



## Effect on Occupational Accidents of No. 6331 Occupational Health and Safety Law

Mustafa Yagimli\*, Zeynep Sagir\*\*<sup>‡</sup>, Hüseyin Akbaba\*\*

\* Department of Property Protection and Security, Vocational School, Okan University, Kadikoy, Istanbul

\*\*Department of Occupational Safety, Institute of Pure and Applied Science, Marmara University, Goztepe, Istanbul

\*Corresponding Author; Address: Tel: +90 216 325 4818, Fax: +90 216 340 2668, e-mail: mustafa.yagimli@okan.edu.tr

**Abstract-** The purpose of this research is to revise the statistics of work-related accidents occurred in Turkey in 2012, 2013, 2014, to analyze the distribution by sectors and to observe how No. 6331 Occupational Health and Safety Law effects the number of accidents and their distribution. Which sector has the most occupational accidents the most and the cases involving death were investigated. No. 6331 Occupational Health and Safety Law was inured in 2012, the years after and including 2012 were opted. Official statistics of 2015 are not included in the research because this year has not yet been published.

**Keywords-** Occupational accidents; occupational health and safety; statistics of occupational accidents.

### 1. Introduction

The first directive on occupational health and safety was adopted by the European Union in 1959. Early on measures have been taken on specific issues such as the labeling of hazardous chemicals and the prevention of worker exposure to certain substances. In recent years, there were radical changes and as a result, occupational health and safety has become the most active aspect of social policy of the European Union (James, 1993). Henceforth, occupational health and safety has ceased to be a national issue, it is at the center of the booming economy. So much so that the protection of the modern enterprise employees work-related accidents at the national and international levels, they begin to see it as both moral and legal responsibility (Ericson, 1996).

Despite all this, International Labour Organization (ILO) forecast shows that occupational safety and health continues to be a source of major global concern.

More than 2,000,000 people lose their lives every year due to work and workplace related causes all over the world.

- The non-fatal work-related accidents has increased to over 300 million per year.
- The cost of work accidents and occupational diseases on the global economy represents 4% of the global gross domestic product (GDP) (International Labour Organization).

The reason the numbers are so scary is that they are assuming the lead role in economic and social development in addition to workers being accounted for half of the world population (World Health Organization, 2007).

OSH culture is properly steady in less than 15% of the global workforce (World Health Organization, 2009). The improvement of OSH and its expansion to larger areas of the country depends on both individual and collective efforts (Moyo, et. al., 2015).

Increase in the number of people, economic and social burden of occupational accidents and occupational diseases and death has necessitated the development of preventive international standards in this area. Although the importance of OHS became more understandable by ILO sources, whether these provisions at the national level or at workplace level, it continues to be a problem to get the practical implementation (International Labour Organization).

The situation is not different in Turkey. In our country; the occupational health and safety related applications at workplaces goes back before Republican period. After Republican period, there were provisions to ensure the health and safety a number of laws and regulations as well. Ultimately June 30, 2012 No. 6331 Occupational Health and Safety Act came into force. Before the adoption of the new law with provisions for occupational health and safety, it was located in the 4857 (Korkut, et. al., 2013).

The biggest problem in this period where labour law provisions related to occupational health safety were the failure to be held in holistic regulatory requirements related to occupational health safety, the narrowness of the scope of work and workplaces, the lack of detailed legislation and serious problems in the implementation of the measures taken (Esen, 2015).

With the publish of No. 6331 Occupational Health and Safety Law, most of the provisions come into force in 2012, our country has got a comprehensive law, including all establishments under the umbrella. Regarding the European Union's Workers of the Incentive Measures Regarding Developments in the Health and Safety Directive No. 89/391 (EEC Council Directive, 12/06/1989) model is designed to create a degree of parallelism possible with EU legislation (Esen, 2015).

The new law focusing on protection and prevention concept is to ensure that the necessary measures are taken before the emergence of more accidents at work and occupational diseases. Certain definitions were made, coverage was extended and obligations of workers and employers were regulated in detail on these new Law on Occupational Health and Safety, (Korkut, et. al., 2013).

