

# The Relationship between Occupational Safety, Health, and Environment, and Sustainable Development: A Review and Critique

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**Abstract**—This paper discusses the significant commonalities of today's two highly contentious concepts, occupational safety, health, and environment, and sustainable development. Although the major concern of both of these policies is human welfare and wellbeing, they look at it from different perspectives and try to reach this objective through different ways. Moreover, it is shown that they are interrelated and without pursuing one strategy, the other would not be developed. So, this paper, firstly, aims at defining and exploring these concepts to find their relevance. Secondly, the relationship between these strategies and their approaches are explained.

**Index Terms**—Occupational health and safety, environment, sustainable development.

## I. INTRODUCTION

Sustainable development and occupational safety, health, and environment are the two controversial concepts which have attracted the attention of many researchers in recent years. They are also considered as essential elements in running a successful business with the ability and competency to survive in the market. However, there are even some papers discussing the connection between these two approaches, directly or indirectly.

Reference [1] related organizational sustainable development to its production value, as well as economic effectiveness, utilization of resources, occupational safety and health, and protection of environment. He also emphasized on the interrelationship and inseparability of economic effectiveness and occupational safety and health. Based on the viewpoint of reference [2], little consideration is given to the fact that they are both about conserving resources; Sustainability cares about environmental resources, while human resources are the main concern of occupational safety and health. Reference [3] defines sustainable development as continuously considering the implications of business decisions on environment, safety, occupational health, economy and society. Moreover, reference [4] believes that the role of occupational safety and health in sustainable development is not widely considered.

In point of fact, the genuine desire of sustainable development and occupational safety, health, and environment is human welfare and satisfaction. Sustainable

development has a general holistic point of view in sustaining the world a habitable place for the next generation, while attaining the satisfactory quality of life for the present communities. However, occupational safety, health, and environment concentrates on the well being of the workforce primarily, while its effects and consequences may encompass the whole society and the whole world. Having similar objectives necessitates integrating these two critically significant theories hoping that this integration intensifies their power and fosters their goal achievement.

The rest of the paper is organized as follows. Section II provides the literature definitions of occupational safety, health, and environment as well as sustainable development. In section III, the relation between these policies is studied. Section IV is a discussion of the connection between occupational safety, health, and environment, and sustainable development and section V gives a conclusion of the paper.

## II. LITERATURE REVIEW

This section reviews the definitions of occupational safety, health, and environment, as well as sustainable development proposed in previous papers, in order to provide clarification on their concepts and similarities.

### A. Occupational Safety, Health, and Environment

Occupational safety and health, so-called workplace wellbeing ([5] and [6]), is a controversial issue in industries acting as a highly significant factor in succeeding in the competitive market. Furthermore, the German philosopher, Schopenhauer (1788–1860), emphasized on the importance of health by stating that ‘health is not everything, but without health, everything is nothing’[7].

For further clarification on the essence of occupational safety, health, and environment, different definitions are collected here from the literature.

According to reference [8], effective management of occupational safety and health plays a pivotal role in running a successful business. Many studies also show that productivity levels and the general wellbeing of the workforce are directly linked to one another [6].

Based on the International Labour Organization–World Health Organization (ILO–WHO) Joint Committee, occupational safety and health must intend to promote and preserve the highest degree of physical, mental and social well-being of the employees and workers in all occupations [9]. As it is mentioned in [10]’s global strategy, occupational health involves occupational medicine, occupational hygiene, occupational psychology, safety, physiotherapy, ergonomics,

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rehabilitation, etc. Moreover, reference [11] defined occupational safety as operating in a workplace that carries acceptably low probability of risks threatening people, equipment, facilities, and the business.

Furthermore, workplace wellbeing is considered by the International Labour Organization (ILO) as what is related to the aspects of working life, including safety and quality of the physical environment, workers' feeling about their work and workplace, and their satisfaction level of work organization [6]. According to this definition, workplace wellbeing aims at ensuring the workers are safe, healthy, satisfied, and engaged at work.

