conformity with law and other regulations in the field, to achieve the highest level of health and psychophysical protection. In this sense, the working conditions, means and work organisation have to be adapted to the needs of workers, and at the same time,

workers have to be motivated for an active involvement in all activities [7].

Organisational sciences are largely in the function of contribution to the safety at work. “The connection between organisational design and organisational development and safety at work” is specially emphasised by Bourrier as well [1].

For a continued improvement of safety at work in a business system, it is especially important to organise occupational safety systematically and efficiently. This is also emphasised by Petersen in his “systematic approach to safety management”, joining scientific methods and management techniques into “safety management techniques” [5].

On the principles and functions of the contemporary management of business systems and the process approach to management, along with legal demands regarding occupational safety, it is possible to set a general theoretical model of the process of organising occupational safety in a business system. The model can contribute to the improvement of the safety at work system within a business system, and thereby to the successfulness of the entire business system by creating organisational preconditions for a permanent organisational development of occupational safety in a business system. [6].

Basic legal demands for the organisation of work of occupational safety professionals in business organisations are made by basic acts in the field of occupational safety. In Serbia it is the *Occupational Health and Safety Act (Zakon o bezbednosti i zdravlju na radu*- “Official Gazette“ of the Republic of Serbia 101/05),

and in Croatia the *Occupational Health and Safety Act (Zakon o zaštiti na radu* – Official Gazette of the Republic of Croatia 59/96, 94/96, 114/03, 100/04, 86/08, 116/08, 75/09). The comparison of these legal demands of the two countries shows a high similarity and alignment level.

The conducted empirical research in Croatia [2,3], and the same model research in Serbia [8] have given insights about the circumstances of the work of occupational safety professionals, and about specific organisational aspects of the work of occupational safety professionals. A preliminary comparative analysis of the research of the circumstances of the work of an independent occupational safety professional in Serbia and Croatia [9] offers the first insights that are the result of the comparison between the two countries on a broad level of the entire problem area of the work of occupational safety professionals.

METHODOLOGY

Problem

The lack of insights into comparative values of the circumstances of the organisation of the work of occupational safety professionals in business organisations in Serbia and Croatia.

Objective

To gain current insights and comparative values of the organisation of the work of occupational safety professionals in business organisations in Serbia and Croatia by means of a comparative analysis of the results of empirical research into the circumstances of the work of occupational safety professionals in business organisations in Serbia and Croatia.

Hypothesis

A general positive hypothesis is set:

H1: According to all researched, determined and compared aspects of the organisation of the work of occupational safety professionals in business organisations in Serbia and Croatia, there is no significant difference (higher than 5%), therefore the current problems and the state in the organisation of the work of occupational safety professionals in business organisations in both countries are the same.

Methods

Individual empirical researches into the problem area of the work of occupational safety professionals in business organisations in Serbia and Croatia were conducted by a survey. The survey is descriptive and analytical, done in writing, voluntary and completely anonymous for respondents. The survey required subjective opinions and grades by occupational safety professionals, or in case if there was no such expert, the respondent was a person in charge of occupational safety activities in a business organisation.

As the survey instrument, a written questionnaire was used and delivered to the respondents by mail. It contains 93 questions overall, and they are usually close-ended so that a respondent chooses one answer or grade between the ones offered, and in certain questions s/he can choose more than one answer or write down an additional answer. The organisation of work of occupational safety professionals form a special part in the content of the questionnaire and it comprises 8 questions.

Statistical methods were used for the statistical analysis of data collected through the survey by means of the questionnaire. The methods of descriptive statistics were used, as well as the methods of inferential (analytical) statistics that allow making conclusions about the entire population based on the sample data.

By the method of comparative analysis, a comparison of results of the research in the field of the organisation of the work of occupational professionals in business organisations in Serbia and Croatia was made, along with the textual and tabular review of the key results.

Data on the research conduct

At the beginning of 2011 in Serbia a research called “Research into the circumstances of the work of occupational health and safety professionals in business companies in Serbia” [8] was conducted. The sample comprised 1623 respondents and, after eliminating the irregular ones, the further analysis included 1075 respondents or 66,19 % of the initial sample of respondents.

Late in 2009 in Croatia the “Research into the circumstances of the work of independent occupational safety professionals in mid-sized business organisations in Croatia” [2] was carried out. Out of the overall number of respondents (2.326), a completed questionnaire was returned by 360 respondents, which makes 15, 48 % of the initial group (since the entire initial group was included in the research without sampling).

