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Occupational Health and Safety (OHS) with the point of view Employees

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Abstract

Occupational diseases and accidents suffered by employees, cause many costs for the companies in direct and indirect ways. Instead of expanding their business by making new investments; companies spend their limited resources and power to cover these arising costs. Occupational diseases and accidents are social and economic wounds for the countries as well as the companies. For example, according to the reseach that Ministry of Labour and Social Security Training and Research Centre (Çalışma ve Sosyal Güvenlik Bakanlığı Eğitim ve Araştırma Merkezi - ÇASGEM) had made in 2010, annual cost of occupational accidents is 35 billion TL in Turkey.

Sole way to reduce these costs; creating company's awareness on Occupational Health and Safety (OHS) and to inspire their employees about this awareness. In this case, the actual practitioners of these rules, employees, have a very critical role. While managers demand from their employees to obey OHS rules and expect to bring it into a way of their life; most of the time employees may ignore OHS rules because of some reasons like finishing their job quickly, negligence and the view of protective equipment are limiting factors for their freedom and comfort. Especially the common view within Turkish people: "Nothing happens to me!"; causes unwillingness to use protective equipment.

The first aim of this paper is to examine what kind of costs that companies may face in the case of non-compliance to the OHS regulations on the overall dimensions. Another aim is to show how OHS regulations work in a packaging company named

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Amcor which operates in 43 countries around the world, and looking to OHS with the employees' point of view by applying a survey research.

Keywords: *Occupational Health and Safety, Costs of Occupational Diseases and Accidents, Occupational Health and Safety With the Point of View Employees*

JEL Codes: *J81, H77, M54*

1. Introduction

Health and safety is always one of the most important need of people as Abraham Maslow stated them as 2nd level of priority just after physical survival needs in the Maslow's Hierarchy of Needs. When the business world faced up to the high direct and indirect costs when their employees have occupational accident or illness, they realized the importance of this reality and positioned OHS to the very top of their organizational strategy. There should be linked with the organization's strategic business objectives to gain competitive advantage by promoting employee commitment, the company's image as a preferred employer, reduced costs and increased productivity. Accidents and illness result in physical and mental suffering and are major cost for employers and the community because of the loss of experienced workers, increased premiums for workers compensation insurance and decreased morale (Stone, 2002: 642).

According to International Labour Organization (ILO) %78 of occupational accidents result from unsafe behaviors of employees and due to the researches ultimately 98% of the of occupational accidents caused by human errors (Çelik and et al., 2009). Responsibility for employee wellbeing is shared by line managers, HR managers, unions, and the employees themselves. Ultimate responsibility, however, rests with the employer. This is because it is the employer who has the greatest control over the employee's working environment (Stone, 2002: 643). Major areas considered under the rubric of health and productivity management (HPM) in American business include absenteeism, employee turnover, and the use of medical, disability, and workers' compensation programs (Goetzel, Guindon, Jeffrey and Ozminkowski, 2001: 10).

Work-related injuries and illnesses represent a waste of the organization's human resources, which can't be tolerated. Losses through accidents at work come straight of an organization's bottom line. Minimizing these losses means increased profit. For the financial success of the organization, health and safety

must be regarded as an integral part of human resource management (Stone, 2002: 651).

The country which has undergone the worst conditions in terms of the health and the security of the servers among the EU and candidate countries is Turkey. Therefore the harmonization process to the legislation of the EU for the health and safety of the servers has leaded to a number of adjustments. Along with the labour law no. 4857 and in addition to the headings mentioned in 1475, it was entailed to have an on-site doctor, an expert on the health and safety of the servers and a health and safety unit for the businesses considered to be an industrial that employ more than 50 workers. Besides, it is stated in the law that the employees should be trained about the health and safety of the servers (Yılmaz, 2009:61 as cited in Kılıç and Selvi, 2009: 905).

2. Occupational Health and Safety Economics

2.1. Evaluation of Occupational Diseases and Accidents Costs

" To those who say that safety costs money, I would say that the lack of it costs more." (http://osha.europa.eu)

Paul Lampit, Director of Insurance Services
Taylor Woodrow Pl

Although work accidents engender costs to the employer which are substantial and rising, most firms seem unable or unwilling to control such wastage. Motivation to engage in prevention activities can be viewed as either voluntary, incentive or coercive, with the first as a preferred source. An extensive cost classification is provided: prevention, accident and OHS costs; fixed and variable insurance costs; direct and indirect costs. The authors hypothesize an informational deficiency by which the typical employer underestimates his accident costs and therefore the potential profitability of prevention outlays. The hidden or indirect costs, which are uncaptured by the accounting system or not attributed to accidents, are grouped under six headings: wage costs, material damage, administrator's time, production losses, other costs and intangible costs Broody, Letourneau and Poirier, 1990: 255).

Organizations with healthy and safe work environments have lower insurance and benefit costs and reduced downtime and experience less damage to plant and equipment. The benefits of a safe working environment, safe work practices and informed management are improved personal safety, reduced overheads, reduced claims, insurance premium control, reduced uninsured

losses, reduced retraining and relocation, improved production, reduced spoilage and wastage, reduced machine shut-down, reduced re-work, compliance with OHS act requirements (Stone, 2002: 644). The true costs of occupational accidents and illnesses would be higher if the hidden costs were routinely reported (Eimicke and Klimley, 1987: 153).

