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Evaluating the role of management in improving safety and reducing the costs of accidents

Omid Hadi[1], Morteza Nayeril[2]

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ABSTRACT

Management plays a crucial role in maintaining compliance with health and safety regulations and standards in the workplace. It is the responsibility of management to set the tone for a culture of safety and to ensure that all employees understand and follow safety protocols with a sentence to describe the implications for the field. The abstract must not include references, figures or tables. Today, many accidents occur at the community level that accidents have adverse effects on the workers, the productive employee hours and planned production schedules. Occupational accidents and diseases cause immeasurable human suffering to victims and their families, impact negatively on enterprises' efficiency and productivity, and entail major economic losses for societies as a whole .The costs of occupational injuries and illnesses can be considerable. According to the International Labor Organization, these costs amount to 4 per cent of annual global gross domestic product. These accidents and events have physical and financial costs and it is necessary to properly address and investigate this important issue. Accident costs are associated with injuries and work-related ill-health and can have negative effects such as production losses and increased insurance premiums. Many of these costs are difficult to evaluate, especially from an economic perspective. However, usually the work accidents are analyzed focusing on root cause analysis without giving particular importance to the economic perspective. Prevention of these incidents requires a strong management system. According to this research, accident costs are classified into two categories: 1-Major Cost's 2-Minor Costs. In addition there is a correlation between Management Accounting and Safety Management.

Keywords

Accident Cost, Management Accounting, Safety investment

[1] Master's degree in accounting and postgraduate student in Health Safety and Environment, University of Tehran, Tehran, Iran; Omidpishraft400@gmail.com; (Corresponding Author)

[2] postgraduate student in Health Safety and Environment, University of Tehran, Tehran, Iran; Mortezanayeri2015@gmail.com;

1. Introduction

Undoubtedly, in any organization, management is considered one of the basic and vital elements. A successful manager improves and improves the working conditions by carrying out correct planning and timely identification of weak and strong points. Certainly, in case of non-observance of safety issues and lack of proper investment in the field of safety in a work environment, heavy costs will be imposed on the relevant organization. Therefore, identifying, investigating and eliminating hazardous factors in the work environment and in the production chain, while maintaining and promoting health, will have a positive effect on the production body and improve the economy.

The reliable evaluation of the cost of industrial accidents for an organization can help managers and workers to internalize the importance of safety measures from an economic-managerial perspective, and to locate the work stations that require investment in safety measures. Also, reliable evaluation assists managers to correctly plan investment in safety measures (Gavious et.al, 2009).

Therefore, Focus on cost engineering based on accurate and relevant cost-management calculation of workplace safety by cost-benefit principle, consequently measuring reasonable and efficient performance is very important, because the most valuable resources of any organization is the specialized and skilled human resources of that organization and providing appropriate conditions and Safe in the workplace has a special importance and place for it. The predominant methods for calculating workplace safety costs are based on cost estimates, that the usual measures include calculating the cost of each damage or the total cost of the accident. (Monem & Saeedi, 2016). According to the topics discussed, in order to advance the goals of management in the fields of optimal resource allocation, improving the safety of the work environment and improving productivity, it is necessary to pay attention to the safety management as well as the accounting management. A dynamic management system that invests for the future should examine the ways of allocating resources and investing in work safety with the help and advice of financial managers who have appropriate knowledge and choose the most suitable methods.

