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# THE EFFECT OF OCCUPATIONAL HEALTH AND SAFETY HAZARDS ON EMPLOYEES' PERFORMANCE: CASES FROM OMAN

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## Abstract

Occupational Health and Safety (OHS) is a critical component in enhancing employee performance, particularly in high-risk sectors such as manufacturing. This study investigates the impact of OHS hazards specifically health, safety, and ergonomic hazards on employee performance in selected manufacturing companies in the Sultanate of Oman. Grounded in a conceptual framework linking these OHS dimensions as independent variables and employee performance as the dependent variable, the research employs a quantitative approach using a structured survey administered to 335 employees across five manufacturing firms. Reliability was tested using Cronbach's Alpha, with values exceeding 0.78 for all constructs. Data were analyzed through Confirmatory Factor Analysis (CFA), regression analysis, and Structural Equation Modeling (SEM) using SPSS and SmartPLS. The findings indicate that all three OHS hazards significantly affect employee performance, with ergonomic hazards exhibiting the strongest influence. The results underscore the necessity of proactive OHS strategies, employee training (such as the Train-the-Trainer model), and adherence to international standards like ISO 45001 to mitigate risks and enhance workplace productivity. Additionally, the study reveals that organizations in Oman are increasingly aware of the positive correlation between OHS practices and performance outcomes. Recommendations include continuous safety education, professional certification, and the development of specialized teams to monitor and improve OHS compliance. This research contributes to literature on OHS in the GCC context, particularly Oman, and offers practical insights for policy formulation and organizational practice. Future research could explore sectoral differences and incorporate longitudinal designs for deeper analysis.

**Keywords:** Occupational Health and Safety, Employee performance, Human Resources Department, Oman,

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## INTRODUCTION

Organizations across the globe concentrate more on providing a safe and risk-free work environment while ensuring increased productivity (Therese et al, 2018). Employees are the highlighting factor of any organization who support the management in achieving goals set by the organization. In the past, the focus of entities was on safety at the workplace only, health of employees was not seen as an important factor (Prima et al, 2021). Occupational hazards

have a significant impact on employee health and performance. This research focuses on the importance of establishing procedures and policies that reduce risks in the workplace. The role of human resources department is to set regulations to make employees aware of the importance of adhering to safety procedures in the workplace by providing them with basic information, programs, activities, and appropriate training that makes them more prepared to face any risk at the workplace. It is also necessary to strive on enhancing the physical, social, and mental well-being of employees by practicing occupational safety and health (Therese et al,2018). Due to the current changing environment and the adoption of new ideas and tools in the workplace, this concept had to be taken into consideration. According to Lindholm, M, Reiman, and Väyrynen, S. 2020, to avoid future risks, an overview of the dynamic and changing environment that could cause occupational health and safety risks must be added.

Occupational Health and Safety (OHS) is a set of practices and activities that are put in place to create an effective and safe work environment for workers, and to train and guide them to avoid mental and physical disorders. Also, procedures related to OHS are put in place to support employees to carry out their tasks better in every aspect (Yuli, 2005:211 p.2). OHS system ensures that employees adhere to the regulations and procedures established by the organization to avoid risks (Dedi et al, 2020). Consequently, according to the workshop on Occupational Health and Safety conducted by “Oman India Fertilizer Company” (OMIFCO), the Human Resources Department has had to deal with these situations that call for pause, initiative, and proactive thinking. Human resources care greatly about occupational health and safety for several reasons, the most important of which are the reasons related to ethics, which is putting the worker in the first place to protect him, as he is the driver of organizational productivity. Employee performance is linked to the result at the end of the work, and performance is measured by standards that are set by the organization to achieve its goals. Performance is always affected by job experience, ability, knowledge, and personality (Sedarmayanti, 2011:59 p.1). Job satisfaction, commitment and work environment have the potential to create effective and efficient performance. Performance is greatly affected by work-related facilities and occupational health and safety procedures at work (Dedi et al, .2020).