When the literature reviewed, in generally it is seen that the costs are divided in to two basic categories as direct costs and indirect costs (Yükçü and Gönen, 2009: 938-939):

Direct Costs are medical costs, compensations costs, costs of issue, social insurance contributions, maintenance and repair costs for damaged machinery, rehabilitation costs, maintenance costs of vinctim's house, funeral costs, and other costs like police, fire engine, ambulance, emergency...etc.

Indirect Costs are generally divided in to three parts like loss of labor force, loss of production and the losses of being behind on orders. When analyzed on the basis of loss of labor force, indirect costs differ due to victim's inability to work, first-aid given to injured person, breaks taken by victim's colleagues, the time spent by the managers and the supervisors to the inspection of the accident, the reorganization and allocation of the occupation which the victim is responsible, the time spent in legal proceeding. When we analyze the indirect costs on the loss of production side, the costs depend on to the suspension of production because of accident, breakdown of work schedule and work flow, breakdown of machinery, the damage in materials and raw materials, decrease in efficiency. The losses of being behind on orders are the firm's loss of reputation, fine paid for overdue delivery, and the loss of the premiums for early delivery.

Another type of categorization of the costs that a business organization face when occupational accidents and illness occur as following (Eimicke and Klimley, 1987: 153-154):

People injured: Among the items that must be considered here are the medical expenses paid out of the injured employee's pocket that were not covered by insurance but have been reimbursed by the company; lost time wages paid to the injured party; and other expenses, for example, damages awarded to the injured person resulting from a lawsuit against the company. The dollar amounts for more than one victim of an incident can be reported.

Lost Time: A very significant hidden cost that is seldom reported is lost time. A simple formula, man hours multiplied by the pay rate per hour for each type of employee, is provided to assist the investigator in analyzing the costs. Depending on the type of the accident and the extent of injuries sustained by the victim, the other workers may have been unable to use the work area for a substantial length of time or they may have been so upset by the incident that they were unable to resume working immediately following the accident. The lost time expenses for the non-injured may total a significant amount.

Make up time: Again using the simple formula man hours multiplied by rate of pay per hour per employee, the cost of resuming the production schedule is tallied. The two basic factors to be considered are the cost of overtime required to make up lost production and the straight time cost of extra people hired to make up production. The overtime costs are generally incurred immediately after the incident while the cost of hiring additional worker(s) may be an on-going expense, depending on the length of time the injured employee(s) is away from work.

Miscellaneous Non-Labor Expenses: These include replacement or repair of damaged machinery, replacement of destroyed materials, additional overhead – heat, light, rental of temporary space, and the value of contracts lost due to the accident. Other factors could include adverse public attention resulting from the accident, fines levied by government agencies policing safety hazards, costs associated with revising work procedures, and retaining workers.

Many deaths, injuries, and illnesses occur because of safety violations, poor equipment design or negligence. General Motors (GM) was fined $1.94 million for safety violations by the Occupational Safety and Health Administration (OSHA) in 1994. The Union Carbide accident in Bhopal, India, for example, which killed over 4000 people in 1984, was considered by most experts to be a result of equipment design flaws that could have been avoided. More than 40 lawsuits worth billions of dollars were filed against the company (Bernardin and Russel , 1998: 399). More examples should be given during the companies don't take any preventions to the occupational accidents and illnesses. Orica Australia, a leader in safety, reduced injuries by more than 50 %, from 20 per million working hours to less than 9 per million working hours, within five years, for total saving of about $3 million. Organizations such as Du Pont, Orica and Sagasco see the value of workplace health and safety. After its takeover of Fibremakers, Du Pont reduced its Victorian work care payments by $700 000 a year by reducing the avarage number of accidents (Stone, 2002: 645). Rolls

Royce saved 11 million pound through improved absence management (Armstrong, 2006: 831).

According to Brady and et al. "It is increasingly recognized that typical corporate budgets may seriously underestimate total health and safety costs for that corporation. In some instances, this underestimation reflects omission of some of the direct health care cost drivers. However, another significant reason for the underestimation is that all of the extensive, and diverse, indirect costs of illnesses and injuries are not fully considered in planning for health and safety costs. This deficiency occurs with both occupationally related conditions and with health problems that are not related to work activities. Although some investigators consider indirect costs to be relatively negligible, others have suggested these costs may be two to ten times the direct health and safety costs. This disparity is, in part, a reflection of the difficulty in defining and measuring indirect costs. Whereas direct health care costs can be measured with some degree of certainty, the indirect costs are much more difficult to assess. The difficulty is compounded by the tendency of different investigators to define "indirect costs" differently. Definition difficulties, problems in measurement, and the effects of varying work settings provide particularly complex challenges to financial planners (Brady et al., 1997: 226). The sources and types of health and safety costs may vary from company to company and from industry to industry, but, in general, the major components will remain the same (Brady et al., 1997: 228). The reported significance of indirect costs in total health and safety varied markedly. Berk et al 1 suggested that indirect costs approximated 50% of total illness costs, whereas Rice et al 2 noted that indirect costs may be as low as 20% of total costs, depending on the specific disease condition. Rice et al observed that, in 1963, indirect costs were three times that of direct costs, but by 1980 direct costs had increased so much that direct costs were slightly higher than indirect. Other investigators reported much higher proportionate indirect costs. As noted by Anstadt et al, 3 estimates for such costs have ranged as high as ten times direct costs. Anstadt et al chose a value of twice direct costs, which the investigators considered conservative (Brady et al., 1997: 227)."

