

**Original Article**

# The Trend of Occupational Injuries in Korea from 2001 to 2010

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## Introduction

After rapid economic development, occupational injuries are one of the most important issues within the workplace in Korea. There are two important turning points in South Korean society in the field of occupational safety and health. One is the starting point of the occupational safety and health regulation in 1980. Another point may be found the change of industrial structure distribution, especially the emerging service economic

sector among the national industrial market. Industrialization focusing on the manufacturing industry began in the 1960s in South Korea. Until 1980, Korean society has neglected worker's health, but since 1980 the Korean government provided guidance and regulation for worker's safety and health [1]. Some economic sectors such as the manufacturing industry have been growing since the 1960s, but recently this sector was decreasing with an increasing service sector. This kind of change in the industrial structure induced the change of the labor market structure. The size of the labor force for the service sector was increasing. Another change of the labor market was found in gender and age composition. Social participation of female and aged people during the last decade was increasing. Along with the global trend of the ageing society, Korean society also experienced the ageing process. Nowadays Korean society has rapidly changed into an aged society [2].

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On the above background of Korean society, the change of occupational injuries distribution may be observed the similar change of profile. Generally, the industrial structure was reflected into the profile of occupational injuries because the hazard and management style of each industry was different from each other. The difference of the hazard and management style may have induced the different type of occupational injuries.

This study investigated the trend and profiles of occupational injuries that occurred in the various economic sectors between 2001 and 2010 in terms of various criteria. Authors hypothesized that the yearly trend of occupational injuries according to the industry, age and type of accident will be different. Among the profiles authors can find the high risk group of occupational injuries as a heuristic research study. Moreover, occupational injuries in South Korea and those of the European Union (EU) have been compared. The purpose of this study is to identify the problematic population in the perspective regarding the trend of occupational injuries.

## Materials and Methods

Authors calculated index values based on the year 2001, and some economic sectors like the manufacturing industry. These kinds of criteria for investigating the trend and profile were done by Unsar and Sut in Turkey [3]. The index created by authors has two different kinds of implications; one is the trend of injuries based on the reference year of 2001, the other is the trend of injuries based on the reference group of each variable. Authors attempted to find some problematic populations for the prevention of occupational injuries. In this study, the statistical yearbook regularly published by the Ministry of Labor has been used as data [4]. The most comprehensive data from compensated cases related to occupational injuries is collected by the Korea Workers' Compensation & Welfare Service. Korea Occupational Safety and Health Agency integrates the compensated cases and reported cases, classifies the characteristics of occupational injuries, calculates them in terms of some criteria and produces the statistic of occupational injuries in South Korea [5].

The Industrial Accident Compensation Insurance was introduced for the first time in Korea in 1964 to protect workers from the rapidly soaring number of industrial accidents while the industry was being developed. This insurance is the compulsory insurance program by which the nation ensures the post-accidental livelihood of workers and their families. The government imposes a certain level of contribution on employers to take responsibility for accident compensation under the Labor Standards Act, and compensates on behalf of employers

for accident victims out of resources funded through collection of insurance contributions. Based on the Industrial Safety and Health Act, every employer should report occupational injury to the Ministry of Labor within one month from the day of the accident. However, a case claiming compensation does not need to be reported to the Ministry of Labor.

The approximate number of registered insured workers in South Korea between 2001 and 2010 was 12,130,709. When we classify the insured workers, we see that they work in the sectors of finance & insurance, mining, manufacturing, electricity, gas & water, construction, transport & storage & communication, forest, fishing, agriculture, and other services. Once we look at the structure of the enterprises, approximately 99.8% of the firms are small and medium-sized enterprises, and 78.2% of workers are employed in small and medium-sized enterprises. About half of employees (46.3%) of the workers are employed in the service sector and 23.0% and 24.2% are employed in the manufacturing and construction sector, respectively. Between 2001 and 2010, the number of small and medium-sized enterprises under 300 employees reached 1,591,128. This is an important figure in terms of the economy of South Korea.

The trend of index values from 2001 to 2010 was analyzed by regression analysis to produce a slope that shows the downward or upward trend of the size of occupational injuries. Another statistic was produced such as the fractal dimension that shows a different fluctuation of index values from 2001 to 2010 among industries, age groups, and types of injuries.