## 2. The Analysis of the Occupational Accidents

### 2.1. The Analysis of the Statistics of Occupational Accidents by Sector in 2012

In 2012 a total of 74871 occupational accidents, according to the official statement of Occupational Accidents and Occupational Diseases made and resulted in 744 casualties. Because of the topic of this research is to evaluate the distribution of occupational accidents by sector in year basis, the first 10 sectors that experienced the highest number of occupational accidents shown in Figure 1. In 2012 a maximum of 17498 occupational accidents occurred in the metal and machinery sectors, while pursued by 9919 occupational accidents in mining, 3. Place was the construction sector with the 9209 occupational accidents.

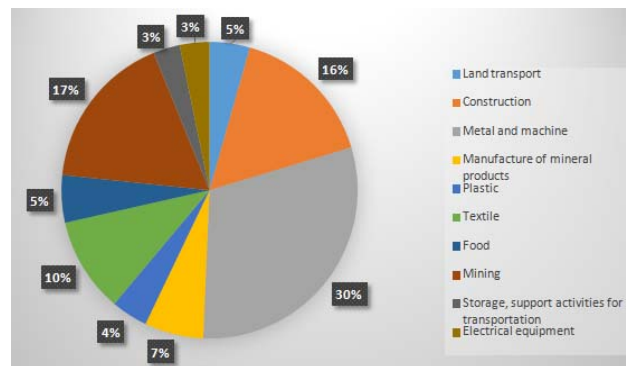


Fig. 1. The number of employees who had accidents in 2012.

The other sectors experiencing the most work-related accidents are, respectively: textiles, manufacture of mineral products, food, ground transportation, plastics, warehousing and support activities for transportation and manufacturing electrical equipment.

Considering the number of deceased workers, most of deceased workers, most of the casualties occurred in the construction sector where 256 workers died, road transport where 73 people lost their lives and metal and machinery sectors where 60 fatal cases seen were placed in 2. and 3. place. As seen in Figure 2, also in other sectors experiencing the most number of fatal work accidents occupational accidents are undeniably more.

Because of women's not being as active as men in working life and although the number of women who suffers from occupational accidents are smaller compared to men, close to 3000 women workers had occupational accidents in sectors such as food and textiles where women's employment is more. When all sectors are evaluated 9 were women out of 744 workers who died.

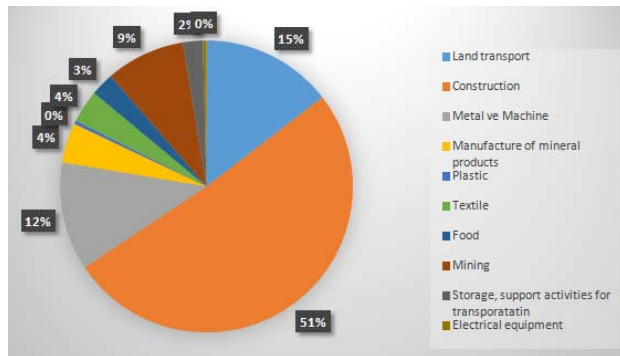


Fig. 2. The number of employees who had accidents in 2012.

According to data of 2012, when an order is made by considering the age of the employees most work-related accidents were observed to happen to the workers who are between 30-34 years old. However, when examining the statistics of the same year, more work-related accidents occurred in workplaces employing 1 to 3 workers.

### 2.2. The Analysis of the Statistics of Occupational Accidents by Sector in 2013

In 2013 a total of 191389 insured workers had occupational accidents and 1360 of them lost their life. The number of occupational accidents has increased by 2.5 times compared to the previous year. When Figure 3 is examined, 42017 in metal and machinery industry 26967 in the construction industry, 14186 in the mining sector, accidents can be seen in 2013. Unlike in 2012, construction and mining were replaced. While mining was in second place, construction was in third place in 2012. These three major occupational accident sectors were followed respectively by textiles, mineral products manufacturing, food production, land transportation, warehousing and support activities for

transportation, food and beverage service activities and manufacture of plastic products.