Companies that put OHS to the top priority, define OHS indicators, Key Performance Indicators and its outcome due to their strategies. It is seen key measures of OHS evaluation at the table below:

Table 1: Key Measures for the Evaluation of OHS at the Business

Indicator	Name	KPI Measure	Outcome
Lag 1	LTIFR - Lost Time Injury Frequency Rate (excluding commuting to / from work)	Total Number of Lost Time Injury (LTI) Events / million hours worked (contractors excluded)	Reduce Injuries and Injury Costs
Lag 2	LTISR - Lost Time Injury Severity Rate (excluding commuting to / from work)	Total days of LTI / million hours worked (contractors excluded)	Reduce Injury Severity and Injury Costs
Lag 3	COMCARE reportable rate (or Workcover, as applicable)	Number COMCARE reportable events / million hours worked	Reduce Injuries and Injury Costs
Lead 1	Near Misses	Number of near misses reported / Number of LTI	Reduce Injuries and Injury Costs - Lead Indicator
Lead 2	Investigations completed (%)	Number investigations completed at end of each period / Number of investigations required	Reduce Injuries and Injury Costs - Lead Indicator
Lead 3	Safety Inspection Actions Closed (%)	Number safety inspection actions closed within a month / Total Number of safety inspection actions	Reduce Injuries and Injury Costs - Lead Indicator

Source: Benchmarking Partnerships, http://www.benchmarkingpartnerships.com.au/ohs_kpi.pdf , 10.03.2011).

2.2. Evaluation of Packaging Sector in Terms of Occupational Health and Safety and the Risk Assessment

Risk assessment is one of the newer approaches to health and safety which concentrates on accident prediction as opposed to the more traditional prevention of recurrence after the event (Booth 1985). This approach reflects current concerns that expenditure on health and safety matters should be cost effective (Torrington and Hall, 1998: 153).

As it is stated by Safety and Health at Work European Good Practice Awards in 2009, "Every year millions of people in the EU are injured at work, or have their health seriously harmed in the workplace. That is why risk assessment is so important, as the key to healthy workplaces. Risk assessment is

a dynamic process that allows companies and organizations to put in place a proactive policy of managing workplace risks. A risk assessment is a careful examination of what could cause harm to people, so that you can decide whether you have taken enough precautions or need to do more to prevent harm. The aim is to make sure that no one gets hurt or becomes ill. If a risk assessment is not carried out before implementing good practice information, there is a danger not only that risks may not be controlled but also that there may be a waste of resources. The general principles of prevention are: • Avoiding risks • Evaluating the risks which cannot be avoided • Combating the risks at source • Adapting the work to the individual, especially as regards the design of workplaces, the choice of work equipment, and the choice of working and production methods • Adapting to technical progress • Replacing the dangerous by the non-dangerous or the less dangerous • Developing a coherent overall prevention policy which covers technology, work organization, working conditions, social relationships and the influence of factors related to the working environment; • Giving collective protective measures priority over personal preventive measures, and • Giving appropriate instructions to the workers."

Risk assessments are concerned with the identification of hazards and the analysis of the risks attached to them. The purpose of risk assessments is, of course, to initiate preventive action. They enable control measures to be devised on the basis of an understanding of the relative importance of risks. Risk assessments must be recorded if there are five or more employees.

There are two types of risk assessment. The first is quantitive risk assessment, which produces an objective probability estimate based upon risk information that is immediately applicable to the circumstances in which the risk occurs. The second is qualitative risk assessment, which is more subjective and is based on judgment backed by generalized data. Quantitive risk assessment is preferable if the specific data are available. Qualitative risk assessment may be acceptable if there are little or no specific data as long as it is made systematically on the basis of an analysis of working conditions and hazards and informed judgment of the likelihood of harm actually being done (Armstrong, 2006: 833).

When the hazards have been identified it is necessary to assess how high the risks are. The HSE suggests that is involves answering these three questions: What is the worst result? How likely is to happen? How many people could be hurt if things go wrong (Armstrong, 2006: 835)?

Risk assessment should lead to action. The type of action can be ranked in order of potential effectiveness in the form of a "safety precedence sequence" as proposed by Holt and Andrews (Armstrong, 2006: 835):

- Hazard elimination – use of alternatives, design improvements, change of process.
- Substitution – for example, replacement of a chemical with one which is less risky.
- Use of barriers – removing the hazard from the worker or removing the worker from the hazard.
- Use of procedures – limitations of exposurei dilution of exposure, safe systems of work.
- Use of warning systems – signs, instructions, labels
- Use of personal protective clothing – this depends on human response and is used as side measure only when all other options have been exhausted.

According to the OHS risk group list regulations which has been published by Ministry of Labour and Social Security in 2003, packaging sector belongs to 4th risk group in Turkey. This scale varies from 1 to 5 which when the risk number increases the risk increases.

3. Evaluation of The Company's Occupational Health and Safety Applications in Terms of Employees

Before analyzing the occupational diseases and accidents costs, OHS practices of Amcor and the point of view employees, it should be better to give a brief information about the company and it's OHS objectives to provide a visualization of the atmosphere in the company.

