

Analyzing injuries in Bitola region into time frame 1999 - 2015

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Abstract

Purpose and Originality: The basic aim of the paper is to present the situation with the health and safety management systems into the industrial entities from Bitola, R. Macedonia, with a special overview to the injured persons into the time frame 1999 – 2015. To be more specific several years from the time frame were selected as key one's, and the same one's are the following 1999, 2008 and the frame 2012-2015.

Method: There were several criteria's which were used while selecting the years. First of all the year 1999 was chosen due to the situation where we had a huge amount of injured persons in one year. On the other hand the year 2008 was chosen due to the issue that the year 2007 was the one in which the health and safety legislation into Macedonia began into law regulations who must be done by the entities, and it was expected to have a situation with reduced spotted injuries on year basis. The analyses were done systematically having in mind several key criteria's such as: the day of the week when the injury was spotted, the time frame of the day, gender of the injured person, spotted professional diseases, total amount of lost working days etc.

Results: At this point it's more than relevant to say that the data presented into the paper are only a small part from a larger research done into the frame of years 2012-2016, a research that is still ongoing.

Keywords: QMS, OSHAS, injury, production systems, health and safety.

1 INTRODUCTION

The labor present representative sample with selected criteria's analyzed with a systematically done survey analysis systematic survey in terms of consistency in the application of safety systems in industrial facilities in Bitola, Republic of Macedonia, research conducted in the period 2012-2016. Now the presented survey is extended with an aim to do a consistent analysis of the gathered data considering the number of injuries in the year 2016, as well as to take concrete steps in the capacities, which would lead to a reduction of the direct work injuries. The main aim of the paper is to represent the selected criteria considering the number and nature of injuries registered into the period 1999-2015, to be more precise the following exact years: 1999, 2008, 2012-2015.

The basic purpose which is the reason why the exact years are chosen is the following: the year 1999 according to official data gathered and analyzed during the research is the year with the highest number of injuries compared to the number of employees into the business entities, the year 2008 is considered as a crucial year when results were expected in terms of reducing the number of injured persons with consistent application of health and safety law regulations into

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Macedonia (adopted in 2007) and also the current display of the situation with work injuries into the time frame 2012-2015.

The paper selects several key criteria according to which the analyses were done such as: the number of registered injured persons, the total amount of lost working days, the gender of the injured person, the ratio of men vs. women, the time interval when the injury was spotted, the day as well as the registered occupational diseases as a result of current work activities.

What is essential mentioning, in order to prove the consistency and systematically taken actions while doing the survey is to mention that the same one was done into a long period, to be more precise the time frame year 2012-2015. Also, into the process of research and analysis all of the used information were from relevant institutions where injuries are recorded, such as: the regional unit of the Ministry of Labor - local health and safety Inspectorate, the local department of the Health fund, the association for safety Bitola and the industrial facilities where injuries were spotted.

So considering all of the sources for data gathering, the factor of neglect on work injuries is very small. The data presented into the research are only a small part from the gathered data, presented into several key criteria's with an aim to present the total amount of injuries but also to take concrete measures in accordance with the data obtained, to increase the safety into direct work places. All of the presented material from the research was with an global aim to take some concrete preventive measures which would lead to expected decrease into numbers considering the injuries into direct work places.

2 Presenting The Data From The Survey

In addition to this section several table views are presented, which are the best way to present the data from the injured persons into industrial entities from Bitola. Seeing the presented data, what is worth mentioning is the fact that most of the injured workers are from the so-called age group "most experienced employees". Those are the workers who are before retirement (year or two to their retirement). The situations presents us that those are the most injured ones with over 50% from the total amount of injured persons. Seeing the gathered data we concluded that there are multiple reasons for the previous mentioned situation, but that is for some another issue of the journal. In addition to the paper several table views are presented such as: the difficulty of the spotted injury, day of the week when the injury was spotted, time frame, the gender of the injured person as well as the professional disease as a result of the working activities.

Firstly a table view in which data according to the criteria - difficulty of the injuries is presented. While doing the table view, the law regulations were taken in mind and according to the same one the injuries are divided into three group categories: light (injuries without leave or long – term consequences), heavy (injuries with some deformations, seizure of body parts and permanent disability) and death (death occurred at the scene, while going to the nearest hospital or as a result of the injury after a period of time).

Table 1. Criteria – type of injury – lost working days

Year	Number of injuries				Lost working days
	Light	Heavy	Deadly	Total	
1999	597	51	2	650	28893
2008	320	35	2	357	5927
2012	329	7	0	336	no data
2013	344	7	0	351	7994
2014	281	41	1	323	7167
2015	267	43	1	311	6366

So, before we switch to a further presentation of the data, it's especially important to note, during the field research and communication with employees, despite the legal obligation for reporting any working injury on direct work places regardless of the character and nature of same one, there are some of the so-called "small - slight injuries" which aren't reported by the employees itself, or by the industrial entity. Such injuries are small slights, dents and so on, which the employees themselves treat them with serious less, but on other hand the legislation says that every injury regarding the type and the nature of the same one should be reported. In addition a table view is presented, the results according to a key criteria – day of the week are presented.