## Results

The number of registered insured workers, the total number of occupational injuries, and the number of fatalities due to occupational accidents in South Korea are presented in Table 1. The average number of the insured workers between 2001 and 2010 was 12,130,709. In the same table, it is also seen that the average number of occupational injuries was 82,371, and deaths was 1,430. It is understood from the table that the total number of occupational injuries decreased after 2003, but more than rebounded in 2008. The total number of fatal occupational injuries decreased from 2004 until 2006 but started to increase in 2007.

The Law on the Industrial Accident Compensation Insurance obligatorily charges the employers who are active in South Korea with reporting the insured accession to work of employees to the Korea Workers' Compensation & Welfare Service before employing them.

The most common occupational injuries and index values in respect to economic sectors between 2001 and 2010 are

**Table 1.** Yearly distribution of insured workers, and occupational injuries and illnesses

Year	Registered insured enterprises (n)	Registered insured workers (n)	Total occupational injuries (n)	Total fatal occupational injuries (n)
2001	909,461	10,581,186	75,781	1,551
2002	1,002,263	10,571,279	76,494	1,378
2003	1,006,549	10,599,345	85,794	1,533
2004	1,039,208	10,473,090	79,691	1,537
2005	1,130,094	11,059,193	77,916	1,398
2006	1,292,696	11,688,797	79,675	1,332
2007	1,429,885	12,528,879	78,675	1,383
2008	1,594,793	13,489,986	86,072	1,448
2009	1,560,949	13,884,927	89,100	1,401
2010	1,608,361	14,198,748	90,842	1,383
Average	1,301,132	12,130,709	82,371	1,430
Slope	87,738.00*	466,690.00*	1,356.921*	-13.96
FD	1.0069	1.0048	1.0810	1.2832

FD: fractal dimension.

\* $p < 0.01$ .

shown in Table 2. When we take the year 2001 as a reference, the figures for construction, forest, agriculture, and service show an increased trend. Interestingly, that of construction from 2003 to 2005 decreased but after 2005 it increased. However, this fluctuation can be neglected in the view of increasing trend as shown in the regression coefficient and fractal dimension. The figures for electricity, gas and water, and fishing indicate a decrease after 2002, while the figures of finance & insurance, mining, manufacturing, transport, and storage & communication decreased except for 2002 and 2003.

When we take the manufacturing industry as a reference, the figures of the sectors including construction, forest, agriculture, and services increased. The figures of the sectors for mining, electricity, gas & water, transport, storage & communication, and fishing decreased. This situation could be related to the fact that the manufacturing industry has more occupational injuries compared with the other sectors mentioned here.

The deaths resulting from occupational injuries with respect to economic sectors are shown in Table 3. Using the year 2001 as a reference, we see that the index values of all economic sectors show fluctuation. Especially, those of the finance and insurance, manufacturing, construction and service sectors showed a high value for the fractal dimension with more than 1.5. In comparison, between 2001 and 2010 the figures of the construction, forest, agriculture, and service increased while

those of the other sectors decreased. When we take the manufacturing industry as a reference, it is stated that only the fatal occupational injuries in the construction sector rose from 131% to 175%. But the yearly trend of these index values for the construction sector was not stable having a large fluctuation of 2.2 for the fractal dimension.

Occupational injuries by age categories are presented in Table 4. When we take the year 2001 as a reference, injured workers 24 years old and below resulting from occupational injuries decreased, while 45 years old and above increased. When the group of 24 years old and below is taken as a reference, the figures of the group of 45 years old and above increased. In addition, the age group of 25 and 44 demonstrated a rising trend except for 2006 and 2007.

Occupational injuries by reasons are shown in Table 5. When we take the year 2001 as a reference, we see that occupational injuries occurring due to amputation increased. Slip and trip also increased except for 2002 as well. The figure of caught in equipment decreased except for 2003, but that of the figure of fall from height reversely increased with some fluctuations. The number of occupational injuries resulting from traffic accidents decreased from 2001 to 2005 but after 2005 it increased. The figure of struck by falling objects indicates a dramatic spike in 2008 after three years of decline. When we take the figure of fall from height as a reference, those of not only slip and trip

