

Case study of the number of injuries (considering several key indicators) in 2012 in real enterprises in Bitola region, Republic of Macedonia

Ivo Kuzmanov, PhD.

Department of Industrial Engineering and Management,
Faculty of Technical Science,
Bitola, Republic of Macedonia

Copyright © 2013 ISSR Journals. This is an open access article distributed under the ***Creative Commons Attribution License***, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT: The aim of this paper is to represent the results from the conducted research, based on the number of injuries in all of the real organizations that gravitates in the Bitola's region, Republic Macedonia in the period frame January 2012-December 2012. The basic aim of the conducted research is to represent relevant information for the number of injuries in Bitola's region, no ether of the type of the organization, the basic field of action, the size of the same and the number of employees. Actually, this paper is a representation of the conducted research based on the number of injuries, conducted as a part of every year activity of the Safety and Health organization NGO Bitola from Bitola. The paper represents the relevant information about the number of injuries in real enterprises; information's given by the enterprises that are working in the Bitola's region. The given information's are analyzed from several aspects such as: the gender of the person that is injured, the education of the injured person, the work period of the day when the injury is spotted, the body part that is injured, number of work days that are lost as a result of the injury, etc. The paper represents some of the main criteria's that were under research in 2012.

KEYWORDS: Safety at work, Number of injured persons, Work injury, OSHAS systems, Safety management on work places.

1 INTRODUCTION

Safety on the work places is one of the key aspects that directly lead to motivated staff members, whose feeling as safer as can be in their workplaces, leads directly to maximum motivation and achievement on the defined business objectives. Considering that Republic of Macedonia is a country that adheres to global recommendations for the application of the so-called OSHAS safety systems in the work organizations on one hand, but on the other hand, and with the appropriate legislation in the field of safety and health in the workplaces, in the Bitola's region there is an NGO Bitola that is functioning in the field of Occupational Safety and Health on direct work places. The main objective of the association is to educate, to analyze the number and the nature of the injuries in the Bitola's region annually, and to have continued efforts in terms of educational and practical advices to business enterprises in the field of occupational safety and health.

As one of the main activities of the association is the evidential of the injuries, taking in considerations two relevant sources such as [2]:

- Submitted evident sheets (records for the number of injuries with a description of the injury, time interval of occurrence, data for the injured person and the number of lost working days due to the occurrence of the injury) given by business enterprises that work and gravitate in the Bitola's region
- Submitted relevant records for the number of injuries, given by competent inspectors from the Bitola region

Actually, the basic aim why two sources of information are used is to eliminate the situation where an injury is not recorded. So, when the relevant information is gathered, the same are analyzed from more criteria's such as [2]:

- The gender of the injured person
- The education of the injured person
- The time interval when the injury is spotted
- The body part that is injured
- Number of lost work days as a result of the injury

The information's (number of spotted injuries) represented in this paper are analyzed in one year period, starting from January 2012 and with a deadline in the end of December 2012. Considering the criteria's given before in the paper, I can say that there are several other sub-criteria's such as: the type of the business entity (private or public service), the field of work (industry, education, etc.) and the size of the entity (small, medium, large).

The represented information are a relevant picture for the number and the character of the injuries, that in a different stage can be analyzed comparatively with information's from past years, and with information's from other cities or regions from Republic Macedonia [1].

The basic aim of the paper is to present some of the analyzed information (criteria's) in Bitola's region, considered in the time period January 2012-December 2012 [2].

2 PRESENTING THE RESULTS FROM THE CONDUCTED RESEARCH

All of the results from the conducted research about the injuries on direct work places were analyzed and categorized considering several key points such as [2]:

- Gender of the injured person
- Age of the injured person
- The aimed education
- Number of lost work days as a result of the injury
- Body parts that are injured
- Day time, when the injury is spotted
- Comparative analyses regarding the previous years (considering every criteria)
- Comparative analyses regarding number of injuries in other regions in R. Macedonia, etc.

The conducted research was done on several organizations and several branches in Bitola's region. In addition, in Table 1, all of the organizations, together with the number of spotted injures are presented. I must say that in the table column Organizations, the original names of the researched organizations are used.