According to 2013 data, the number of workers who died due to occupational accidents has been increased by almost double compared to the previous year and become 1360. The construction sector took the

first place with 237 the number of died workers. In second place for road transport where 183 people were killed, 117 people killed in the metal and machinery industry which is in the third place. Fatal accidents at work are the same for this ranking in 2012. They are followed by the mining, production of mineral products, food, warehousing and support activities for transportation, textile, manufacturing of plastic products and food and beverage service activities. Their rates are seen in Figure 4.

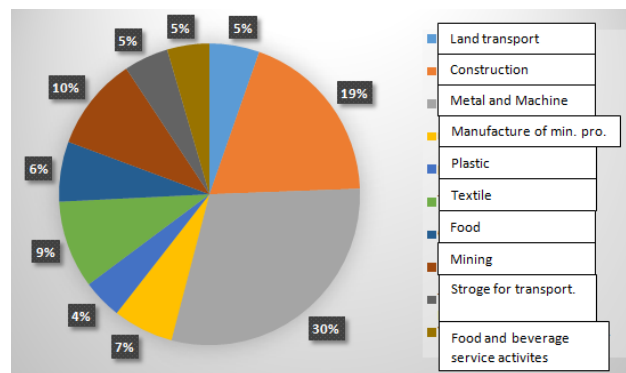
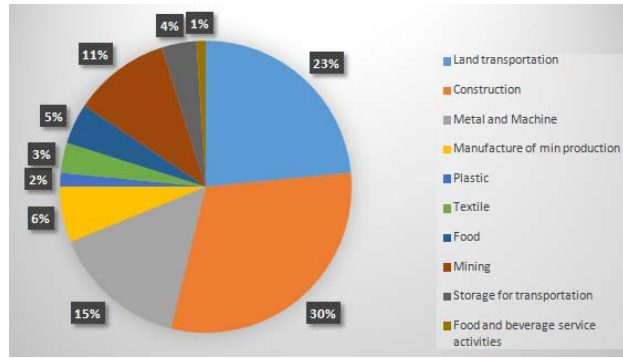


Fig. 3. The total numbers of occupational accidents to the sector.

Because in mining, construction, metal and machinery industry and road transport are the sectors where usually the men are active employees, only two female workers lost their life due to work-related accidents in 2013. Correspondingly in 89135 male workers were injured in these sectors while 1632 female workers had accidents.



**Fig. 4.** The number of fatal accidents at work according to the 2013 industry.

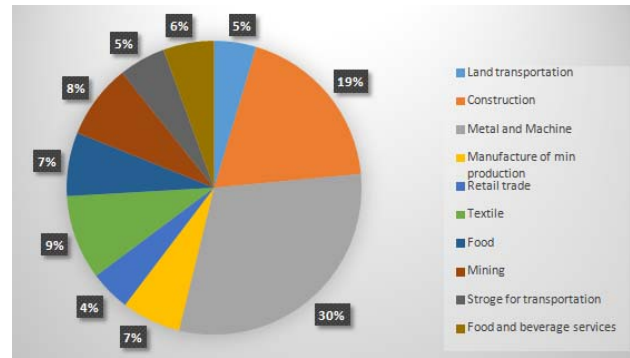
Considering all working sectors, the number of male workers who had occupational accidents resulting in fatal or injury is greater than the number of women. Men's being more active in business is one of the most significant reasons.

When 2013 statistics were analyzed in terms of age of the employees who had occupational accidents, employees in the 25-29 age range had more accidents at work. Considering the number of employees, most fatal occupational accidents occurred in workplaces with 21-49 employees, and the number was 297.