**Table 2.** Index values of occupational injuries in respect of economic sectors between the years 2001 and 2010

Economic sectors	Year										Pattern	
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Slope	FD
<i>Index value by time, 2001 = 100</i>												
Total	100.00	100.94	113.21	105.16	102.82	105.14	103.82	113.58	117.58	119.87	1.79*	1.2346
Finance & insurance	100.00	94.82	97.23	86.51	88.72	90.02	81.89	87.99	78.00	79.67	-2.18*	1.2553
Mining	100.00	75.61	91.06	85.16	68.50	62.60	59.55	56.91	50.41	48.58	-5.41*	1.1180
Manufacturing	100.00	97.80	105.98	99.45	98.04	94.98	88.59	95.53	89.56	92.92	-1.27*	1.5636
Electricity, gas & water	100.00	112.84	109.17	102.75	100.00	91.74	98.17	79.82	90.83	69.72	-3.61*	1.3080
Construction	100.00	118.62	134.89	112.25	94.98	104.64	109.65	119.59	120.65	130.28	1.29	1.3636
Transport, storage, communication	100.00	85.17	97.96	86.47	82.10	83.62	77.49	80.54	75.16	75.75	-2.43*	1.2667
Forest	100.00	70.41	83.61	91.13	106.29	114.74	129.69	166.60	301.13	215.57	19.36*	1.2302
Fishing	100.00	152.56	145.51	53.85	28.21	33.33	36.54	42.95	37.82	40.38	-11.51*	1.2926
Agriculture	100.00	106.53	118.21	122.68	132.99	151.89	135.40	168.04	197.59	212.37	11.85*	1.0544
Services	100.00	96.79	113.22	116.77	126.66	132.05	135.18	150.84	172.23	171.02	8.58*	1.0286
<i>Index value by economic activity, manufacturing = 100</i>												
Total	227.88	235.19	243.44	240.95	238.96	252.26	267.04	270.91	299.16	294.00	7.71*	1.0611
Finance & insurance	1.63	1.58	1.49	1.42	1.47	1.54	1.50	1.50	1.42	1.39	-0.02*	1.0006
Mining	1.49	1.16	1.28	1.28	1.05	0.98	1.00	0.89	0.83	0.77	-0.07*	1.0035
Manufacturing	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	1.0000
Electricity, gas & water	0.33	0.38	0.34	0.34	0.33	0.32	0.36	0.27	0.33	0.25	-0.01*	1.0006
Construction	50.52	61.27	64.30	57.02	48.94	55.65	62.52	63.23	68.05	70.83	1.50*	1.2762
Transport, storage, communication	16.04	13.97	14.83	13.95	13.44	14.12	14.03	13.53	13.46	13.08	-0.22*	1.0852
Forest	2.92	2.10	2.30	2.67	3.16	3.52	4.27	5.09	9.81	6.77	0.65*	1.2188
Fishing	0.47	0.73	0.64	0.25	0.13	0.16	0.19	0.21	0.20	0.20	-0.05*	1.0058
Agriculture	0.88	0.95	0.98	1.08	1.19	1.40	1.34	1.54	1.93	2.00	0.13*	1.0032
Services	53.63	53.08	57.30	62.97	69.29	74.56	81.84	84.68	103.13	98.71	5.79*	1.0533

FD: fractal dimension.

\*p &lt; 0.01.

but also caught in equipment increased. The number of traffic accidents continuously increased from 2002.

## Discussion

An occupational accident may be regarded as the outcome of occupational safety and health performance in a workplace. Occupational safety and health performance is influenced by the various factors of three different levels such as the micro, mezzo, and macro level [6,7]. Macro factors may include economic pressure, and government regulation. Mezzo factors

can include organizational structure and financial performance [8,9]. Micro factors may include worker's awareness and perception of risk and behavior [10]. It is very difficult to extract the causal factors from occupational accident phenomena. Especially, structural factors of the macro level may be assessed by the trend analysis with economic and societal changes.

The European Agency for Safety and Health at Work claims that every three and a half minutes, somebody in the EU dies from work-related causes, which equates to more than 150,000 deaths a year. In recent years the incidence rate of serious accidents at work has fallen, such that by 2005 it had

**Table 3.** Index values of fatal occupational injuries in respect of economic sectors between the years 2001 and 2010 (Index number by time 2001=100)

