Impact of Occupational Health and Safety Standards on Employees' Performance in Manufacturing Sector of Pakistan

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Abstract

This study investigates the effect of health and safety standards on employees' performance. This study aimed to determine the impact of health and safety standards on employee performance in Pakistan's manufacturing sector. Structured questionnaires were adopted and distributed to a sample of 250 workers comprising production staff and management; 180 useable responses were used for data analysis. Principal component analysis was employed to test the validity of constructs. The findings of this study support the hypothesized relationships. In this study, the effect of occupational health and safety is positive and significant. The effect of safety standards on employee performance is more than health standards. Still, the significance of both is almost equal, so it is observed that occupational health and safety standards are equally significant in increasing employee performance. This study would support occupational health and safety practices necessary for organizations' strategic planning.

Keywords: Occupational Health, Occupational Safety, Employees' Performance, Manufacturing.

Introduction

Industrialization has become the engine of growth for most developing countries like Pakistan, and because of this, many countries are striving to find ways and means to develop their industries. Strong evidence shows good worker health and well-being boost organizational health and business performance (Wilde & Agarwal, 2016). Workplace health and safety procedures are necessary for the well-being of both employers and employees. The community of today's business is most concerned with workplace violence.

The most valuable asset in the workplace is human resources because its effective and efficient use can result in a higher level of performance in other areas of the organization. For this reason, it's necessary to provide a healthy and safe environment to the workers to improve the employee's job performance (Amankwah et al., 2019). According to Kofi Annan (former UN General Secretary), cited in Tawiah and Baah (2011) health and safety are sound socioeconomic and political policies and basic human rights. All activities and arrangements must be in the right position at the workplace to protect and safeguard human lives from work-related accidents and illness. Chronic disease negatively affects worker productivity, and workplaces bear several

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In the words of Kofi Annan (former UN Secretary) cited in Tawiah and Baah (2011) health and safety are not only sound socioeconomic and political policies but fundamental human rights. All activities and arrangements must be appropriate at the workplace to protect human life from work-related accidents and illnesses (Wu, 2021). Chronic illness negatively affects employee productivity, and workplaces generate several associated costs. Healthy workers are productive and raise healthy families; therefore, a healthy workforce is an important strategy to overcome poverty (Suárez et al., 2021).

Organizations must treat employees' complaints seriously and ensure they feel safe and healthy. A healthy and safe work environment helps reduce costs and improve organizational efficiency. Segbenya (2022) explained that if work-related illnesses and accidents can be transferred to the balance sheet, the organization can apply the same management and innovation efforts to design and maintain a healthy and safe workplace that managers are accustomed to using in other business areas. According to Robbins (2022) accident prevention can be integrated into the company's general economic activity.

Occupational safety and health can be very effective in improving the employability of workers through (re)design of the workplace, by maintaining a healthy and safe work environment, training and retraining, assessment of work demands, medical diagnosis, health screening and assessment of functional capacities (Lefter et al., 2017). At the workplace, employees typically face the following types of health hazards: physical, biological, chemical or psychological (Sikpa, 2011). If the workplace faces health hazards, occupational diseases occur, which may cause a decrease in future and whose connection may not be related to their job (WHO, 2020). An Occupational health hazard refers to a disease caused by workplace conditions.

The main purpose of this study is to measure the health and safety standards and their impact on employee performance of the organization that manufactures different machine parts, such as agricultural tractors and motorcycle parts (Segbenya et al., 2021). This study will be helpful for the organizations in different ways. This study will be helpful for organizations in developing occupational health and safety policies (Nasir et al., 2021). The CEO, who has to look after all matters of Occupational Health and Safety management, will acquire guidance from this study (Akbar, 2013). This study will also help develop occupational health and safety practices that support the organization's strategic plan. This study will provide complete knowledge to foster a future focusing on constructive behaviors and leadership styles (Segbenya et al., 2022).

One of the fundamental objectives of organizations is to optimize human resources to achieve set objectives. Interagency health and safety issues are essential to operational performance (Badrianto & Ekhsan, 2020). Occupational accidents and illnesses are among the leading causes of lost time in industrial production, and these injuries have become a major challenge in most manufacturing industries (Shadare et al., 2019). Businesses have experienced long-term declines in productivity, compensation, insurance premiums and legal battles due to injuries, deaths, quality of life, family problems, short life expectancy, and other effects that are impossible to quantify regarding staff quality. , the organization, the community and the nation (Alli, 2008).