The representativeness of the research sample size was tested by the calculation of the size of a simple random sample. The used respondent sample can be deemed representative not only by its size, but also by its other significant characteristics regarding the objective of the research, which has been proven in the analysis of the basic data on the respondents’ business organisations.

RESULTS

Number of employed occupational safety professionals in a business organisation

Serbia

Most companies (58,51%) employ one person – a person in charge of occupational health and safety, but a significant fact is that 22,79% of companies do not have a person in charge of occupational health and safety.

Croatia

A great majority (72,19 %) of business organisations have one employed occupational safety professional, and 21,60% of business organisations do not have an occupational safety professional.

Professional assessment of the overall number of employed occupational safety professionals in a business organisation

Serbia

According to the professional assessment, the number of employed professionals on occupational health and safety is considered optimal (71,35%) regarding the number of the employed, the state of safety at work and the degree of danger. It is significant that 21,02 % believes that the number of professionals is too low, and a minor percentage of 1,21% thinks that the number of professionals is too high.

Croatia

According to the professional assessment made by the respondents, in a great majority (76,92 %) of business organisations the number of employed occupational safety professionals is optimal, regarding the number of the employed, the state of safety at work and the degree of danger. 15,68% finds the number too small, and a negligible percentage of 0,30% of respondents think that the number of employed occupational safety professionals is too high.

Time period from the organisation of the work of occupational safety professionals in a business organisation

Serbia

According to the time period from the organisation of work of occupational health and safety professional in a company, those from one to three years are in a majority (24,65 %), but a significant information is that they are closely followed by companies where there is no organisation of this kind of work (20,19%).

Croatia

According to the time period from the organisation of work of an independent occupational safety professional in a business organisation those from 6 to 10 years (23,67%) are in a majority. They are followed by those from 1 to 3 years (17,16%) and from 4 to 5 years (13,61%). The activities of an independent occupational safety expert are not organised in 8,88% of business organisations, and 8,58% of respondents did not answer.

Type of employment contract of occupational safety professionals with the employer

Serbia

A great majority (71,07%) of companies employ occupational health and safety professionals who have permanent employment contracts, while fixed-term

contracts are present in 8,74% of companies. 12,74 % of companies have signed employment contracts with their safety professionals for less than 8 working hours a day (employment contracts with several employers), and 7,44 % did not answer.

Croatia

More than three quarters (75,74 %) of occupational safety professionals have signed a permanent employment contract, and only 4,44% of them have signed a fixed-term employment contract. A significant percentage of 7,10% has an employment contract for less than 8 working hours a day (employment contracts with several employers), and 12,72 % did not answer.

The mode of employment of occupational safety professionals

Serbia

A great majority of respondents (37,95%) got their job by applying through a vacancy announcement. Nevertheless, it should be noticed that 27,26% of them were employed through the reorganisation of companies, and 11,81% through an internal vacancy announcement.

Croatia

One quarter (26,63%) of occupational safety professionals were employed by applying through a vacancy announcement. Almost half of respondents (48,22 %) got their job through the reorganisation of positions in a business organisation, and 7,10% through an internal vacancy announcement.

Organisational position of occupational safety professionals in a business organisation

Serbia

It is optimistic that a huge majority (62,79%) of occupational health and safety professionals are at the highest organisational level which means that they are directly responsible to the management board. 24,09% of them are at the middle level, and 5,02 % are at the lowest level.

Croatia

The fact that most occupational safety professionals (69,23 %) are at the highest organisational position where they are directly responsible to the management board is most certainly optimistic. 16,57% of occupational safety professionals are positioned at the middle management level, and only 2,96 % are at the lowest level.

Range of activities of occupational safety professionals in the field of occupational safety

Serbia

Most occupational health and safety professionals (52,28 %) do only the work that requires no special authorisation. Among activities that need a special

authorisation the most common are the danger evaluation for the needs of the employer (29,67%) and safe work training to serve the needs of employers based on the authorisation (28,65 %), and this is followed by machine and appliance testing that involves a higher degree of danger for the needs of the employer based on the authorisation (9,12 %).

Croatia

Most (59,76 %) occupational safety professionals do only the activities related to safety at work that need no special authorisation. Occupational safety professionals who perform safety activities that need special authorisation mostly (26,33 %) perform the activities related to safe work training for the needs of employer based on the authorisation, and this is followed by (9,17%) activities related to the danger evaluation for the needs of the employer based on the authorisation.

The range of activities of occupational safety professionals in a broad field of safety

Serbia

The percentage of 30,51 % of occupational safety professionals do only the activities related to the occupational health and safety. Nevertheless, 20,74 % of them perform the activities related to fire protection and environmental protection. 19,44% do the activities from the area of fire protection along with the activities related to occupational health and safety, and 16,37 % do other activities as well.