Economic Sectors	Year										Pattern	
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Slope	FD
<i>Index value by time, 2001 = 100</i>												
Total	100.00	88.85	98.84	99.10	90.14	85.88	89.17	93.36	90.33	89.17	-0.90	1.4647
Finance & insurance	100.00	125.00	112.50	62.50	150.00	62.50	75.00	100.00	37.50	62.5	-6.44	1.6319
Mining	100.00	46.58	53.42	56.16	26.03	27.40	28.77	17.81	39.73	27.40	-5.82*	1.1547
Manufacturing	100.00	80.49	91.80	85.59	90.24	87.80	87.14	90.47	86.92	93.57	-0.10	1.7012
Electricity, gas & water	100.00	200.00	140.00	60.00	60.00	80.00	80.00	80.00	80.00	60.00	-8.61	1.5212
Construction	100.00	98.65	109.61	113.83	91.91	94.60	94.44	103.20	94.27	93.76	-1.06	1.7228
Transport, storage, communication	100.00	77.78	76.47	75.82	68.63	62.09	69.93	74.51	66.01	52.94	-3.27*	1.1096
Forest	100.00	109.09	100.00	90.91	118.18	90.91	163.64	136.36	172.73	263.64	13.88*	1.1246
Fishing	100.00	153.33	133.33	46.67	20.00	6.67	13.33	20.00	6.67	20.00	-14.71*	1.2492
Agriculture	100.00	133.33	166.67	333.33	166.67	100.00	100.00	166.67	150.00	183.33	0.61	1.4385
Services	100.00	90.68	108.47	116.10	119.07	99.15	112.71	110.59	120.34	107.20	1.53	1.8709
<i>Index value by economic activity, manufacturing = 100</i>												
Total	343.90	379.61	370.29	398.19	341.81	336.36	351.91	354.90	357.40	327.73	-3.17	1.7909
Finance & insurance	1.77	2.75	2.17	1.30	2.95	1.26	1.53	1.96	0.77	1.18	-0.13	1.1496
Mining	16.19	9.37	9.42	10.62	4.67	5.05	5.34	3.19	7.40	4.74	-0.99*	1.2324
Manufacturing	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	1.0000
Electricity, gas & water	1.11	2.75	1.69	0.78	0.74	1.01	1.02	0.98	1.02	0.71	-0.11	1.0831
Construction	131.49	161.16	157.00	174.87	133.91	141.67	142.49	150.00	142.60	131.75	-1.53	2.2075
Transport, storage, communication	33.92	32.78	28.26	30.05	25.80	23.99	27.23	27.94	25.77	19.19	-1.17*	1.1735
Forest	2.44	3.31	2.66	2.59	3.19	2.53	4.58	3.68	4.85	6.87	0.37*	1.1225
Fishing	3.33	6.34	4.83	1.81	0.74	0.25	0.51	0.74	0.26	0.71	-0.55*	1.2103
Agriculture	1.33	2.20	2.42	5.18	2.46	1.52	1.53	2.45	2.30	2.61	0.00	1.1947
Services	52.33	58.95	61.84	70.98	69.04	59.09	67.68	63.97	72.45	59.95	0.93	1.6899

FD: fractal dimension.

\*p &lt; 0.01.

decreased by 22% in relation to 2000 for the EU-27. During the same period there was a 24% reduction in fatal accidents at work in the EU-27. Note that these figures may in part reflect the structural shift of the European economy towards services, where the risk of accident and death at work is usually less than that within agriculture, industry or construction [11].

In absolute terms the highest incidence of serious and fatal accidents at work was recorded within the construction sector, with agriculture and transport also recording relatively high values. Men are considerably more likely to have an ac-

cident or to die at work. This is due, at least in part, to a higher proportion of men working in 'higher risk' sectors and occupations, while men are also more likely to work on a full-time basis; these characteristics may also explain why the incidence of accidents has tended to fall at a more rapid pace for men than for women. For example, the incidence of serious accidents for men fell by 19% between 2000 and 2005, while the corresponding reduction for women was 15% [11].

In addition, forest, agriculture and construction in Korea have been quite high compared to those of 2001. However,

**Table 4.** Index values of occupational injuries in respect of age between the years 2001 and 2010

Age	Year										Pattern	
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Slope	FD
<i>Index value by time, 2001 = 100</i>												
Less than 25	100.00	93.60	93.66	75.08	69.42	67.95	64.40	66.15	69.97	72.68	-3.53*	1.1408
25-44	100.00	96.12	107.01	99.43	95.58	92.61	86.96	91.91	87.64	84.12	-1.93*	1.3367
45 and over	100.00	108.86	125.22	118.40	118.71	128.97	134.00	151.78	167.12	177.34	7.84*	1.0386
<i>Index value by age, less than 25 = 100</i>												
Less than 25	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	1.0000
25-44	766.88	787.52	876.19	1015.49	1055.87	1045.17	1035.53	1065.60	960.62	887.67	19.97	1.3027
45 and over	559.18	650.36	747.62	881.78	956.25	1061.28	1163.56	1283.10	1335.69	1364.53	94.99*	1.0000

FD: fractal dimension.