The adoption of occupational health and safety systems in the workplace has a major role in enriching job safety and enhancing safety at the workplace. OHS has a significant impact on the performance of employees in the work environment. The emergence of sudden injuries and deaths in the workplace has led to adherence to this program. In 2019-20, the emergence of the Corona pandemic led to the commitment of the management in all organizations to safety measures. Occupational health and safety affect both the organization and the worker and the work environment as well. There are several reasons; the dynamic environment and technology had a great impact in making managers adopt this program. The lack of occupational health and safety in the work environment leads to occupational hazards, occupational diseases, fatalities, absenteeism, and failure to react well to the simplest situations. Safety programs must be added to make employees more aware of how to deal with risks and reduce employee turnover. The proactive plans had a great impact in creating employees who are aware of the importance of following occupational safety and health systems. The organization had to focus heavily on drawing up a proactive strategy to avoid the occurrence of risks in the future, and to equip employees to deal with risks more effectively and thoughtfully (Priyanto, Hand Yanuar, T, 2009 p.7). hence, this research is aimed to examine the relationship between Occupational Health and Safety on employee’s job performance in the manufacturing sector of the Sultanate of Oman. The following research questions were framed to achieve the aim of this research.

1. How the Occupational Health and Safety factors affect the employee’s job performance?
2. To what extent do the establishments adhere to health and safety procedures?
3. What are the different methods used by manufacturing sector to enhance the safety and health of employees?

### **RESEARCH OBJECTIVES**

The following research objectives were framed to achieve the aim of this research.

1. To examine the factors of Occupational Health and Safety that affect employee’s job performance.
2. To understand how companies adhere to health and safety procedures.
3. To identify the methods used by manufacturing sector to enhance the health and safety of employees.
4. To suggest measures based on the results.

The upcoming sections of this paper have been segmented into literature review, methodology, data analysis, findings and conclusion along with recommendation and future research directions.

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## LITERATURE REVIEW

This segment analyses the past studies in line with this research topic to identify the research gap.

### Industrial Safety and Health

A study conducted by (Malinda, A and Soediantono, D. 2022) in the Defense Industry to find out the usefulness of Occupational Health and Safety Management. The result highlighted the benefits that are direct to industries, including the rapid response capacity in several issues, including regulatory compliance. Furthermore, Chan, M.F., et al (2022) researched to investigate the relationship between self-reported medical errors and occupational errors. Survey method was used to collect data on self-assessment of medical errors, work-life balance, occupational burnout and work-related bullying. The findings highlighted the importance of establishing a non-punitive approach with organizational support for HCWs, irrespective of nationality and sufficient space to examine improvement areas and learning opportunities. Moreover, Prima et al (2021) conducted a study aiming to determine the factors that are dangerous to the occupational health and safety of employees during the period of the pandemic (Covid-19). The main finding was that using products that are personal and inconsistent increased the risk of disease and working for 15 hours and lack of hand hygiene affected the most.

### Occupational health and safety policies

(Suárez-Albanchez, J., et al 2021) examined how occupational health and safety policies affect employees' work and organizational commitment, and their intention to leave an organization. In the study Structural equation model was used to represent the relationship between the independent variables (organizational culture types) and dependent variable (employee performance). The main finding was that occupational. Health and safety policies are indeed positively associated with employees' work and organizational commitment. In addition, their turnover intentions are negatively correlated with their work and organizational commitment. Consequently, Umar, T., Umeokafor, N., Vali, M. and Zia, A. (2020) investigated the gaps in the OS&H regulations applicable to both employees and employers in Oman and suggest areas for improvement. The main finding was, the absence of detailed guidelines on scaffolding, is one of the main limitations of the current OS&H regulations in Oman. The requirement for regular supervision and inspection by competent persons are also lacking in the Omani regulation. Likewise, the responsibilities of contractors in terms of the use of scaffolding cannot be found in the current regulations. Moreover, Yanar, B., et al (2018) in their study examined how occupational health and safety policies affect employees' work and organizational commitment, and their intention to leave an organization. The finding was, from the analysis of the data, it has been concluded that occupational health and safety policies are indeed positively associated with employees' work and organizational commitment. In addition, their turnover intentions are negatively correlated with their work and organizational commitment.

### Research Gap

This study focuses on the impact of adopting occupational health and safety in work environments and on staff performance at the workplace. There is a limited number of research on "Occupational Health and Safety" conducted in Oman. There were some gaps that were found in previous papers, namely:

Firstly, as the need to adopt some terminology in previous studies is very important, such as (Train the trainer program), as there is one study that mentioned its importance, which is: (Therese et al .2018) as a consequence of the importance of this criterion are: many organizations may encounter workers who are not flexible with changes and do not take advantage of regulations 26(2023) that are put in place to avoid risks. There may be employees who join the training provided by the organization to instill awareness of the importance of adhering to caution and dealing with all aspects of machinery, high places, and others with care. On the other hand, other studies did not focus on that, so in this study the importance of this program was mentioned.