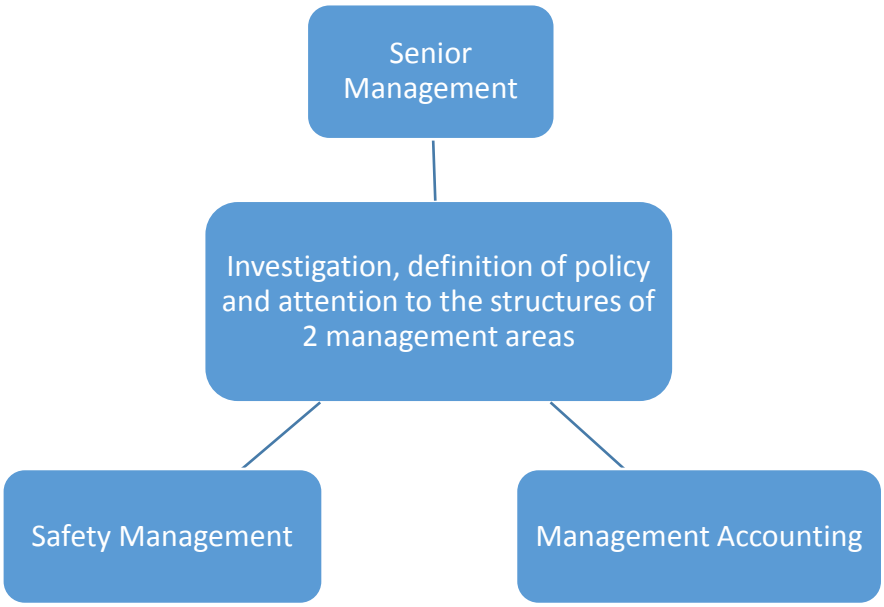


Figure 1: Two important areas of management that should be taken into consideration

2-Background:

The incidence of workplace accidents and diseases also a significant impact on the sustainability of social security systems as the cost for disability benefits or pensions paid by health and employee injury insurance schemes is ultimately borne by society as a whole. The total costs of an occupational accident or disease are 3 often underestimated because certain costs are external to the enterprise and because some internal costs may be difficult to quantify or recognize; such as, compensated time, lost production, reduced work capacity and lower workforce participation. It has been estimated that the indirect costs of occupational accidents or diseases can be four to ten times greater than the direct costs. The ILO estimates that lost working time, workers' compensation, interruption of production, and medical expenses costs four percent of the global GDP (roughly 2.8 trillion US dollars). Consequently the human and financial cost of this daily adversity is vast and puts in evidence the economic burden of poor OSH practices. (Leppink .N, 2015). Workplace safety is essential for industries regardless of the size of a company. All companies, big or small, need to incorporate safety in their workplaces. As a result, a coherent and efficient management system is needed to control and prevent work accidents.

3-Research methodology:

The present research was carried out by the method of historical knowledge and with the aim of developing knowledge related to the subject and with a promotional approach using the scientific resources available in the library, including books, articles, researches and scientific treatises.

4-Safety Management

To achieve a healthy work environment with the least accidents and occupational hazards, safety management came into being (Vatani et al., 2017**).** In the modern management approach, the most important axis of sustainable development is the preservation of manpower, environment and equipment in the work environment. Risk assessments, investigation and analysis of many accidents, including major accidents, show that the occurrence of these accidents cannot be caused by accidental defects only (Zare & Ghasemi ,2021).

Equipment should be described and justified, but also attitudes and behaviors

Human and organizational factors are also considered as a very important priority in the occurrence of accidents Safety at the operational level always tries to eliminate injuries, adverse effects on health and damage to the environment. Considering health, safety and environment, an organization manages its activities in such a way that the concepts of health and safety are given first priority. This encourages employees to adapt to a safe and healthy life cycle. A health, safety and environment system can be successful when it has a preventive approach to occupational accidents and diseases and environmental damage (Hosseini et al., 2013).

4-1-Safety Management System (SMS):

From a behavioral perspective, workers bring their beliefs, values, and vision to the design and implementation of safety management systems and ultimately in performing work. In particular, the individual worker interfaces with the safety management system by participating or engaging (or by not participating or engaging) in the system(Watcher & Patrick ,2014).