Considering environment as the third factor, occupational safety, health, and environment is also defined in [12] as promoting the health of workers' and the company's host communities, making a safe working environment where the employees can work without being injured, using resources efficiently, preventing pollution, and improving biodiversity protection. In this definition, community is also considered as the fourth dimension, which addresses ethical business approaches, economic development, and essential human rights. Reference [11] stated that occupational safety and health aims at protecting human and facility resources, as well as recognizing, evaluating, controlling, and eliminating hazards in the working environment to avert serious injuries and damages. They also believed that besides moral issues, occupational safety and health must include economic issues as covering the expenses of the accidents may far outweigh the costs of administering a safe and healthy workplace. Reference [13] described occupational safety and health as a management discipline concerned with assuring the safety, health and welfare of workers, organizations, and everyone influenced by the business.

Occupational safety and health is defined by the International Occupational Hygiene Association (IOHA) as the science of anticipation, recognition, evaluation and control of hazards of workplace that may endanger or threaten the employees' health and well being, all along with considering the possible influences on the environment [14]. Reference [4] believes that occupational safety and health is generally concerned with the total well being of the employees at work and besides physical safety and well-being, it embraces mental well being and psycho-social wellbeing. Reference [15] states that from the economic, legal, and moral points of view, occupational safety and health has become a critical issue applied in the enterprises to help them remain profitable in the competitive global market.

The World Health Organization (WHO) has also applied the term "healthy workplace" to address occupational safety and health and defined it as a place where continual improvement for ensuring the workers' safety, health, and well being, and the sustainability of the workplace are achieved by cooperation between the employees and employers. This requires concerning safety and health at the physical and mental working environment, personal health resources in the workplace, and the ways of participating in the community to improve all the members' health.

Based on the aforementioned definitions, occupational safety, health, and environment includes two major factors;

one of which is occupational safety and health, and the other is the environment. Now, two major objectives can be distinguished; I) Preserving the employees' mental and physical health by preventing working-related accidents, injuries, and diseases, and providing a safe working area; and II) Paying attention to the nature and the environment by banning or limiting the usage of harmful materials to the environment, reducing environmental pollutants, and using resources parsimoniously.

### *B. Sustainable Development*

There are several researches focusing on sustainability in recent years and numerous definitions can be extracted from the literature. Although in the past, sustainable development was mostly used to address the environment and referred to the quality of sustaining the environment [16], today, it is recognized and identified by interlinked interactions at three major dimensions which are environment (planet), society (people), and economy (profit). These dimensions are mostly known as triple bottom line (TBL) and also sustainability pillars.

Based on [10], sustainable development is a strategy to "meet the needs of the present world population without causing adverse effect on health and on the environment, and without depleting or endangering the global resource base, hence without compromising the ability of future generations to meet their needs". It is further declared that "human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature".

Reference [17] argued that a useful definition of sustainability is the one that includes dynamic efficiency (non-wasteful consumption of resources), and intergenerational equity (total welfare). Referring to [12], human resources, specialized skills, organizational infrastructure, plant, equipment, technology, and financial resources can be all considered as resources. Reference [18] explained sustainability as providing a proper balance between economic, social and ecological aims. According to this perspective, businesses need to sustain and expand economic growth, shareholder value, corporate reputation, customer relationships, and the quality of products and services to achieve sustainability. Reference [19] believed that tackling economic, social, and environmental issues in isolation would result in unexpected consequences in other dimensions and proposed that assuring a sustainable future requires a systematic approach with interlinked interactions at these three sustainability pillars.

Reference [4] interpreted sustainable development as utilizing resources ideally in all respects. Reference [20] defined sustainable development as assuring a safe future with using resources, materials, and energy sparingly, regarding the present economic, social, and environmental well-being.

Generally speaking, sustainability accounts for resources including natural resources, financial resources, and human resources. Human resources may contain the workers, customers, shareholders, and all the stakeholders who affect the organization and would be influenced by its business.

Therefore, sustainable development aims at preserving and maintaining such resources as efficient as possible for the application of the present communities and the future generations.

To sum up, the major concern of sustainable development is human beings and their quality of life. Thus, sustainable development cares about society because people's level of satisfaction is important. It considers economy as the human and his satisfaction in life is absolutely paramount. And it regards environment since the quality of every single person's life is affected by the nature, environment and the resources.

### III. THE LINKAGES BETWEEN OCCUPATIONAL SAFETY, HEALTH, AND ENVIRONMENT, AND SUSTAINABLE DEVELOPMENT

Recently, some of the researchers are pointing to the similarities and the connections between occupational safety, health, and environment, and sustainable development. This section argues the preceding findings in this era of research and clarifies how these two contentious policies are interrelated.