\*p &lt; 0.01.

**Table 5.** Index values of occupational injuries in respect of the type of injury between the years 2001 and 2010

Type of injury	Year										Pattern	
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Slope	FD
<i>Index value by time, 2001 = 100</i>												
Slip & trip	100.00	93.56	111.78	103.49	102.89	111.31	110.81	126.48	137.79	145.02	4.96*	1.1393
Caught in equipment	100.00	96.28	102.07	92.30	87.85	88.34	84.26	80.91	85.82	89.57	-1.80*	1.4233
Fall from height	100.00	110.97	131.08	119.58	110.75	119.69	121.20	143.66	139.17	143.79	4.05*	1.1961
Struck by falling objects	100.00	108.07	116.67	104.69	92.02	94.55	93.60	123.61	118.86	112.62	1.17	1.6286
Collision	100.00	106.62	127.48	117.20	114.12	136.41	152.60	91.03	105.53	108.34	0.08	2.0212
Amputation	100.00	151.88	150.64	163.21	174.21	194.97	200.64	281.97	311.59	340.11	24.66*	1.0022
Traffic accidents	100.00	73.64	89.44	87.79	82.81	104.03	113.35	165.58	167.16	129.15	8.46*	1.5060
Overexertion	100.00	103.12	116.76	119.25	109.01	52.23	23.79	31.63	34.68	38.83	-10.90*	1.1812
Others	100.00	93.91	94.01	83.04	111.06	108.23	103.82	142.40	127.76	128.57	4.82*	1.3781
<i>Index value by type of injury, fall from height = 100</i>												
Slip & trip	150.02	126.49	127.92	129.83	139.37	139.51	137.16	132.08	148.53	151.30	1.27	1.8927
Caught in equipment	193.03	167.48	150.31	148.98	153.11	142.46	134.20	108.72	119.02	120.24	-7.62*	1.0838
Fall from height	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	1.0000
Struck by falling objects	71.84	69.96	63.93	62.89	59.68	56.75	55.48	61.81	61.35	56.26	-1.43*	1.1821
Collision	81.89	78.68	79.64	80.26	84.38	93.33	103.11	51.89	62.09	61.70	-2.18	1.4590
Amputation	24.03	32.88	27.61	32.79	37.79	39.14	39.78	47.16	53.79	56.83	3.40*	1.0785
Traffic accidents	33.06	21.94	22.56	24.27	24.72	28.73	30.92	38.11	39.71	29.69	1.19	1.6430
Overexertion	61.40	57.06	54.69	61.23	60.43	26.79	12.05	13.52	15.30	16.58	-6.56*	1.1069
Others	60.87	51.51	43.65	42.27	61.03	55.04	52.14	60.33	55.88	54.42	0.48	1.7134

FD: fractal dimension.

\*p &lt; 0.01.



compared to the manufacturing sector, there is no higher rate of occupational injuries. The occupational accident rates of fishery, agriculture, construction, health and social industry in the member states of the UN have been quite high [12].

An evaluation of the fatalities that occurred in Korea between 2001 and 2010 revealed that the highest figure occurs in the forestry and agricultural sectors, followed by the service and construction sectors. Except for construction, the regulation of these economic sectors has been neglected by the Korea Occupational Safety and Health Administration. Particularly, these industries have not been subject to active labor inspection. The Korea Occupational Safety and Health Agency is a public organization that has provided technical, educational, and financial support for occupational safety and health in the workplace, and has provided few programs to these economic sectors since the late 1990s.

It is difficult to interpret the figures of the construction sector. In spite of labor inspections and support programs, their effectiveness may not be continued because, the conditions of every construction site change. The fact that most construction workers are employed as temporary employees, and that construction projects are occur over a limited time, may also present difficulties in preventing occupational accidents. Another reason for the increasing trend of occupational accidents in the construction sector may be found in the characteristics of work in construction site. The construction sector is hazardous due to the various and complicated nature of work roles [13]. Working in high places, digging operations and live loads are very hazardous. Falling from a high place is the most frequent reason of deaths and severe wounds. Cave-ins, falling off vehicles or persons falling into digging areas, and digging the ground of the attached buildings are most frequently seen as accident reasons. The use of work equipment by untrained persons and unstable live loads are also very frequent reasons for accidents.