S.M.S is a management system that specifically aims at occupational safety (Li & Guldenmund, 2018). SMSs are usually institutionalized with elements such as safety policies, plans, procedures, objectives, responsibilities, and other measures that are readily adaptable to foreseeable or known safety risks (Wachter and Yorio, 2014, Yiu et al., 2019). SMS posits the notion that the state of safety stems from avoiding unsafe variations (Provan, et.al, 2020). The effectiveness of classical SMSs is mainly reliant upon the degree to which the risks are known or can be made known. Nonetheless, in modern socio-technical systems, work-as-imagined differs substantially from work-as-done, and thereby safety performance necessitates a thorough understanding of how work takes place in actual

scenarios (Hollnagel, 2012). Moreover, Trinh, Feng, and Jin (2018) point out that owing to the complexity within socio-technical systems, safety risks have become challenging to manage, and this has caused them to take on varying and unforeseen shapes (Pilanawithana et.al,2023).

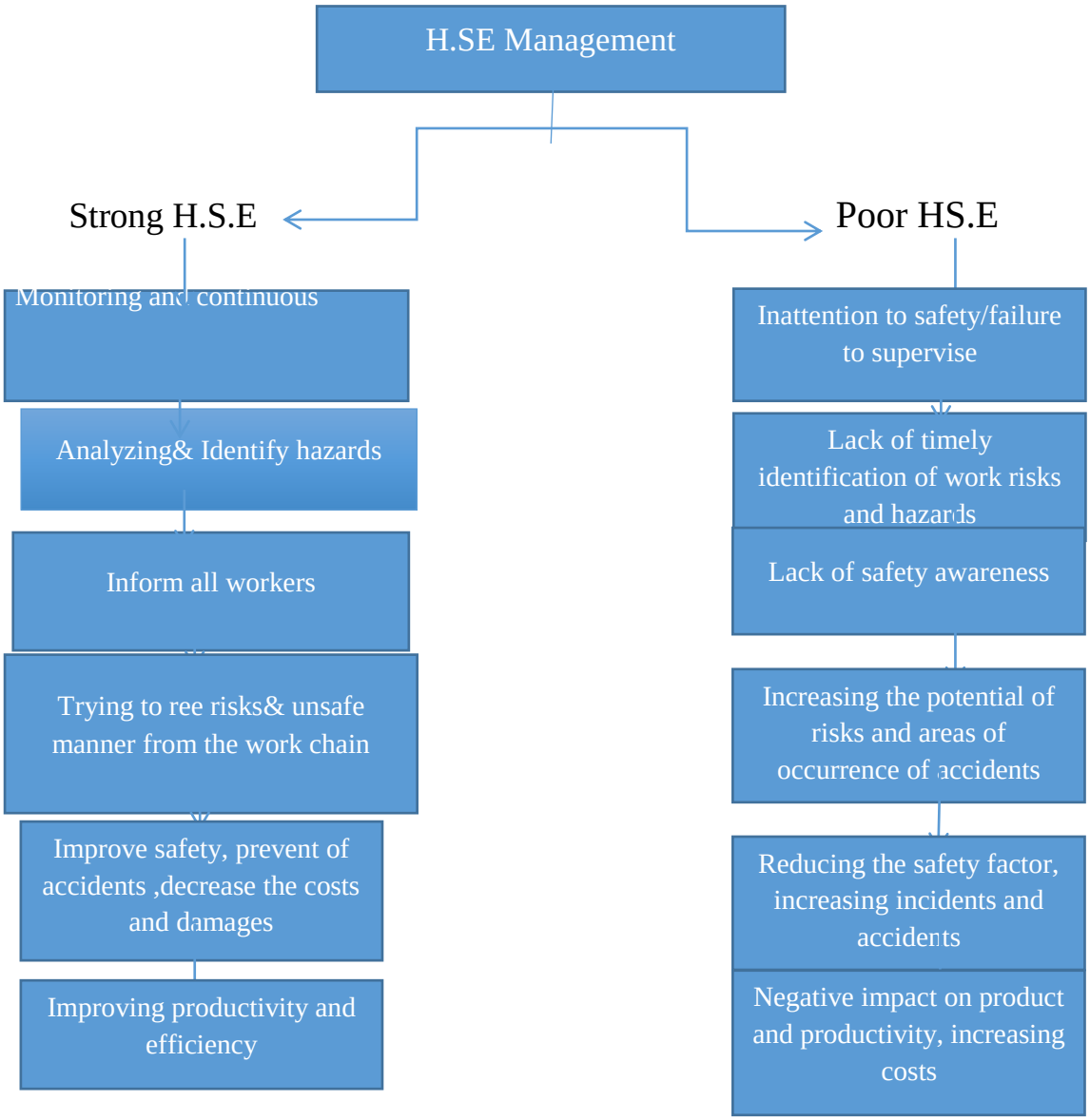


Figure 2: Comparison of the effects and output of a strong and weak management system with each other