According to [1], following occupational safety and health policies will lead to the development of health and safety management system (OHSMS), which is considered as an indicator of safety management standard and sustainable development for modern enterprises in China. Reference [2] concludes that designing the future must be infused with respecting for people and caring about their safety and health. They also stated that safety and lean processes can create a powerful vision for a sustainable future. Reference [3] defined its commitments towards sustainable development as sourcing from sustainable forests, performing risk management procedures to identify the risks threatening people and environment, following global working standards in the operations, and protecting the safety, health, and security of the workers.

It is disclosed in [10] that most of the environmental hazards endangering populace's health were first noticed in the working environment and/or among the working populations. Moreover, the health of the workforce would be affected by the general environment and the family health is crucially susceptible to its working member's productivity and health. Occupational health is considered by this reference to be at the centre of sustainable development. Based on [21], a large preventable burden of diseases and loss of income-earning potential is caused by hazardous working conditions and unemployment. Besides, it is indicated that systematic measurement of the occupational health indicators may assist in tracking the development of employees' safety and health. Generally, references [10] and [21] identified safe workplaces and healthy workers as the prerequisites for productivity, and social, economic, and sustainable development.

Furthermore, reference [4] has indicated that the enterprises with the best occupational safety and health practices are the most productive and the most economic,

social, and environmentally friendly businesses.

According to [12], sustainable development is an indispensable part of occupational safety, health, environment, and community, and aims at propelling constant improvement in performance. However, reference [22] suggested involving safety in a "safety-sustainability continuum" where ensuring safety acts as a starting point in achieving sustainable development.

Reference [23] refers to the occupational safety and health and environmental sustainability as parallel challenges. Moreover, they believe that worker safety and health may lead to sustainable improvements by utilizing the momentum of the green movement and adapting successful intervention approaches from the environmental sustainability area. Reference [24] also suggested to incorporate safety and health into sustainability patterns. They stated that integrating occupational safety and health with sustainability practices is extremely important to the effective realization of these endeavors.

Therefore, in one hand, providing the workers' safety and health would establish the necessary infrastructure for social and economic sustainability and without healthy workers and safe working places, the environment and the society would be exposed to danger. In another words, unhealthy employees in unsafe environmental working conditions cannot have the maximum productivity and efficiency, and as the result, the organization would experience financial crisis which in turn brings difficult economic conditions for the workers and the stakeholders, including customers, shareholders, and the society as a whole.

Moreover, workers' injuries and property damages not only do increase the company's costs, including medical expenses, operational costs, and compensations to the society and individuals, but also destroy its business reputation and decreases its market share. This, in turn, undermines the employee morale and motivation, adversely affects the quality of the products, and results in organization's unavoidable disappearance from the market. Consequently, the occupational safety and health programs directly address the employees, while indirectly affect the society, economy, and environment in the long term.

On the other hand, without social and economic sustainability, safety and health would not be successfully managed and guaranteed. Populace having economic problems cannot be mentally and physically healthy employees at work. Besides, society and its inconsistency may lead to lack of motivation and affect workers' effectiveness. Environment may also influence the workers' health and their productivity at work. This is mainly because the company or the organization is a part and parcel of the society and whatever affects one, directly or indirectly impacts the other.

Fig. 1 is a schematic representation of the relationships between occupational safety, health, and environment, and sustainability. This figure illustrates that working condition would influence the sustainability triple bottom line and it would be also affected by the company's policy towards sustainable development.