Secondly, in the paper conducted by (Lindholm, M, Reiman, A, and Väyrynen, S. 2020) and (Wanger, A, Shone, L and Rieger, M. 2020) the focus was not on the necessity of the (ISO 45001) certificate that grants a strong system of prevention organization.

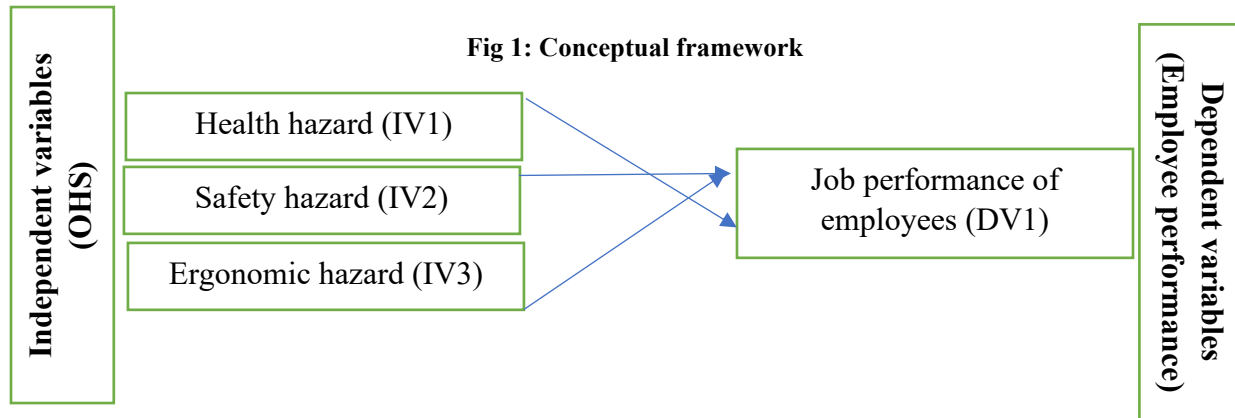
Finally, there are some studies that focused on specific factors such as (safety) only and did not mention the importance of (health), such as: (Ebeloku, A. I., et al 2018). Therefore, this research will focus on the importance of these concepts and employees' awareness of them.

### Conceptual Framework

A conceptual framework is a link that forms meanings and connects concepts to create interrelated and related concepts a "framework" for making meaning and connection between concepts. It is a network of expectations, assumptions and beliefs that will support and benefit the research (Ewnetu H., T. 2016). To reach the expected research results, one must use a research framework to take steps and implement them. It contains an "independent" cause variable,

which can be manipulated but not affected by other variables. It contains the dependent variable, which is the effect, and depends on the independent variable. The below figure 1 shows the study conceptual framework consists of (IV) independent variables (Safety hazard, Health hazard, and Ergonomic hazard) and (DV) the dependent variable which is Employee performance is linked to

The result at the end of the work, and performance is measured by standards that are set by the organization to achieve its goals. Performance is always affected by job experiences, ability, knowledge, and personality as well (Sedarmayanti, 2011:59 p.1).



**Hypothesis**

The following are the hypothesis framed based on the conceptual framework.

- H1: Health hazard Positively affect the job performance of employees at the workplace.
- H2: Safety hazard Positively affect the job performance of employees at the workplace.
- H3: Ergonomic hazard Positively affects the job performance of employees at the workplace.

**RESEARCH METHODOLOGY**

The data for this research has been collected using a structured survey questionnaire. This method of data collection was chosen as it is a less expensive method and was able to collect data without personally visiting the respondents (McGuirk, P. and O’Neill, P. 2016). The correctness of the questionnaire contents was evaluated by an expert team namely, Dr. Abdullah Al Azri – Academic expert; Mr. Esmail Ali – Public Relations Officer and Mr. Mohammed – Manager of production department.

The questionnaire is divided into 2 segments.