### 2.3. The Analysis of the Statistics of Occupational Accidents by Sector in 2014

221366 industrial accident notifications were made in Turkey in 2014, 1626 of them were fatal. According to the Figure 5, the first 10 sectors of occupational accidents occurred the most are respectively:

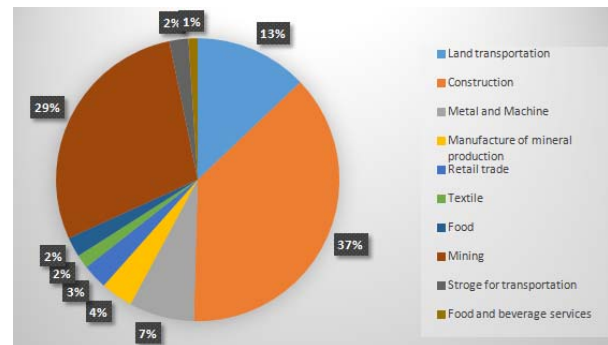
Metal and machinery industry (47714), construction (29699), textile (14627), mining (12884), the manufacture of food products (10971), manufacture of mineral products (10244), food services (8818), warehousing and support activities for transportation (8079), land transport (7287), retail services (7000).



**Fig. 5.** According to 2014 the number of employees who had accidents by sector.

As it was in 2013, metal and machinery industries and construction sector continued to be the sectors where occupational accidents occurred the most in 2014. However, the number of accidents that occur in mining sector was more compared to the textile industry sector in 2013, textile sector moved to the third place in 2014. Furthermore, while in terms of the number of occupational accidents in the plastics industry was in the first 10 places in 2013, retail services moved to the top 10 in 2014, and plastics remained lower in the list.

If we are to evaluate fatal occupational accidents by sector for 2014 according to the figure 6, construction, mining and road transport takes the first 3 places. Last year, construction sector was also the area experiencing the most fatal accidents, followed by land transportation and metal and machinery industry. Mining disaster occurred in Soma in 2014, moved to mining to the 2nd place.



**Fig. 6.** According to 2014 the number of employees who had fatal accidents by sector.

When we evaluate the occupational accidents by gender, textile sector, which has the most women employees, has the most notification of women occupational accidents. When we look at all sectors, while 24 women lost their lives in 2013, 37 women lost their lives in 2014. At the same time, compared to 2013 the number of women having occupational accidents increased by approximately 7500.

According to 2014 data, when the age of the workers having occupational accidents considered, employees between the ages of 25-29 than any other age range were observed to be exposed to accidents. When the number of employees were considered, most fatal occupational accidents were seen in work places where more than 1000 employees work, because of the Soma disaster where 301 people died. They are followed by work places with 21-49 employees.

### 3. Conclusion

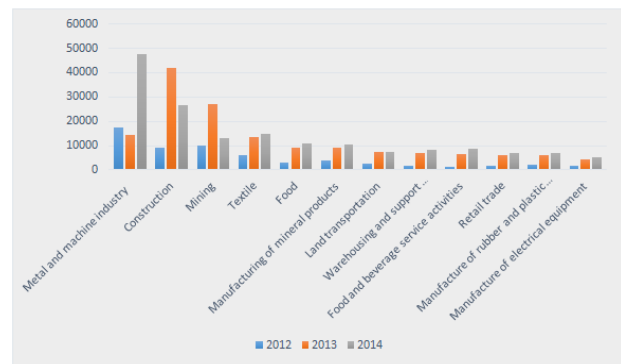
According to statistical analysis obtained from the official page of Republic of Turkey of Social Security Institution (SSI) occupational accident statistics by sector in 2012, 2013, 2014 are shown in Table 1.

**Table 1.** The number of work accidents by sector in 2012, 2013, 2014.

SECTORS	YEARS					
	The Number of Occupational Accidents			The Number of Fatal Occupational Accidents		
	2012	2013	2014	2012	2013	2014
Metal and machinery industry	17498	14186	47714	60	84	99
Construction	9209	42017	26699	256	117	501
Mining	9919	26967	12884	44	237	381
Textile	5970	13303	14627	18	26	21
Food	2972	9111	10971	13	35	30
Production of Mineral Products	3733	9213	10244	22	48	49
Land Transportation	2549	7597	7287	73	183	172
Warehousing and support activities for transp	1689	6782	8079	11	30	29
Food and beverage service activities	1310	6434	8818	11	8	14
Retail Trade	1667	6081	7000	11	35	38
Manufacture of rubber and plastic products	2311	6016	6895	2	12	10
Electrical Equipment Manufacturing	1878	4191	5229	2	7	3
<b>Total</b>	<b>60705</b>	<b>151898</b>	<b>166447</b>	<b>523</b>	<b>822</b>	<b>1347</b>