Croatia

Only 7,10 % of occupational safety professionals perform only the activities related to occupational safety. The combination of activities of three safety areas (safety at work, fire protection and environmental protection) is performed by 28,40% of occupational safety professionals. Most of them (35,50 %), apart from safety at work activities, performs other activities among which the most common are: administration, purchasing, technical maintenance, prevention, civil protection, quality, security, human resource activities, construction site management, etc.

DISCUSSION

For the discussion of the results of the comparative analysis of the organisation of the work of occupational safety professionals in business organisations in Serbia and Croatia a review table has been made (Table 1.)

Table 1. Comparison of the aspects of organisation of the work of occupational health and safety professionals in business organisations in Serbia and Croatia

Aspects of the organisation of the work of OS professionals	Serbia	Croatia	Comparison (difference S:C)
At least one employed OS expert	58,51 %	72,19 %	-13,68 %

No employed OS professionals	22,79 %	21,60 %	+1,19 %
Professional assessment - optimal number of employed OS professionals	71,35 %	76,92 %	-5,57 %
Professional assessment – number of employed OS professionals is too low	21,02 %	15,68 %	+5,34 %
Time period from 1 to 3 years from the organisation of the work of OS professionals	24,65 %	17,16 %	+7,49 %
OS professionals with a permanent employment contract	71,07 %	75,74 %	-4,67 %
Employment of OS professionals through vacancy announcements	37,95 %	26,63 %	+11,32 %
Organisational position of OS professionals at the highest organisational level	62,79 %	62,93 %	-0,14 %
OS professional performs only OS activities without special authorisations	52,28 %	59,76 %	-7,48 %
OS performs only OS activities, without activities from other fields of safety and other activities.	30,51 %	7,10 %	+23,41 %

In three aspects of the organisation of work of occupational safety professionals in business organisations in Serbia and Croatia there are relative similarities (the relative difference is less than 5%), and these are:

- Organisational position of occupational safety experts at the highest organisational level. (-0,14 %)
- No employed occupational safety professional in a business organisation. (+1,19 %)
- Occupational safety professionals with a permanent employment contract. (-4,67 %)

The fact that occupational safety professionals have mostly succeeded in obtaining the highest organisational position where they are responsible directly to the management board and for the permanent employment contract is a good guarantee for a long-term development of occupational safety management in business organisations in Serbia and Croatia. This is, at the same time, the basis of the need for permanent training and learning for occupational safety management.

In most organisational aspects, seven of them, relative differences between Serbia and Croatia are higher than 5 %. In the following three aspects they are higher than 10 %:

- Occupational safety professional performs activities related to occupational safety only, and does not perform the activities from other areas of safety and other activities. (+23,41 %)
- At least one employed occupational safety professional in a business organisation. (-13,68 %)
- Employment of OS professionals through vacancy announcements. (+11,32 %)

The fact that Croatia (7,10 %), in comparison with Serbia (30,51 %), has a drastically lower number (+23,41 %) of professionals who perform occupational safety activities only, without other activities, leads to discussion and a possible explanation according to which the process of the privatisation of business organisations in Croatia had been implemented faster, with the integration of safety activities as a consequence, performed most usually by one occupational safety expert. In Serbia significantly more (+11,32 %) occupational safety professionals than in Croatia have been employed by applying through a vacancy announcement. A possible explanation could be the fact that in Croatia more safety engineers still attend safety colleges as part-time students studying and working at the same time because they are already employed, and a college degree means professional promotion in the organisation of employment.

CONCLUSION

Based on the identified research problem, using the scientific method of empirical survey research into business practice and the comparison of the research results, which proved to be appropriate, the set objective of the research has been accomplished.

The comparative analysis of the results of the empirical research into the circumstances of the work of occupational safety professionals in business organisations in Serbia and Croatia resulted in current insights and comparative values of the circumstances of

the organisation of work of occupational safety professionals in business organisations in Serbia and Croatia.

The reached objective of the research is reflected in the acceptance or the rejection of the set research hypothesis:

H1: According to all researched, determined and compared aspects of the organisation of the work of occupational safety professionals in business organisations in Serbia and Croatia, there is no significant difference (higher than 5%), so the current insights and the state in the organisation of the work of occupational safety professionals in business organisations in both countries is the same.

The hypothesis is rejected.