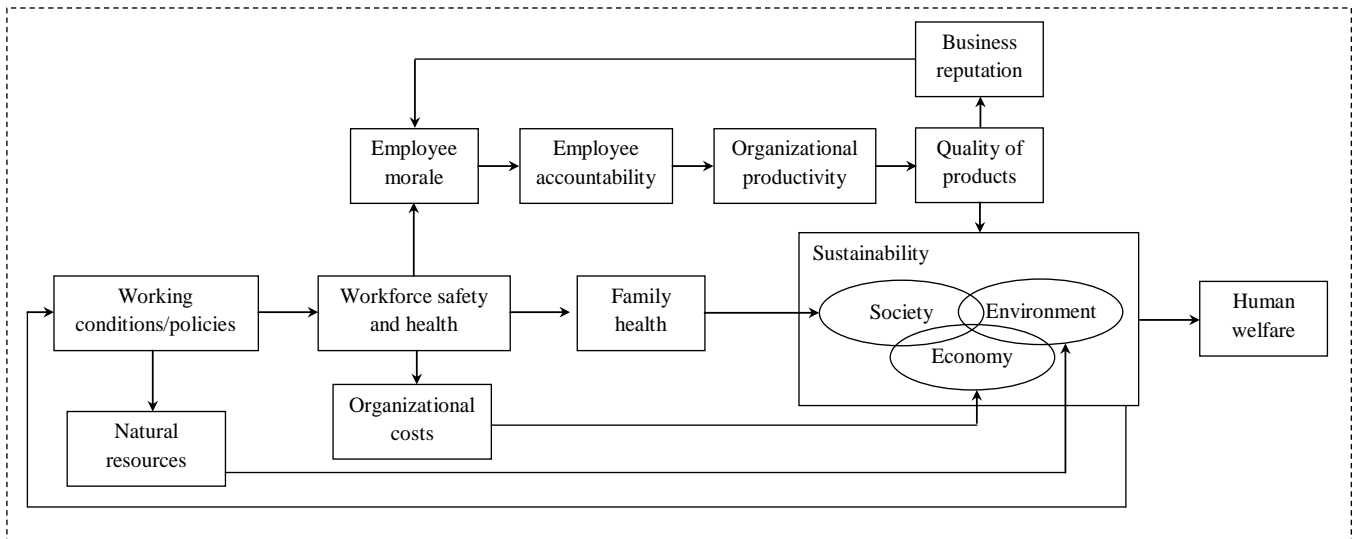


Fig. 1. The relationship between occupational safety, health, and environment, and sustainable development.

It can be now concluded that occupational safety, health, and environment, and sustainable development are extremely interrelated and adopting one of these policies requires the other to be implemented properly.

#### IV. DISCUSSION

It can be inferred from the previous discussions and definitions of sustainability and occupational safety, health, and environment that they are attempting to reach the same goal through different processes. For further clarification, here, we discuss the differences between the approaches of these two policies.

Occupational safety, health, and environment primarily addresses the employees. It attempts to assure that the workers are working in a safe environment where nothing threatens their health at workplace, the working area is free from any risk to equipment, plant, and property, and the surrounding environment is protected and would not be polluted. As it is shown in Figure 1, working in safe and healthy conditions enhances the employees' performance, increases their motivation and effectiveness, raises the business productivity, and consequently improves the quality of the product. Not only does this enhances the company's reputation, but also reduces its costs and increases the sales and revenue in the long term. The quality of the products influences people's health in the society and significantly affects the environment. Fig. 2 depicts a schematic framework of the viewpoint of occupational, safety, health, and environment.

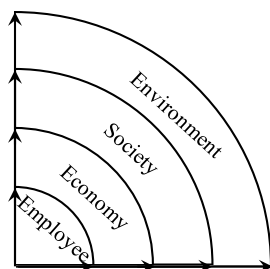


Fig. 2. The approach of occupational safety, health, and environment.

On the contrary, sustainable development has a holistic approach and as it is mentioned in its definitions, it principally aims at preserving the natural resources for the future generations while the present generation's needs and the societies' requirements are being considered. This must be considered along with economic issues to keep the enterprises profitable. For reaching these goals, the healthy employees and safe working sites would play an important role in providing motivation and commitment to work efficiently. This viewpoint and the direction from which sustainable development views the issue is illustrated in Fig. 3.

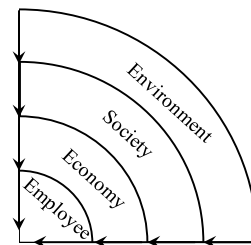


Fig. 3. The approach of sustainable development.

#### V. CONCLUSION

The essence of occupational safety, health, and environment, and sustainable development represents the existence of a mutual relationship between these two critical concepts. They have both the same objectives and deal with the same issues, which is consistent welfare and wellbeing of human beings, being looked from different angles and defined in different terminologies. Moreover, the final ambition of these two policies is sustaining continuous mental and physical health of the people.

As occupational safety, health, and environment, and sustainable development concern about the same issues, integrating their research findings and adopting a common approach to both concepts would be of great significance.

Future researches may focus on examining how the integration of these two discussed policies strengthen and

foster the companies' goal achievement. It can be done by surveying three groups of companies; the ones that are following occupational safety, health, and environment policies, organizations focusing on sustainable development, and the others which are taking care of both. The results would be worth then to be investigated and evaluated statistically.

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