Furthermore, the construction sector is one of the most dangerous sectors in the United States. In 2004, construction workers were 7.7% of the United States workforce, but suffered 22.2% (1,278) of the nation's 5,764 reported work-related death [14]. Today, the construction industry workforce in many countries has been becoming increasingly older and it has been becoming more and more difficult to engage and retain young worker [15]. In comparison to the manufacturing sector the number of fatalities for construction is high.

When we analyze the distribution of the insured workers with respect to their ages, in occupational accidents occurring in Korea between 2001 and 2010, the high occupational accident rate for the group of 45 years old and above workers draw

attention. However, other studies have indicated that workers aged 24 and below have experienced more occupational accidents. In member states of EU, the occupational accident rate in this age group was the highest between 1998 and 1999 [12]. Yet other studies have reported different age groups as experiencing the most occupational accidents. In Turkey, 25 to 44-year-olds had the highest occupational accident rate [2]. Macedo and Silva [16] reported that 24 to 45-year-olds had the highest occupational accident rate in Portugal. This difference may be due to the difference of employment rate in each age group by countries. Working experience increases with age and risky behaviour in general is influenced by age. The incidence rate of fatal accidents has slightly decreased in the period 1996-2001 in all age categories, while for non-fatal accidents it has somewhat increased among the youngest workers in the EU [17].

The types of injuries that occurred as a result of occupational accidents between 2001 and 2008 in Korea are different from those in Turkey [2]. Amputation is one of the most increasing types of occupational injuries in Korea, whereas it is struck by a falling object in Turkey. Compared to the figure of fall from height in Korea, that of slip and trip was increased as ratio but that in Turkey accidents caused by anything crushing the body was increased. In the 15 member countries of the EU, the rates of injuries and superficial injuries are 42%, rates of dislocations, sprains, strains, and subluxations 28% and bone fractures 11% in 2000 [14].

The index value has included so many implications such as the change of population, industrial structure, aging of the workforce, social policy, etc. Because of the above this paper is a heuristic study, authors attempted to find some problematic working population in the perspective of occupational injuries. Authors have thought that the index value can show actual phenomena for the trend of injuries without any adjustment. Authors wish that some analytical paper should be carried out by some researchers in the future. For example, problematic population and economic sectors with a rising trend regarding the occupational accident rate should be analyzed intensively to investigate the causal factors of such a trend.

The trend of occupational injury may show some structural factors that have influenced occupational safety. Authors were trying to accomplish problem identification based on the trend of occupational accidents based on index value. Among the various indicators including the rate of occupational injury, the index value can be one of the criteria for identifying the problematic population for intervention. According to the result of this analysis, both occupational injuries and fatal occupational injuries first demonstrate the decreasing trends and

later increasing trends. The sectors including construction, forest, agriculture, and services had increasing figures, while the sectors of mining, electricity, gas & water, transport, storage & communication, and fishing had decreasing figures. Changing the profile of occupational injuries by the economic sector may confirm the reflection of the change regarding the industrial structure, especially increasing the service sector. According to the age, injured workers who are under 24 years old decreased, while those who are over 45 years old increased. This trend may be continued because that Korean society will rapidly become an aged society.

When taking a look at occupational injuries by reasons, using the year 2001 as a reference, the figures of occupational injuries resulting from amputation, the figure of slip and trip and the figure of fall from height mainly increased, whereas those resulting from caught in equipment, and traffic accidents decreased. However, when taking the figure of fall from height as a reference, the results were opposite. Both slip and trip, and caught in equipment had increasing trends and traffic accidents had increasing trend. Macro-economic change of a society may have influence on the worker's safety and health. Government regulation and guidance also should be changed according to the societal change such as ageing society and the change of the main economic sector for the national economy and labor market structure. More depth comparative analysis of occupational injuries and its yearly trend among the countries will be done by controlling other characteristics with sophisticated statistical analysis as a future study. This study also has some limitations for analysis and interpretation, such as the historical event and classification of economic sectors and type of accident.

## Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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