Amcor is known as a global packaging leader with 35.000 co-workers, 75.000 shareholders, more than 300 sites in 43 countries (http://www.amcor.com/about_us/). Amcor's history dates back to the 1860s. Amcor which is originally an Australian company, has two factories for

production in Turkey. One of them is in Istanbul and the other is in Izmir. Our research has been realized in Amcor's Izmir factory. Amcor Izmir makes the production of tobacco packaging with 189 employees including 25 white-collar employee. "Amcor's aim is to ensure that no one who works for Amcor is ever injured."

3.1. What were the Costs of Occupational Diseases and Accidents to the Company?

Thanks to packaging sector is in the 4th risk group and Amcor's high quality standards on OHS, there has never happened any accidents which results in death in Izmir factory. Also, the management of the company states that there is no very serious occupational disease which their employees faced.

At the interview with Bora Baykara who is the Human Resources & OHSE Manager of Amcor Tobacco Packaging Izmir, he stated that between the years of 1994-2000 (Before OHS regulations), as Amcor Izmir, they paid about 10.000 Euro yearly based to cover direct expenses.

After OHS regulations has begun to be applied by Amcor, they did first risk analysis. According to Amcor Izmir's Inventory of Environmental Health and Safety Risks reports, Amcor divides the risks of the jobs in terms of the processes.

You should see a Risk Analysis sample of Amcor's Press Preparation process of packaging below.

Although the given example is just including "Press Preparation", there are four more steps like "Press Process", "Hull Pan Wash Process", "Maintenance Process" and lastly "Storage Process" each of their risk analysis had been realized by Amcor.

As it seen at the Inventory of Environmental Health and Safety Risks table, each process includes a lot of risks inside like fire, explosion, irritations, hearing loss and more. Because it is impossible not to use the required raw materials and to stop running processes, you can just minimize the risks before they create a potential threat. The important clue here is, being proactive and preventing accidents by defining the probabilities and taking preventions before accidents happened like Amcor does.

Table 2: Amcor Inventory of Environmental Health and Safety Risks at the Process of "Press Preparation"

Environmental dimensions / health and safety dangers	**Potential emergent situations**	**Effect of environmental and health safety**	**Legal obligations**	**Probability / risk**	**Precautions to be taken against to emergency situations**
Solvent vapor, flue gas emissions	Emission over legal limits	Air pollution	EKHKY	B II	Technical review / precaution up by maintenance team
Paper / carton waste	Uncontrolled disposal, fire risk	Earth pollution, injury, waste increase	KAKY	CII	Fire instractions and waste management instructions
Solvent / ink use	Waste / leak risk	Earth / water pollution	TAKY	AII	Waste limitation procedure
	Fire risk	Injury and earth / water pollution	POTÇKY	AII	Fire instractions
Static electricity	Fire, explosion risks	Injury and earth / water pollution	POTÇKY	AII	Fire instractions
Solvent / ink - skin and eye contact	Irritation being	Chronic diseases	KMÇSGÖ	AIV	Use of protective equipment, eye shower
Solvent exposure	Working with solvent vapour over the legal limits	Health problem	KMÇSGÖ	AIII	Use of protective equipment, eye shower, periodic health control
Heavy lifting	Give harm to body as a result of false and sudden movements	Chronic diseases	ETIY	BIII	Contact with the work place physcian, medical procedure, the use of weight lifting belt
Noise	Hearing problems by time in mechanical environments when 80 db over	Hearing loss	GKY	AII	Use of protective equipment

For each risks, Amcor arranges its OHS practices according to legal obligations. At the legal obligations column, you should see some codes which are all explained below:

Table 3: OHS Risk Analysis Codes

EKHKY	Industrial sourced air pollution control regulations
KAKY	Solid waste control regulation
TAKY	Dangerous waste control regulation
POTÇKY	Protection of employees from the risks in explosive atmospheres
KMÇSGÖ	Health and safety measures with the use of chemicals
ETİY	Carrying by hands works regulations
GKY	Noise control regulations

At the "Probability Risk" column, you should see some codes which explains the probability of occurrence, the frequencies and the possible effects of the event according to the Risk Matrix.

Table 4: Risk Matrix

Probability of Occurrence / Frequency of the Event	**Code**	**Effects**	**Code**
frequent 1x / day	A	Minor	IV
partially common 1x / month	B	Moderate	III
sometimes 1x / year	C	Critical	II
rarely 1x / 5 year	D	Disaster	I
very rare 1x / 30 year	E		
not possible in practice > 1x / 30 year	F		

Risk is in everywhere that people have to work together in a limited area, with limited resources and of course with the equipment's which always in a movement. When people come together, the risk appears and you can't run

away from the risks as well as you can't ignore them. The important side is to keep the risks in acceptable level.

3.2. What Kind Of Practices Has Been Put in by the Company to Reduce These Costs?

Although Amcor Izmir is active since 1994, the company begins to use OHS practices in 2004. Because Amcor is a global group company, it applies group norms as well as Turkey's legislation requirements.

The safety and environment strategies build upon the processes and infrastructure already in place within Amcor, including (http://www.amcor.com/about_us/Sustainability2010/Workplace/105151604.html):

Standards – The Amcor standards are the mandatory, minimum requirements for all Amcor operations and apply to all co-workers, visitors and contractors on Amcor sites.

Reporting – The Amcor Board requires monthly reports from the Business Groups on compliance with these standards and local legislation, in addition to reports on injury statistics.