For a clearer interpretation and understanding of the differences occurred by sectors and years, number of occupational accidents and the number of fatal accidents at work has been shown in two separate graphs. Looking at Figure 7 throughout the 3 years of

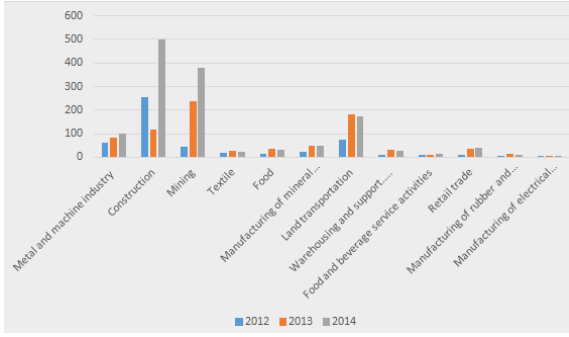
the examination, accidents occurred the most in metal and machinery industry, the construction and mining. After 2012 with No. 6331 Occupational Health and Safety Act was officialised, the increase in the number of occupational accidents in 2013 could only be interpreted by the number of occupational accidents appeared low because the statements were not properly made before the entry into force. The act brings the increase of control, factors such as the requirement to employ safety experts enabled the notification to be made more accurate.



**Fig. 7.** Occupational accident rates by sector in 2012, 2013, 2014.

Even if the growth rate in 2013 was not at the same, the continuing increase in occupational accidents was observed in 2014. Among the reasons for this increase are, compared to 2013 occupational health and safety began to better, safety experts getting over their professional inexperience, the entry into force of new regulations and employers' achieving an awareness about how important the work safety is.

By using the Figure 8, according to these 3 years' rate of fatal occupational accidents by sector, the first 3 places are construction, mining and land transportation. For similar reasons mentioned above, the number of fatal occupational accidents were reflected less in the statistics.



**Fig. 8.** The rate of fatal occupational accidents by sector in 2012, 2013, 2014.

Because the official statistics of 2015 will be announced after the second half of this year, 2015 has not been included in the research. However, when looking at the 3 years we examined that, with the occupational health and safety awareness' starting to raise and developments such as the implementation efforts of the necessary laws and regulations, drastic decline in the number of occupational accidents are expected in next years.

## References

- Ericson, P. A. (1993). Practical Guide to Occupational Health and Safety (pp. 3). Academic Press.
- Esen, B. (2015). 6331 Sayılı İş Sağlığı Ve Güvenliği Kanunu Gereğince Uygulanan İdari Yaptırımlardan İşin Durdurulması Yaptırımının Uygulanması. Mali Çözüm Dergisi/Financial Analysis, 25(128), 65-82.
- James, P. (1993). The Social Dimension Employment Policy in the European Community (pp. 135). Macmillan.
- Korkut, G., Tetik, A. (2013). 6331 Sayılı İş Sağlığı Ve Güvenliği Kanunu'nun Getirdiği Yenilikler Ve Temel Sorunlar. The Journal of Faculty of Economics and Administrative Sciences, Vol.18, No.3, pp.455-474.
- Moyo, D., Zungu, M., Kgalamono, S., & Mwila, C. D. (2015). Review of Occupational Health and Safety Organization in Expanding Economies: The Case of Southern Africa. In Occupational Health in Expanding Economies, Annals of Global Health, 8(4).
- www.sgk.gov.tr/wps/portal/tr/kurumsal/istatistikler/sgk\_istatistik, "Social Security Institution Website", Latest Access Time for the website is 5 April 2016.

www.who.int/occupational\_health/network/gohnet\_15.pdf, "World Health Organisation Website", Latest Access Time for the website is 5 April 2016.

www.ilo.org/safework/projects/WCMS\_149466/, "International Labour Organization Website", Latest Access Time for the website is 5 April 2016.