Segment 1: Demographic questions

Segment 2: objective based questions in Linkert scale format

The respondents for this research are from selected construction companies namely Horizons Industrial Development Company, Acero, Al Saraya, Putzwerk L.L.C and Emaar company. The sample size was fixed to be 335 according to the table Krejcie and Morgan table. To test the reliability fo the questionnaire, pilot study was conducted, and the results of Cronbach's Alpha is presented below.

**Table 1: Cronbach's Alpha reliability test**

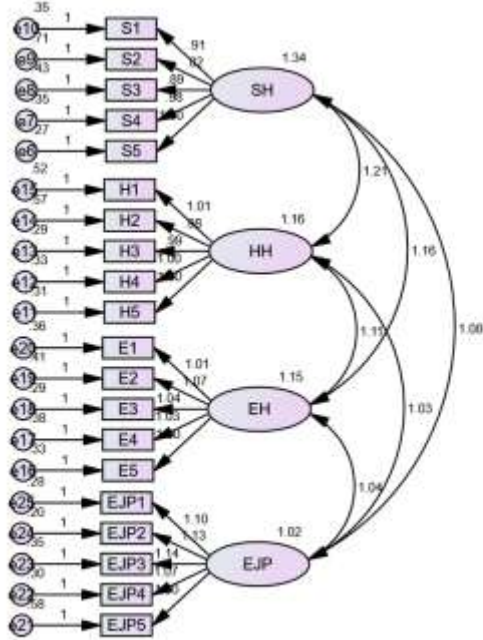
Study factors	Cronbach's Alpha results
Health hazard	0.784
Safety hazard	0.789
Ergonomic hazard	0.854
Job performance	0.854

The data collected has been analysed using SPSS and Smart PLS. confirmatory factor analysis, regression and ANNOVA test were done to arrive at the results. The following are the tables and figures that highlight the data analysis.

**Confirmatory Factor Analysis:**

For more validity and to check the extent to which the factors in the survey conducted were used (Confirmatory Factor Analysis). Based on the questions chosen in the survey and the answers, a rejection or acceptance test was conducted.

**Fig 2: Confirmatory Factor Analysis**



**Table 2: Regression Weights**

			Estimate	S.E	C.R	P
S5	<---	SH	.912			
S4	<---	SH	.887	.044	22.400	***
S3	<---	SH	.844	.045	19.818	***
S2	<---	SH	.748	.053	15.570	***
S1	<---	SH	.872	.043	21.408	***
H5	<---	HH	.888			
H4	<---	HH	.883	.048	20.925	***
H3	<---	HH	.894	.046	21.517	***
H2	<---	HH	.816	.056	17.695	***
H1	<---	HH	.834	.054	18.508	***
E5	<---	EH	.881			
E4	<---	EH	.875	.051	20.097	***
E3	<---	EH	.899	.049	21.382	***
E2	<---	EH	.873	.053	20.004	***
E1	<---	EH	.875	.050	20.115	***
EJP5	<---	EJP	.799			
EJP4	<---	EJP	.890	.063	17.065	***
EJP3	<---	EJP	.889	.067	17.048	***
EJP2	<---	EJP	.931	.062	18.298	***
EJP1	<---	EJP	.903	.063	17.430	***

The above table shows that the Regression values for each factor reveal that more than 0.7 is good result. The probability values should be less than 0.05, that means all 5 indicators that are related to each factor and are independent variables:

The questions about Safety hazard show P= .00  
 The questions of Health hazard show P= .00  
 The questions of Ergonomic hazard show P= .00  
 Evaluation of model fit

(Model fit) to fit this model, it visualizes several indicators that are different and finds out which values will be accepted by indicators of known quality (Byrne,1998; Hair et al., 1992; Jöreskog and Sörbom, 1996). There are many indicators including: “Comparative Fit”, (chi-square ( $\chi^2$ ), “unadjusted goodness-of-fit”, “Tucker-Lewis”, “Normal Fit” etc.