Auditing – Internal audits of the management systems are conducted at least annually, and external audits are conducted every three years.

Organizational structure – In addition to the Executive Director of Occupational Health, Safety and Environment (OHS&E) role within the Corporate function, each of Amcor's Business Groups has an OHS&E Director. These individuals are supported by regional, plant and office safety representatives and committees.

Global Steering Committee – This committee comprises the OHS&E leaders from within each Business Group and Amcor Ltd. The Steering Committee meets at least every two months.

Till here, we looked at to the Amcor International OHS standards. When we turn our eyes from Amcor global perspective to Amcor local perspective, Amcor Izmir uses both global norms of Amcor and the local requirements in Turkey.

Bora Baykara, Human Resources and OHSE Manager of Amcor Izmir, explains their OHS applications as Amcor Izmir during the interview as following:

"Basically, the priority activity of the OHS, minimizing the probability of occupational diseases and accidents occurrence by developing the understanding of acceptable risk level in every activities and process, stating risk analysis before the risk turns into danger and being pro-active not re-active by aiming always continuous improvement. Have been documented and certified OHSAS 180001 and ISO 14001 Integrated Management Systems is available, and in its parallel with the policy, goals and objectives expanding OHS aims to be a part of daily life.

In our business, every meetings begin with the OHS issues by aiming to keep active our employees in terms of creating awareness and sensitivity. Each level of the visitor and/or subcontractor is welcomed into the business after receiving the standard OHS orientation.

In terms of being proactive, we keep some tools like the records of near miss, first aids, behavior audits, safety observation audits and trying to identify risk areas or elements before occurrence. By daily machine checklists on the shifts, monthly field audits and results we aimed to make OHS is always in the center of our daily life. External audits are considered always as a part of continuous improvement. Customer audits which is always done once in every three years, integrated management system of annual external audits which is made by certification institutions and Amcor's group managers' unplanned visits are accepted as important tools for capturing the opportunity of improvement. All the audits findings are processed into the action plan and applied. It is very important to inform instantly our employees about current OHS issues either positive or negative, determination of current situation and keeping employees awareness active by monthly OHS meetings, monthly shift communication meetings and weekly shift OHS meetings. Continuity and permanence of the system in use, providing continuous support of management in every level, and the integration of OHS issues to reward and recognition programme which is applied in the factory are supported."

Amcor gives a high importance to the trainings. For example in 2010, Amcor Izmir give 16 hours training per employee and % 41 of this training is

about OHS. % 49 of these trainings is external and % 51 is internal. For the 2011 Amcor is planning to give 24 hours training per employee.

3.3. How was the Employees' Point of View to These OHS Practices?

Till this part, we have just look in to the system of OHS at the point of view the company, Amcor. In this part, we are wearing the glasses of employees and trying find the well-matched and gap areas between the company and employees sides.

Research Questions

Because the real applicants of OHS is the employees, it is important to analyze their attitudes and approach to OHS. To analyze this issue, this research aim to reach some findings and set a light to OHS rules practices. During the research, it is aimed to find some answers about personal and external factors which effect the employee's usage of protective equipment and obeying OHS regulations.

Aim and Method

Two of the main methods of scientific research are referenced in this study. First is fundamental research techniques which is one of the positivist research techniques. Theoretical studies about the subject in scientific literature has been scanned to create a structure for the study.

The second method is applying a field research on the issue which is analyzed theoretically. For the field research, a questionnaire has been arranged which includes 41 questions and is applied to 147 employees in Amcor Izmir factory. In the questions, the following types of scales have been used: demographic, nominal, ordinal, likert and open-ended questions. Statements were framed in the format of likert scale ranging from strongly disagrees to strongly agree (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree). The data which is gathered by the questionnaires is evaluated by the programme SPSS 15.00.

At "The Distribution Concerning the Employee's Features" table below, you should see the demographics of our sample.

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Table 5: The Distribution Concerning the Employee's Features

			Frequency	Percent	**Valid %**	Cumulative Percent
Educational Level of the Employees	Valid	Primary School	14	9.5	9.7	9.7
		Middle School	9	6.1	6.2	15.9
		High School	84	57.1	57.9	73.8
		College	24	16.3	16.6	90.3
		Bachelor	13	8.8	9	99.3
		Master	1	0.7	0.7	100
		Total	145	98.6	100	
	Missing	System	2	1.4		
	Total		**147**	**100**		
Marital Status of the Employees	Valid	Married	97	66	66.4	66.4
		Single	48	32.7	32.9	99.3
		Other	1	0.7	0.7	100
		Total	146	99.3	100	
	Missing	System	1	0.7		
	Total		**147**	**100**		
Do you have any children?	Valid	Yes	77	52.4	55	55
		No	63	42.9	45	100
		Total	140	95.2	100	
	Missing	System	7	4.8		
	Total		**147**	**100**		

		N	Minimum	Maximum	**Mean**	Std. Deviation
Employees Age Distribution / Work Experience in Amcor / Total Work Experience	Work experience at the company year based	140	0.3	21	5.629	4.9276
	Total work experience at the companies year based	137	0.3	30	9.659	5.8947
	How old are you?	134	23	49	32.52	6.118
	Valid N (listwise)	124				

		Age	Frequency	Percent	**Valid** %	Cumulative Percent
Age Grouping	Valid	22-35	92	62.6	68.7	68.7
		36-49	42	28.6	31.3	100
		Total	134	91.2	100	
	Missing	System	13	8.8		
	Total		**147**	**100**		

Because most of the participants are blue-collar employees of Amcor, their educational level is weighted as low as it seen on the table. Employees' marital status and having children are recognised as important variables which can affect employees point of view to OHS. As it seen on the table, most of the employees (as %66,4) are married, and %52.4 have children. Because it is demanded from the employees to answer the questions in the questionnaire by considering Amcor, it is important to know their work experiences length in Amcor to make them healthier comments. According to the table, the participants' avarage work experience in Amcor is nearly 6 years. According to frequency % 68.7 is of survey participant is between 23-35 and % 31.3 is between 36-49. We should say from here, Amcor's has a young staff.