Table 2. Criteria – day from the week when the injury was spotted

Year	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
1999	129	120	129	129	101	40	30	650
2008	63	67	58	58	62	32	17	357
2012	69	59	62	60	50	25	11	336
2013	60	60	67	69	48	27	20	351
2014	52	53	48	58	54	39	17	304
2015	66	57	51	51	49	24	13	311

Analyzing the data presented into the table view 2, what is key to mention is to say that most of the injuries were spotted into the day period Monday to Friday, but having in mind the basic work activities into real capacities several injuries are spotted into the so-called weekend days (Saturday and Sunday). But what is more than important to say is the fact than into the year 2014 we have spotted 19 injuries without information about the day when the injury occurred. Having in mind the legislation which says that every injury must be recorded no longer than 48 hours from the moment of occurrence, it's a very symptomatic situation to have 19 injuries without information about the day of occurrence.

In addition, of the paper, we have presented data about the time frequency. From what is presented into the table view 3, key moment for consideration is that all of the time frames are according to the Macedonian legislation. Those are (00-04,04-08,08-12,12-16,16-20,20-24) in hours. In addition, all of the gathered data are presented into table view. All of the data

presented are according to the starting hypothesis which says that everybody could be injured, every day in every time frequency during the work activities on direct work places.

Table 3. Criteria – time frame

Year	00-04	04-08	08-12	12-16	16-20	20-24	TOTAL
1999	29	109	272	157	55	28	650
2008	8	42	156	91	38	21	357
2012	8	67	125	85	31	20	336
2013	13	52	138	95	37	16	351
2014	12	42	109	93	44	19	319
2015	16	45	111	91	31	16	310

Seeing the presented results into the table view, we have a similar situation as before, injuries that are recorded without a time frame when the injury occurred. So we have 4 such cases into the year 2014, and 1 such case into 2015. This situation is very similar to the previous situation into the table view 2 where we had 19 such cases. The situations previously mentioned led us to the conclusion that some mistakes were done into the evidencing of the injuries, mistakes made by the industrial entities, the local labor inspectors and from the persons into the industrial entities which are in charged to do such reports, although it is a legal regulation.

In addition of the paper another table view is represented where the data are collected and presented according to the key criteria – gender of the injured person. And before we represent the table view 4, we should mention one of the starting hypotheses, according to which we expected most of the injured persons to be male. This starting hypothesis was as a result of the information's according to which most of the employed persons in Bitola's region are male (almost 2:1 on the male side).

And before we represent the final table view 4, we should mention the situation with the professional diseases which according to the legal regulations should be evidenced, but generating the data we had an situation where the enterprises doesn't know if they had an employees with professional disease, which is very strange according to the situation where every employee should have and health exam every 2 years. This situation is very strange also if we had in mind the situation that we have several large companies from the metallurgy sector, the tobacco sector, where worldwide there are several professional diseases every year. All of the data presented into table view presents the situation, excluding the year 2008 where we had 5 professional diseases reported. This situation needs detail additional research.

Table 4. Criteria – gender of the injured person

Year	Number of injuries			Professional Disease
	Male	Female	M/F	
1999	543	107	5	/
2008	300	57	5.3	5
2012	246	90	2.73	/
2013	269	82	3.28	/
2014	249	74	3.36	/
2015	215	96	2.24	/

Seeing the data presented into the table views, we can conclude that a large amount of relevant data regarding work injuries into Bitola's region are presented, having in mind long time period (1999-2015). But the key point of view is to mention that the data presented are only a small part from the research. On the other hand, considering the fully research data are analyzed considering several other key criteria's, but not only with an aim to have statistics. Contrarily several key steps with a cooperation with the industrial entities where all of the injuries were spotted, were done with an aim to reduce the amount of injuries into the year 2016. That is the reason why the research is ongoing, and at the moment all of the data from the year 2016 are analyzed. So with this newest data we could say if the key steps were usefully. This could be a material for some other paper maybe for the same journal.

3 Conclusion

The paper presents unique segment from a conducted research, systematically done in a point of view considering the injuries into the enterprises from Bitola's region. What is necessary to say now, is to consider the fact that the research was done with an aim to get an real picture about the quality management systems into real enterprises, considering the key element – injuries into direct work places. On the other hand, the research directly presents the incorporation of the law and regulations in aim of health and safety on direct work places on one hand and on the other to see all of the measures which are more than necessary with a final aim reducing the work injuries.

Seeing the results presented into the table views, we can consider that the number of spotted injuries is reducing from year to year, but seeing the law and regulations, not with the dynamics which are expected and which were a starting point of view while doing this research. Starting hypothesis was set up considering the fact that all of the business enterprises have done the necessary evaluation on direct work places considering the safety risks. All of the previous mentioned led us to the conclusion the every worker, regarding the work position, regarding the work experience, regarding the age and the gender could be injured. Finally, I could mention that the data presented into the paper are only a small part from a research which was done, and it's still ongoing having in mind the data gathered.

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