Table 1. List of organizations that were under research in 2012 in Bitola's region

Organization	Number of injured employees
A.D. ELEM REK Bitola	80
DOOEL FOD Bitola	28
A.D. METALEC Bitola	16
Agency for temporarily employments	13
SOCOTAB DOOEL Bitola	11
EVN Macedonia, branch office in Bitola	6
DOOEL ENIGMA Z.D. Bitola	1
VEROPOLUS DOOEL Skopje, local supermarkets in Bitola	1
DOOEL LAJCAR TOYS Bitola	1
DOOEL GRUNI VIT Bitola	1
DOOEL PET Z.D.	3
DOOEL MODUL PROM Bitola	2
DOO SIMPEKS Bitola	1
MLEKARA A.D. Bitola	5
Z.K. PELAGONIJA A.D. Bitola	18
A.D. SEKERANA Bitola	10
SVR Bitola (police)	9
IDEAL SIPKA DOOEL Bitola	2
FALKO DOO	1
TRIKOTAZA A.D. Bitola	6
DOOEL RODON Bitola	10
DOOEL SAITIS	9
A.D. MOKEL EEII Bitola	5
DOOEL BT-MANUFACTURE Bitola	1
METEORIT DOOEL Bitola	4
TOTAL NUMBER OF INJURIES	244

Also the research was conducted in other branches that are shown graphically in Table 2 in addition.

Table 2. List of branches that were under research in 2012 in Bitola's region

Branch	Number of injured employees
Construction industry	8
Public services	21
Graphic industry (including all of the organizations in Bitola)	15
Education (including all public primary, secondary and high educational schools)	9
Trade industry	2
Transport industry	9
Public health (hospitals, child care etc.)	24
Food Industry (including all of the organizations in this industry in Bitola)	4
TOTAL NUMBER OF INJURED PERSONS	92

Considering all of the organizations and branches that were under research, total number of injured persons is 336 persons. On the other hand considering the number of information gathered and analyzed, several of the criteria's with the appropriate results are represented in the addition of this paper.

2.1 ANALYSING THE INJURIES CONSIDERING GENDER OF THE INJURED PERSON

Taking into consideration that the gender of the injured person is actually one of the key elements for the process of creating an official record for the accident (fulfilled by the organization and the inspection on the scene), I must start showing the results from the conducted research with the gender of the injured person as a criteria [2].

Also very important information for this part is the total number of the injured persons, that is 336 people in the year 2012 (given by the organizations in the Bitola region). All of the information's first of all are given in Table 3 and after that are represented graphically in Figure 1.

Table 3. The gender of the injured person as criteria – summarized information for year 2012

Gender	Total number of injured persons	In percent (%)
Male	90	26.8
Female	246	73.2
TOTAL	336	100 %

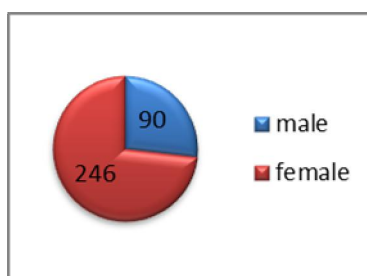


Fig. 1. Illustrated view on the information given into Table 3

2.2 ANALYSING THE INJURIES CONSIDERING THE SEVERITY OF THE INJURY

The severity of the injury is also one of the key aspects, and a point of view that is more than important. I must say that there are three main categorization of the severity in R. Macedonia, such as [2]: light injury, heavy injury and death of the injured person. Considering this criteria, the only good thing is that the number of fatal injuries in 2012 is 0 (there was 1 dead person as a result of work activities in the previous year). All of the information's from the conducted research are given into Table 4 and Figure 2.

Table 4. The severity of the injury as criteria – summarized information for year 2012

Severity	Total number of injured persons	In percent (%)
Light injury	7	2
Heavy injury	329	98
Fatal injury	0	0
TOTAL	336	100 %