When we consider the limitations of the study, the findings just reflect OHS with the point of view Amcor Izmir's employees which is the sample of the research. So the findings should be a powerfull clue which show the employees approach to OHS but it may not be accurate to make generalization.

Analysis and Comments

The following analysis techniques have been used to test the hypothesis: Correlation Analysis, T-test, Variance Analysis (One Way ANOVA), Friedman, Kruskal Wallis and Regression Analysis.

To measure the reliability of the questionnaire, first of all Reliability Analysis has been used and Cronbach's Alpha value is found as high as 0.960.

Findings on Close-Ended Questions:

To measure if the degree of involvement to "I always use protective equipments which are given in a correct way." thought differs according to educational level of employees, Descriptive Statistics has been used. In generally participants are agree with the idea at the avarage of 4.48. (But there is a tendecy to the idea of "Definitely Agree"). According to the rank table, employees who are graduated from primary school and master programme more seem to agree with the idea. But to test significance of the evaluation, Kruskal Wallis test has been used. Because the significance level is 0.184 ($p>0.05$), there is no difference which can be considered as significant between the educational level of employees and the idea of "I use protective equipments which are given always and correctly".

To test OHS trainings influence on the protective equipments correct and constant use of employees, Regression Analysis has ben used. The independent

variable (OHS trainings) explains the effect of the dependent variable (Employees' participation to the correct and constant usage of protective equipments) at the rate of % 26. To test the measure of comment significance, ANOVA analysis has been used. According to the test significance level is p=0.000 (p<0.05), we should inferred OHS trainings motivate employees to use the protective equipments constantly and correctly.

Table 6: Coefficients (a)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta	B	Std. Error
(Constant)	.749	.429		1.745	.084
All the possible and potential problemeatic areas are conditioned and defined in advance	.141	.100	.143	1.415	.160
Occupational Health and Security terms are the part of our company's culture and tradition.	**.257**	.100	.236	2.564	**.012**
My employers motivate us about OHS with suggestion programs, competitions...etc	-.041	.135	-.038	-.304	.761
Employees who give information about OHS are rewarded	-.013	.116	-.012	-.110	.913
We have enough information about our rights and responsibilities	.155	.099	.176	1.574	.118
I feel myself in safe at my company	-.028	.097	-.028	-.292	.770
The precautions which are taken to prevent occupational accidents at enough level	-.082	.128	-.073	-.641	.523
The precautions which are taken to prevent occupational sickness at enough level	.009	.104	.008	.083	.934
All of us know what to do at the time of occupational accident.	.132	.081	.151	1.640	.104
I can easily practice OHS rules which I have learnt at the trainings	**.264**	.126	.244	2.105	**.037**

a Dependent Variable: I can easily recognize if there is something wrong with the work about OHS

To measure the employee's recognization if there is something wrong about OHS at the workplace (dependent variable) is affected by the independent variables like shown at the Coefficients table below, Multiple Regression Analysis has been used. According to the Model Summary, related independent variables explain %0.43 of the dependent varible. Because significance is below 0.05, just "OHS is part of our company's culture" and "practicing easily OHS rules which employees learnt at the trainings" variables between the all

variables counted, have effects on employees' recognizing if there is something wrong with the work about OHS. Between these two variables, "practicing easily OHS rules which employees learnt at the trainings" has the biggest effect on the dependent variable.

To test recognizing easily when there is something wrong with the work on OHS and participation to the idea of OHS is a part of company's culture have a correlation or not, Correlation Analysis has been used. According to test, there is a positive and significant correlation between these two variables ($p<0.05$). This result also supports the findings of a research on the effect of organizational safety climate upon the safe behaviors which is applied in 2009 by Sadullah, Ö. and Kanten, S.

To test employees feeling in safe in the company have or doesn't have any correlation with these variables: "Receiving enough level of training and information about the risks of the job, "Taking precautions against to repetitions of the accidents", "Health Control Service which is provided by the management", "Work place' organization according to the health and safety of employees", "Health services which is served by physician offices is at enough level", Partial Correlation analysis has been used. Although all these variables has a correlation under the control variable, just one of them should be considered as a high correlation: employer offering health control service and precautions are taken against repetitions of the accidents.

The test the participants are neither agree nor disagree with the variables shown at the table below, One Sample Statistics test has been used. According to the analysis, for each variables, the participants agree (also they are tend to choose "Definitely agree") with the given thoughts except "External OHS trainers and specialists come to our company to inform us about OHS". Participants are neither agree nor disagree with the idea that external trainings are enough but they are tend to be agree. We can say that, except external trainings, employees are happy with the OHS regulations of Amcor. Because each questions significance level is equal to 0.00, there is a significant result of the test.