The results of the research and their comparison show that out of 10 determined aspects of the comparison of the organisation of work of occupational safety professionals in business organisations in Serbia and Croatia, only three do not show a significant difference (less than 5%), while in 7 aspects the difference is significant (higher than 5%). Therefore, it can be concluded that there are significant differences between Serbia and Croatia when it comes to the organisation of the work of occupational safety professionals in business organisations. Nevertheless, it should be emphasised that despite the differences, there are some identical trends.

The greatest similarity (relative difference of only -0,14 %) in the state in the organisation of the work of occupational safety professionals in business organisations in Serbia and Croatia is in the organisational position of occupational safety professionals, who are at the highest organisational level where they are responsible directly to the management board. This is an optimistic insight which confirms occupational safety professionals in both Serbia and Croatia as good occupational safety managers.

The greatest difference (relative difference +23,41 %) is in the possibility for an occupational safety expert to perform only activities from the field of occupational safety, without performing activities from other safety fields, as well as various other activities at the same time.

The results of the comparative analysis indicate the need for detail comparative analyses of other areas of the work of occupational safety professionals, and make a good basis for the continuation of similar researches on the international level.

REFERENCES

- [1] Bourrier, M.: "The Contribution of Organizational Design to Safety", *European Management Journal*, Vol. XXIII, 2005, 1, 98-104.
- [2] Božajić, I., Cmrečnjak, D., Drozdek, A., Filipović, A. M., Hunjak, D., Koren, T., Minga, I., Palačić, D., Petričević,

N., Taradi, J., red., Žarak, M.: "Stručnjak za zaštitu na radu, istraživanje problematike rada samostalnog stručnjaka za zaštitu na radu u srednje velikim poslovnim organizacijama u Hrvatskoj", Hrvatsko društvo inženjera sigurnosti, 2010, Zagreb.

- [3] Cmrečnjak, D., Filipović, A. M., Gorički, Z., Hrستی, G., Hunjak, D., Magud, M., Minga, I., Petričević, N., Taradi, J., red., Žarak, M.: "Služba zaštite na radu, istraživanje problematike organizacije i rada službi zaštite na radu u poslovnim organizacijama u Hrvatskoj", Hrvatsko društvo inženjera sigurnosti, 2009, Zagreb.
- [4] Kacian, N: "Osnove sigurnosti", IPROZ, 2000, Zagreb.
- [5] Petersen, D.: "Techniques of Safety Management: A system approach", American society of safety engineers, 2003, Des Plaines.
- [6] Taradi, J., Grošanić, N: "Model procesa organiziranja zaštite na radu u poslovnom sustavu", Zbornik radova, V. Znanstveno-stručna konferencija s međunarodnim sudjelovanjem: "Menadžment i sigurnost", 2011, 330-341.
- [7] Живковић, С.: "Мотивација за заштиту на раду", Универзитет у Нишу, Факултет заштите на раду, 2008, Ниш.
- [8] Živković, S.: "Istraživanje problematike rada lica za bezbednost i zdravlje na radu u privrednim društvima u Srbiji", Zbornik radova, V. Znanstveno-stručna konferencija s međunarodnim sudjelovanjem: "Menadžment i sigurnost", 2011, 11-32.
- [9] Živković, S., Taradi, J.: "Komparativna analiza istraživanja problematike rada samostalnog stručnjaka za zaštitu na radu u Hrvatskoj i Srbiji", Zbornik radova, V. Znanstveno-stručna konferencija s međunarodnim sudjelovanjem: "Menadžment i sigurnost", 2011, 100-119.
- [10] Žugaj, M., Šehanović, J., Cingula, M.: "Organizacija", TIVA, Fakultet organizacije i informatike Varaždin Sveučilište u Zagrebu, 2004, Varaždin.

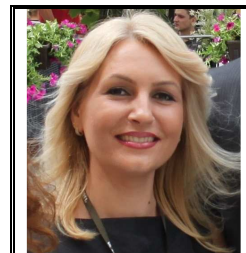
Regulations:

- Occupational Health and Safety Act. "Official Gazette" of the Republic of Serbia, 101/05.
- Occupational Health and Safety Act, Official Gazette of the Republic of Croatia 59/96, 94/96, 114/03, 100/04, 86/08, 116/08, 75/09.

BIBLIOGRAPHY of first author

Snežana Živković, Ph.D.

Faculty of Occupational Safety
in Niš



Graduated on Philosophical Faculty in Belgrade, section Psychology. Magistrature and Doctorate on Faculty of Occupational Safety Niš.

Research Interests: Influence of psycho-social and organisational work factors on work safety.

Author of several research papers in the field of psychology, marketing, business management, organizational theory, organization of fire protection, safety and health at work etc.