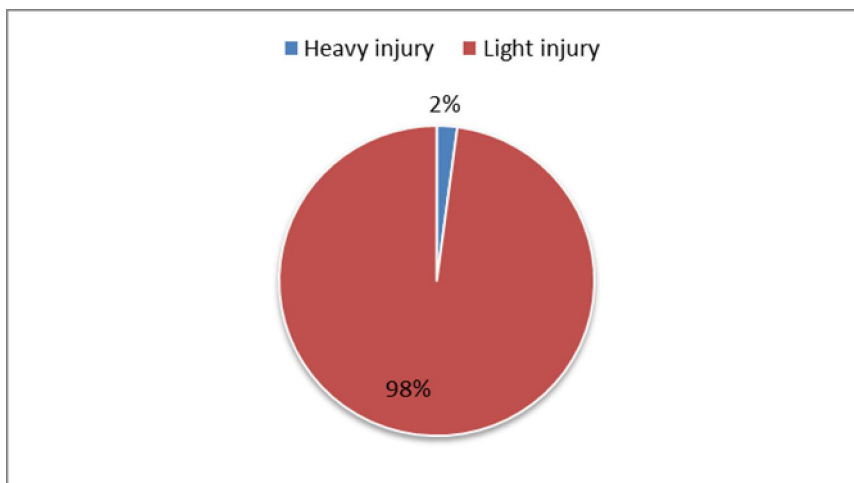


Fig. 2. Illustrated view on the information given into Table 4

2.3 ANALYSING THE INJURIES CONSIDERING THE AGE OF THE INJURED PERSON AS A CRITERIA

Taking in consideration that the total number of injuries was 336, and on the other hand considering the age of the injured person, there are several main intervals of the ages such as [2]: 18-25; 25-35; 35-45; 45-64. The first one (18 years old) is taken into considerations because that is the lowest age for employment according to Macedonian laws, and 64 is the age when people go to a retirement into R. Macedonia. All of the information's are given into Table 5 and Figure 3.

Table 5. The age criteria – summarized information for year 2012

Age (in years)	Total number of injured persons	In percent (%)
18-25	9	2.7
25-35	56	16.7
35-45	67	19.9
45-64	204	60.7
TOTAL	336	100 %

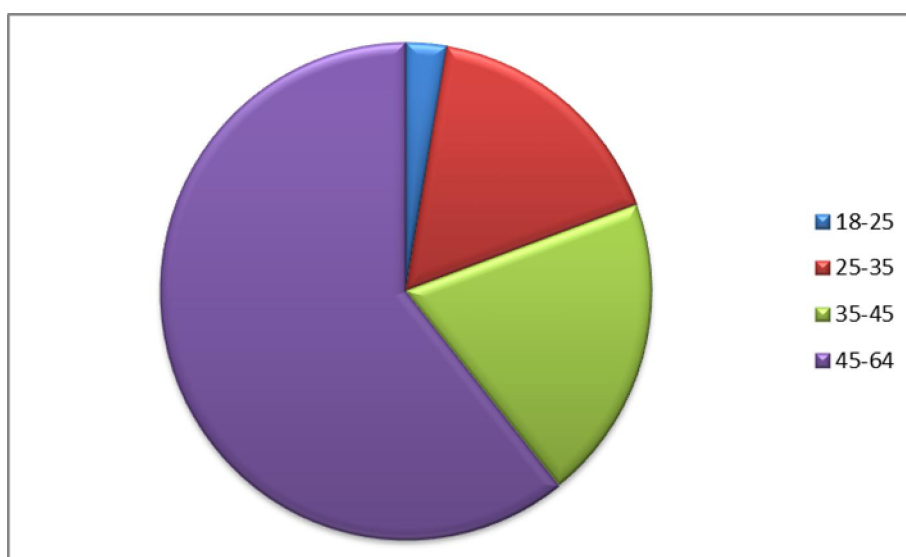


Fig. 3. Illustrated view on the information given into Table 5

3 CONCLUSION

The basic aim of this paper is to represent the results from the long term research, on the field of Safety at work places, or to be more specific the number and the nature of the spotted work injuries in Bitola's region in the period of research January 2012 – December 2012. All of the activities from the research are part of the long term aims of the NGO Bitola from Bitola, R. Macedonia. Actually if you see the results, the conclusion is that there is no way to avoid work injuries during the work period of the day (no meter of the organization), but conclusion is also that with continuous efforts in a matter of education of the employees, appropriate ergonomically analyses on every single work place, appropriate and on time evaluation of the work risks and continuous usage of the HTZ equipment and many other activities, are key elements for reduced number of injuries. Considering that all of the Macedonian enterprises, according to the legislation and national laws, must have an expert from the field of Safety on work places, and considering the results from the research from the past years, conclusion is that the results are more and more positive from year to year (reduced number of injuries), but always can be done more.

REFERENCES

- [1] I. Kuzmanov, "*Branding and implementing an OSHAS 18001 and ISO 9001:2008 in a real industrial system*", PhD. dissertation, Faculty of Technical Science in Bitola, pp. 107-120, 2012
- [2] I. Kuzmanov, Z. Angelevski, "*Conducted research on the number of injuries into Bitola's region in 2012*", NGO Bitola from Bitola, 2012
- [3] S. Angelevska, I. Kuzmanov, Z. Angelevski, "*Survey of the number of injuries related with work places in Bitola Region*", *International Scientific Magazine HORIZONS*, pp. 33-36, Volume 8, December 2012.