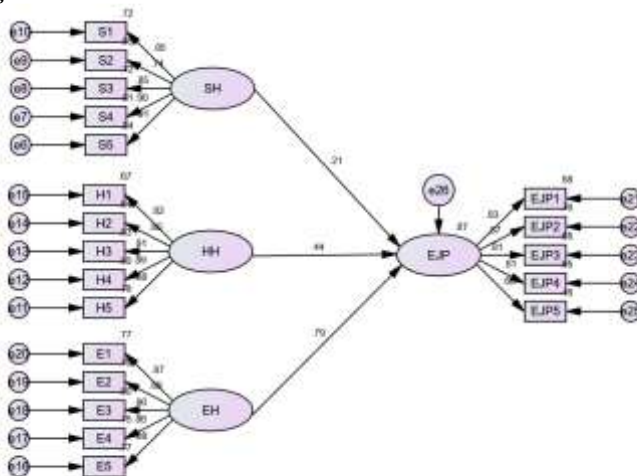
(Bentler, 1999) recommended the use of indicators that are of good quality and appropriate for a comprehensive evaluation. The “comparative fit” index (CFI)( $> 0.95$ ) was also used to be a suitable and good model for modeling the “structural equation”, through the “Tucker Lewis” index (TLI) ( $> 0.95$ ), “square error residual” (SRMR) ( $< 0.08$ ), and “root mean square error of approximation” (RMSEA) ( $< 0.08$ ).

Some researchers (Beauducel & Wittmann, 2005; Fan & Sivo, 2005; Marsh et al., 2004) have suggested that the results are limitedly generalizable and that the cut-off values are strict. Therefore, it is recommended that " incremental fit " and "absolutely match" pointers, such as (NFI, GFI, TLI and CFI). So, the values must be like (SRMR and RMSEA) less than this number “0.05 or 0.10”, also other values related to trim are more than “0.90”.

**Table 3: Model fit**

Fitness index	Recommended criterion	Obtained values
chi square		6362.487
Df		190
chi square/df	2 - 5	3.279
GFI	0.900	0.828
AGFI	0.900	0.779
NFI	$\geq 0.95$	0.915
TLI	$\geq 0.95$	0.930
CFI	$\geq 0.95$	0.939
RMR		0.043
RMSEA		0.075

**Fig 3: Model fit**



performance of employees which are independents variables (SH, HH, EH) and dependent variable (EJP) and how each of them relate to each other. Also, each of them is more influenced by dependent variables.

**Table 4: Regression Weights**

EJP	<---	SH	.213	.024	5.956	***
EJP	<---	HH	.445	.030	10.805	***
EJP	<---	EH	.792	.039	14.860	***

<b>S5</b>	<---	SH	.914			
<b>S4</b>	<---	SH	.901	.044	22.613	***
<b>S3</b>	<---	SH	.849	.045	19.642	***
<b>S2</b>	<---	SH	.745	.054	15.188	***
<b>S1</b>	<---	SH	.851	.045	19.741	***
<b>H5</b>	<---	HH	.882			
<b>H4</b>	<---	HH	.894	.050	20.565	***
<b>H3</b>	<---	HH	.909	.047	21.310	***
<b>H2</b>	<---	HH	.800	.059	16.516	***
<b>H1</b>	<---	HH	.819	.058	17.266	***
<b>E5</b>	<---	EH	.878			
<b>E4</b>	<---	EH	.864	.053	19.161	***
<b>E3</b>	<---	EH	.896	.050	20.692	***
<b>E2</b>	<---	EH	.890	.054	20.377	***
<b>E1</b>	<---	EH	.875	.052	19.640	***
<b>EJP1</b>	<---	EJP	.826			
<b>EJP2</b>	<---	EJP	.873	.060	17.078	***
<b>EJP3</b>	<---	EJP	.805	.069	15.094	***
<b>EJP4</b>	<---	EJP	.808	.064	15.155	***
<b>EJP5</b>	<---	EJP	.681	.076	11.952	***

Hair et al. (2016) explained the role of the structural equation model in determining how well the data collected supports the theory. Structural equations have been used by a lot of researchers because of their advantages and unique properties. Structural equation model provides a direct approach to managing relationships simultaneously; hence it can provide statistical efficiency concurrently which is not applicable in multiple regression analysis. It comprehensively examines between variables and their relationships. (Hoyle, 1995; Schaupp et al., 2010). Moreover, it converts analyzes related to exploratory factors into confirmed ones.