5-Management accounting

Management accounting could be defined as the process of identification, measurement, accumulation, analysis, preparation, interpretation, and communication of financial and nonfinancial information used by management to plan, evaluate, and control within an organization and to assure appropriate use of and accountability for its resources(Rikhardsson,2005).

MA supports decision making in organizations by providing managers with relevant information and analysis on the performance, costs, and benefits of a certain operation. For safety-related issues, cost-based calculations dominate practice, and typical measures include cost per injury or the total cost of accidents. Monetary information is needed to guide safety-related decision-making. Besides focusing on financial information, management accounting should also focus on non-financial information, such as safety improvement, strategic safety objectives and employee relations. In safety-related investments, the monetary costs of an investment are usually well known, but the monetary value of the benefits is hard to calculate. Thus, there is a need for cost–benefit evaluation methods, including

the non-financial benefits and value created though preventing accidents. In addition to calculating the safety investment costs, the efficiency of the improvements, such as productivity improvements, quality and the value of safety goodwill, should be evaluated as well. A management accounting has perspective on safety. Management accounting (MA) information is also needed for safety-related investments and interventions. Successful management requires relevant information guiding decision-making in organizations. For safety-related issues, cost-based calculations dominate practice, and typical measures include cost per injury or the total cost of accidents. A typical problem in safety-related investments is that the monetary costs of an investment are usually well known, but the monetary value of the benefit is difficult to calculate (S. Tappura et.al ,2014).

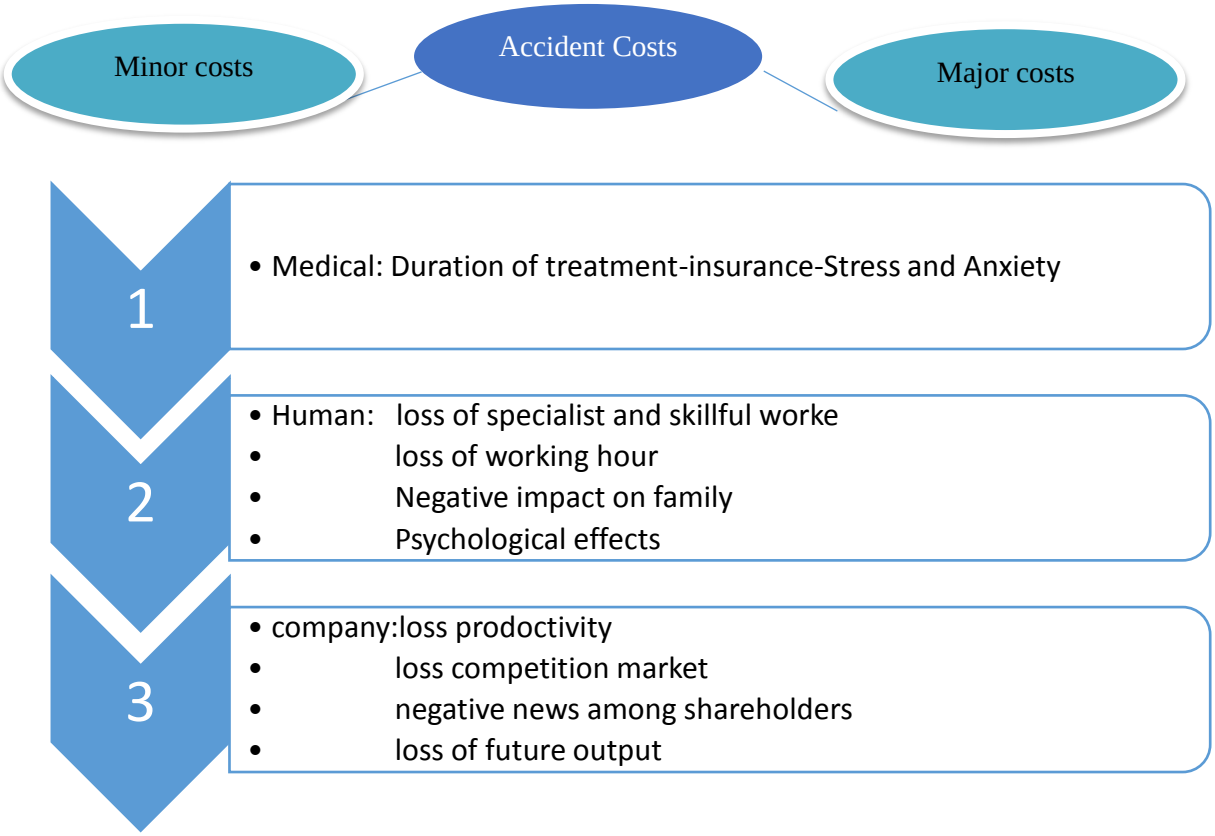
On the other hand, indirect costs are those costs quantified after the accident event (Rohani et al,2015). These kinds of costs are known as hidden costs, which are borne entirely by the employers since it is uninsurable. Examples of indirect costs include the cost for staff writing up the accident report, recruitment and training costs for replacement workers, loss in product quality after the accident, reduced productivity due to injured workers, transportation of an injured person, investigation costs and potential loss of expertise and experiences (Jallon et al, 2011). Unfortunately, the data on hidden costs are considerably more difficult to access than direct costs because the information is not often quantified as it accrues (Pillay and Haupt 2008).