Findings on open-ended questions

To provide an atmosphere for employees to express their opinions freely, there are two open-ended questions have been directed in the questionnaire.

Table 7: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
I have received enough level of training and information about the dangerous side of my job and its possible effects	147	4.37	.703	.058
I can easily recognize if there is something wrong with the work about OHS	142	4.15	.753	.063
My employer offers me health control service benefits	147	4.47	.675	.056
Reports of all occupational accidents are kept regularly	144	4.43	.665	.055
Precautions are taken against repetitions of the accidents	147	4.54	.695	.057
All the possible and potential problemeatic areas are conditioned and defined in advance	147	4.23	.803	.066
All of us know what to do at the time of occupational accident.	144	4.05	.856	.071
Accidents that causes serious disabilities or sickness are not happened often at my workplace	144	4.29	.907	.076
There is no occupational accident happens which causes death at my workplace	146	4.49	.896	.074
Our ideas and suggestions are asked constantly at my workplace	145	4.47	.646	.054
Our suggestions and complaints that are reported by us are taken into account and problems be solved.	147	4.35	.764	.063
Not only the most risky areas but also each working units are audited regulary	146	4.36	.786	.065
I always use correctly the machines and equipments which I am responsible for	146	4.38	.676	.056
I use protective equipments which are given always and correctly	147	4.48	.645	.053
When there is something wrong or dangerous in work place I inform the responsibles immediately	147	4.51	.554	.046
Occupational Health and Security terms are the part of our company's culture and tradition.	145	4.51	.678	.056
My employers motivate us about OHS with suggestion programs, competitions...etc	146	4.42	.672	.056
Employees who give information about OHS are rewarded	143	4.43	.708	.059
We have enough information about our rights and responsibilities	143	4.14	.901	.075
External OHS trainers and specialists come to our company to inform us about OHS	145	3.91	1.047	.087
OHS training we received good quality and sufficient	145	4.16	.805	.067
I feel myself in safe at my company	143	4.34	.721	.060
I have never had a serious occupational accident or	144	4.42	.849	.071

health problems during the period of my work life at this company				
My work place is organized according to consider my health and security	146	4.16	.879	.073
I can easily practice OHS rules which I have learnt at the trainings	145	4.30	.680	.056
Some conditions in my working area like size, suitability for the purpose, lighting, air conditioning, heating are in enough level	146	4.24	.873	.072
The precautions which are taken to prevent occupational accidents at enough level	146	4.25	.680	.056
The precautions which are taken to prevent occupational sickness at enough level	146	4.27	.710	.059
Health services which is served by physician offices is at enough level	146	4.19	.816	.068

First it is asked “Do you think that all the employees always obey OHS rules in Amcor?” % 87 of participants said “yes” while %13 said “no”.

Table 8: Personal and External Factors

NO	Personal Factors	External Factors
1	Working in a hurry not to lose time	Quick job demand of management / less wastage & more production
2	Being careless / abstractions / lack of adaptation	Ignoring subcontractors non-observance
3	Unconsciousness of employees	Explanations are not enough / complicate works
4	Absentmindeness and forgetfullness	Lack of company trainings on OHS
5	Difficult to break old habits	Some chief's attitudes and approaches / Colleagues problems
6	Employee's lack of knowledge/education	Discrimination within sections
7	Impassivity of employees	Non-scheduled way of doing job
8	Bringing inhouse problems to work	Lack of audit / control / sanction
9	Being indolent	When managers want to set something as a rule, they don't ask if we will work comfortable.
10	Equipments make our work slowier.	We are under constant monitoring
11	Beileve in probabilty of accident is low.	
12	Not loving job	
13	Stress	

Table 9: Suggestions of Employees to make all employees obey OHS rules

Trainings / courses / seminars / meetings should be more frequent. Extra training hour for nonobservance employees.
Award / Penalty System. Awarding who never had accident. Giving small awards to encourage employees obeying rules on monthly basis. Incentive bonuses.
More controls and audits.
Warnings (templates, lights, voice system, signs, notes to billboards, dialogues which emphasize OHS importance), slogans and banners.
Protective equipment: Management should provide quality protectors and missing protectors. Increasing number of the protective equipment. Giving more importance to the comfort of protective equipment. Prettifying protective equipment in terms of color/shape .
Showing employees bad results they may face when they don't obey OHS rules by videos and making explanations. Accidents which happened before should be shown as examples. LCD which shows OHS importance films in rest room.
Motivating employees about OHS / instead of sanctions.
Suggestion System: Taking employees' opinions to find better solutions or alternatives.
Creating awareness / increasing consciousness and care of employees. Relax and unhurried working methods training.
Providing safe work style / practice / non-stress / relax / healthy work environment.
First managers should obey rules to set example. Managers who need to enter production area, should apply OHS rules.
Creating self-control within employees. Setting a mechanism which is based on controlling each other. Employees are responsible for each other.
Rules should make work life easier. / Only the rules which can be applied should be set. / Application of necessary rules instead stereotype.
Stating risks / explaining related division risks which they may face more.
Professional OHS training outsource.
Arranging questionnaires to increase awareness and getting the idea of employees.
Health personnel should have more knowledge. Even night shift doctor needs to be available. More frequent and detailed health controls should be made.
Management must be strict on rules. Never pass over.
Manager-employee dialogue should be better.
Rules should be explained simplier/easier/comprehensive.
Cut penalty points for each non-used equipment. Scoring based system.
Some equipment are disturbing and risky to cause diseases (like headphones).
Arrangements of working hours. Controlling excessive work harms to the employees.
Face to face dialogues should be more effective.
Field observation tours.
Testing employee' anxiety
Awarding as a group when all obey without any missing.
More deterrent rules should be set.
Work delays caused by managers shouldn't be uncharged of employee. Managers shouldn't be oppressive.
Providing employees cupboards to put their equipment.
Appreciating employees who obey OHS rules.
Going on to work with employees who obey rules.