Structural equation model also demonstrates the concepts that are not observed through these associations and justify the measurement error in the estimation process which are not achievable in the multiple regression analysis (Kline, 2001; Prajogo and Cooper, 2010), SEM offers comprehensive information about the research model that extends beyond the regression method (Bollen, 1989; Jimenez-Jimenez & Martinez-Costa, 2009; Jöreskog & Sörbom, 1993). The path diagram shows the impact of Occupational Health and Safety Management on Employee job performance (EJP) in Oman. The dimension of Safety hazard factor has five indicators (SH1, SH2, SH3, SH4 and SH5), Health hazard has five indicators (HH1, HH2, HH3, HH4, and HH5), Ergonomic hazard factor also has five indicators (EH1, EH2, EH3, EH4, and EH5) the dependent factor Employee job performance (EJP) has five indicators (EJP1, EJP2, EJP3, EJP4 and EJP5). The path diagram shows the impact of Occupational Health and Safety Management 87% variance on the dependent factor Employee job performance. Regression weights, that the predictor factors Safety hazard (0.143) and Health hazard (0.322) and Ergonomic hazard (0.576) are significantly influenced by the outcome factor (EJP) as the P value is less than 0.05 (0.000), also the Ergonomic hazard is the most important factor to employee job performance.

As it shown the most important result is (EH) and it mentions in much previous research like: Korpinen & Paakkonen (2011), Lindholm, M and Reiman, A and Väyrynen, S. (2020), Musungwa, T and Kowe, P. (2022) and Adamopoulos, I.P. and Syrou, N.F., 2022.

## DISCUSSION

The result of the survey showed that there is a significant relationship between health hazards and employee job performance this result goes well with the prediction of the hypotheses, so it is right to say that the employee in the manufacturing company believes that maintaining health hazards in the workplace is an essential factor for better performance. Like health hazards, safety hazards have a significant relationship with employee job performance it also goes along with the hypothesis's prediction. In addition to that, this information also was supported in the related literature according to Adamopoulos, I.P. and Syrou, N.F., (2022), who have mentioned how safety hazard factors have an enormous influence on employee performance. It is understood that the employees in manufacturing companies have the same thought from this point of view. Moving to the factor of ergonomic hazards, the findings of

the survey reveal that there is also a significant relationship between ergonomic hazards and employee job performance, which goes with the hypotheses. However, this result is in line with Niu, S., (2010) in the related literature, they mentioned that the OHS factors must influence EP.

#### Conclusion

The problem description, research questions and objectives, and the study's scope were all included in this study's background information. The effects of occupational health and safety hazards on employee job performance in the manufacturing sector were explored in this study. The study addressed the most important topics about research methodology, design, and data analysis methods. The presented quantitative data. The quantitative data's overall findings are compatible with prior academics' theoretical and empirical studies. Based on the data, the study concludes and makes recommendations for future research. According to the study, the findings have consequences for occupational health and safety and employee job performance, according to the study.

Finally, it was discovered that occupational health and safety had a direct impact on employee job performance. like health hazards, safety hazards, and ergonomic hazards. Apart from that, occupational health and safety factors act as a predictor of employee job performance. As a result, all the hypotheses proposed in the current study were supported. The results showed that companies are trying hard to create a safe environment to increase employee performance. Companies need to create a positive and educational environment because of its many benefits, including raising the performance of employees and increasing their awareness of the importance of this.

### RECOMMENDATIONS

Based on the conclusion and the results of this research, these recommendations are designed not only to apply occupational health and safety procedures effectively and to know the impact of occupational risks on employee performance, but also to develop companies in this field and educate them further to highlight its importance. Additionally, to deal with future challenges more effectively and efficiently.

- 1) Due to companies' awareness of the importance of health and safety, their ability to create an employee with high effective performance, but by providing the correct practices for how to apply health and safety procedures.
- 2) Likewise, the use of experts in this field through dedicated programs (training of the trainee) and others can raise the level of employee performance and their effective understanding of health and safety policies.
- 3) Moreover, the companies' commitment to obtaining international certificates in this field increases their ability to borrow specially designed materials to avoid occupational health and safety risks.
- 4) In addition, continuous education, sharing experiences, and providing workshops via the Internet regarding (Ergonomic Hazardss) because of their great importance in influencing employee performance, will increase employee awareness and focus organizations on distributing the necessary instructions in all facilities.
- 5) Furthermore, obtaining courses from companies specialized in this field, including (the World Health Organization) (and international construction companies) and occupational health and safety specialists. Also, establishing a special team in companies specialized in this field and monitoring employee performance and how it is affected by occupational health and safety risks.

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