Rikhardsson and Impgaard (2004) describe the following six categories of accident costs:

1. Absence of the injured employee (e.g. payment of sick pay and payment of supplementary sick pay).
2. Communication (e.g. formal communication to the staff and management of the organization as well as informal communication between employees).
3. Administration (e.g. payroll administration, administration regarding health and safety regulations and reporting requirements, follow-up activities and meetings).
4. Prevention initiatives (e.g. purchase of machine components and training initiatives).
5. Operation disturbance (e.g. training of replacements, revenue loss, co-worker overtime and reduction in production).
6. Others (e.g. fines and gifts given to the injured employee).

So, a part of the emerging sustainability management accounting is corporate health and safety performance. One performance dimension is the costs of occupational accidents in companies. The underlying logic for calculating these costs is that if occupational accidents are prevented then these costs could be avoided. This chapter presents and discusses selected methods for calculating the costs of occupational accidents. The focus is on presenting the characteristics of each method and disclosing the benefits and drawbacks of each method(Rikhardsson,2005).

In this regard, the purpose of this article is as following shape:



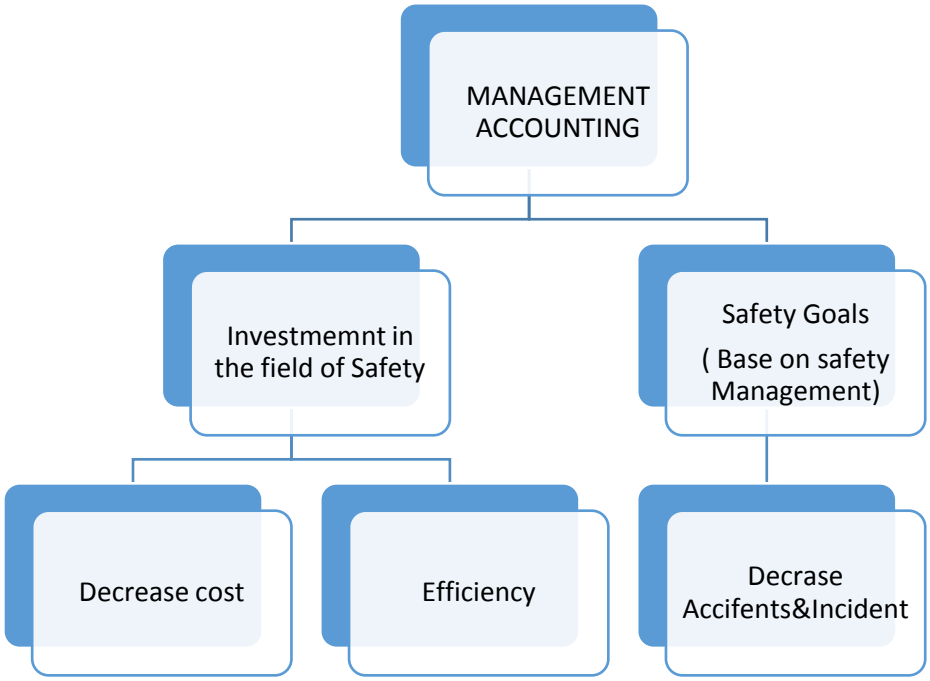
Shape**1**: Accident Costs

Occupational accidents are a substantial expense to society and individual companies. This loss of value could be avoided by preventing occupational accidents from happening. When focusing on accident prevention, an extra incentive for managers could be to illustrate the actual financial consequences for the company. (Rikhardsson ,2004)

At company level the governing functions are usually done based on the legal and economic factors. Accident and disease prevention can have several motivators' including expenses, company image, humane reasons, legal and regulatory requirements (Aaltonen & Oinonen 2007, 56). The greatest expenses in work accidents come usually from the immediate stop in the production. Imagine a stop of one week in a big project with fines for delays such as in a paper mill(Sormunen, Petri, 2010). In the process industry such as paper mills nowadays the timetables of large projects are planned by the hours. Delay in such a project leads to huge costs for fines and payments for staff waiting to begin work. With an example such as this is easy to show the importance of safety for the business success. Despite of this according to Aaltonen and Oinonen (2007, 56) in order the management to get motivated in following safety costs the following conditions need to be met:

1. "It must be possible to effect in the costs with own actions."
2. "There must be a clear link between the investments in security and gains from them."
3. "Time delay of the gains gotten from the security investment cannot be too long. The longer the delay the least motivating effect."
4. "The cost data must be accurate, believable and reliable."

Focus on methods of measuring safety cost and designing cost patterns and using information, if manager pay attention to allocate H.S.E cost , the results are as shape 2 (Hadi,2022):



This shape indicates there is a correlation between Management Accounting and Safety Management.

6-Suggestion for Future studying

- The role of management accounting in H.S.E
- Elaborate the economic advantages of occupational safety and health

7-Conclusion: Based on the results of the research and discussion described , it can be concluded several things as follows:

1- Every year, many accidents occur in every work environment and society, and these work events will have a negative impact on the economy and productivity. Identifying and controlling the risk factors in the occurrence of accidents can significantly prevent and reduce accidents. And by creating a safe work environment, it reduced the imposition of event costs and increased profitability and optimal production. In order to establish a relationship between costs and benefits, it is necessary to continuously and systematically examine the costs of accidents. Certainly, management has a key role in preventing the occurrence of injuries and health, safety and environmental incidents and taking into account the health and safety of employees and other people affected by the current activities of the organization, in the direction of sustainable development, reducing costs and increasing profits.

2-Accideint cause to costs.(effects on the morale of the employees, the productive employee hours and planned production schedules,…).

2- Benefits and costs related to safety must be identified.

3- Managers, in consultation with accountants, allocate funds for accident prevention.

4- Systematic information on costs of accidents at work should be available from administrative statistical data sources or regular surveys on health and safety at work , analyze annually and are examined by the safety management and the management accounting, then the ways of preventing accidents and compensating for damages are examined .

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Conflicts of Interest

The author has seen and agrees with the contents of the manuscript and there is no financial Interest to report. I certify that the submission is original work and is not under review at any Other publication**.**

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