Camera system should be set for necessary areas
Good sample personnel selection
Exams should be made to measure efficiency of a training after given.

Then we asked their opinions on "Why employees don't obey OHS rules?" for the participants who said "no" as an open-ended question.

Participants emphasized personal and external factors which influence employee's obeying to OHS rules as ranked according to their importance:

Then to all participants, the question of "What can be done to make all employees to obey OHS rules totally?" has been directed, as an open-ended question.

The suggestions of employees should be seen at the table below which is ranked by their importance level from the most reoccupations to the least.

It is seen that, subcontractors are also an important cause of complaint between the employees according to the research. When employees have seen that most of subcontractors neglect OHS rules, they begin to think the management discriminate. So the management should be very strict about the rules and never pass over. This finding is also supported by Dwyer in 199, has identified disorganization which results from subcontracting as an important source of injury at work. Subcontractors are often engaged in horizontally (multiple subcontractors) and vertically (pyramid subcontracting) complex relationships (Mayhew, Quinlan and Ferris 1997: 167).

3.4. What are the Results of These Practices on the Company's Cost and Employees?

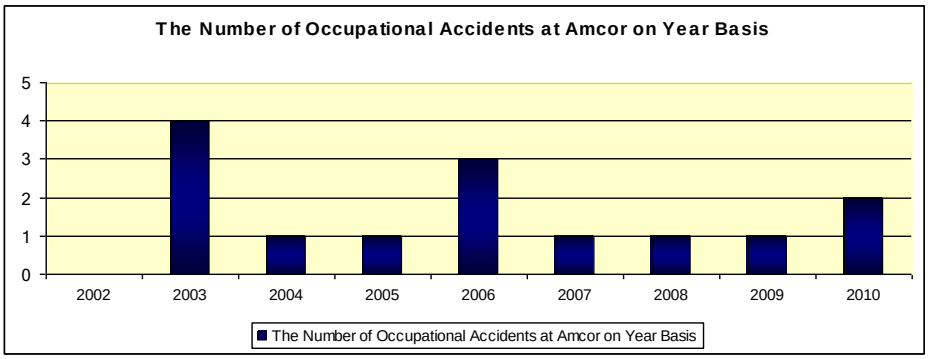
Amcor Izmir begins to apply OHS in 2004. As it seen on the graphic, the number of occupational accidents begins to decrease in general after OHS regulations. There are a few occupational accidents in Amcor Izmir factory on yearly based which is shown at the graphic below.

There is no death resulted occupational disease or accident and no very serious injures thanks to strict OHS regulations in Amcor and their employees awareness.

When an accident occurs during the working hours, their OHS costs are limited with the first intervention, ambulance and the treatment. Because there is no death resulted accident or disease Amcor Izmir has never payed a direct cost like indemnity.

According to Bora Baykara's interview, while OHS costs were about 10.000 Euro (direct costs) annual till 2000, after OHS regulations this amount is decreased to 3.000 Euro (direct costs).

Table 10: The Number of Occupational Accidents at Amcor on Year Basis



4. Conclusion

There is always a conflict between the needs of the employer to push for increased output and efficiency and the needs of the employee to be protected from the hazards of the workplace. The importance of health, safety and welfare from the employees' point of view is clear – Their lives and futures are at risk (Torrington and Hall, 1998: 522-524).

Organizations have tried a variety of strategies directed at reducing or eliminating unsafe behaviors at work. These programs can be classified into four general ideas: personnel selection, employee training, incentive programs, and safety rules and regulations. Good communication is vital to successful safety and health programs and to business in general. Employee participation and involvement in safety issues and programs is critical for successful programs (Bernardin and Russel, 1998: 411). Our research on OHS with the point of view employees also supported this idea.

According to the European Agency for Safety and Health at Work, "Placing safety and health at the heart of your workplace will not only ensure you avoid the expensive costs of injuries and ill health. It will also improve the productivity of your business. Workers who are enthusiastic and well trained, with equipment and materials that are efficient and well maintained, can result

in better quality, better productivity, and better economic performance." in 2007.

There is an increasing need to evaluate the costs and benefits of an occupational health service (OHS). However, measuring benefits from an OHS is inherently difficult. Instead, an economic model can be constructed to present the minimum threshold benefits required for OHSs to be cost-effective, given what is known about costs. This model assumes that the benefits of an OHS are to maximize health and morale of employees; maximize performance and increase productivity; minimize medico-legal costs; enhance workplace safety; and reduce sickness absence (Miller, Whynes and Reid, 2000: 159).

Although the findings of the research are specific to a packaging sector company in Turkey, this research is important because employees provide clues how they can be persuaded by the employers to obey OHS rules and standards.

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