Worker health and safety are moral responsibilities in our society that may not only depend on the production requirements of a particular company but may also have negative consequences on individual workers, society, and the nation as a whole (Shadare et al., 2019). The study is expected to boost employee morale and ensure workplace safety by better understanding the organization's health and safety practices. The study will also help workers meet organizations' health and safety

standards, which will reduce workplace accidents and injuries in the long run, thereby increasing their performance and productivity (Alli, 2008; Chidi & Ayinla, 2019). This study will serve as a basis for increasing health and safety awareness, identifying weaknesses in various employer strategies to improve health and safety standards and recommending possible ways to improve them. Employers will appreciate the cost of equipping employees with appropriate protective clothing and standards to ensure an accident-free environment (Bahari et al., 2022).

Literature Review

Occupational health, from the literature of Abdullah et al. (2009), can be described as the workplace workers have a sound state of body and mind, which may be badly affected due to procedures, processes and materials. On the other hand, the safety of workers at the workplace is how workers are protected from physical injuries. Health Hazards typically associated with employees at the workplace can be chemical, physical, biological or psychological (Skipa, 2011). Many factors affect workers' health and safety in the workplace, but the three most common factors are health standards, safety standards, and workplace conditions. If the workplace is unsafe, it can be dangerous for the health and safety of employees, which ultimately has a negative impact on their health in the same manner that good health and safety require the volume of its employees. (National Workshop: OSH in Pakistan, 2013).

According to Adeogun and Okafor (2013), a survey that the Lahore-based Centre conducted for the Improvement of Working Conditions and Environment (CIWCE) in which it was found that those industries in which there is a shortage of prevention facilities from fire and medical facilities, transport facilities in case of emergency, adequate exhaust filters and disposal systems for wastes are alarming situations (Priarso et al., 2018). Occupational accidents are higher in the chemicals, paper, electrical and electronic industries and workers in such industries mostly suffer from such types of deceases like lung cancer, skin and eye allergies, headaches, deafness, etc. Occupational health and safety mean all those strategies, measures and processes necessary to protect the workers from health and safety hazards. When the workers fully understand the rules and regulations for health and safety at the workplace and know how to use tools effectively, it helps them to work better. As a result, their performance is also better (Lim, 2021). The performance of employees is directly affected by health and safety promotion at the workplace.

A good workplace culture may be built on good occupational health and safety management practices, and as a result, the overall performance of the employees will be effective. It also motivates the employees to be more creative and innovative (Hudson, 2020).

Many workers work in different Pakistan’s but must be provided safe and healthy workplaces. As a result, they suffer from different diseases, and ultimately, their performance is poor due to bad health. Aslam Miraj of the Labour Qaumi Movement verified that more than fifteen districts in Punjab have power looms, and almost five lack workers are working on these looms, but only 5% are registered. The workers working in different parts of Pakistan’s have not been protected from health hazards at the workplace, resulting in the spread of diseases as well as poor job performance due to bad health, as affirmed by Aslam Miraj of the Labour Qaumi Movement that more than 15 districts in Punjab those have power loom but only five per cent workers of this in Pakistan are registered, almost 500,000 workers are working in these looms. In many industries, workers usually have such types of diseases as hepatitis, tuberculosis, etc., due to the noise of the machines at the workplace; many workers are deaf. (National Workshop: OSH in Pakistan, 2013). According to Victoria (2006) health and safety policies are highly promoted in organizations where employees are kept from danger.

There are many opportunities for the employees to perform better to achieve organizational success. According to Ward et al. (2018) those organizations in which employees feel that organizations are caring of them and there is a positive health and safety system all have a positive impact on employee outcomes, such as job motivation, organizational commitment, safety climate, mental health, job satisfaction, and wellbeing. Such outcomes increase the employees' performance level, and they succeed in their goals. Sekar (2011) states that those organizations who want to maximize their productivity mainly focus on two major areas: personal motivation and workplace infrastructure (Priarso et al., 2018) also, Wang et al. (2022). Work gives much financial and other profit because people spend their time in the workplace worldwide. Still, at the same time, workers have to face many health hazards, which can be chemical, physical and psychological; not only the nature of work but also the workplace environment affects the employee's health (Stavroula et al., 2010).

Due to a healthier workplace, the performance of employees, level of production and satisfaction increase. Occupational health and safety negatively affect the job performance of employees, which means if there is a weakness in high performance in the job, the organization's performance also gets affected, hence also affecting the overall organization's performance. As aa result of new technology, the output of organizations has improved. Still, at the same time, this technology also causes health and safety hazards in the workplace due to the danger attached to new technology (Rizwan et al., 2008). Working at a safe and healthy workplace is an employee's legal right; therefore, health and safety play a very important role in the workplace; workers who work at a healthy and secure workplace are psychologically strong, and this thing helps them to perform better (Bamiture, 2007). Health and safety are important in a workplace for legal, moral and psychological reasons. It is a legal right of employees to work in a safe and healthy workplace.

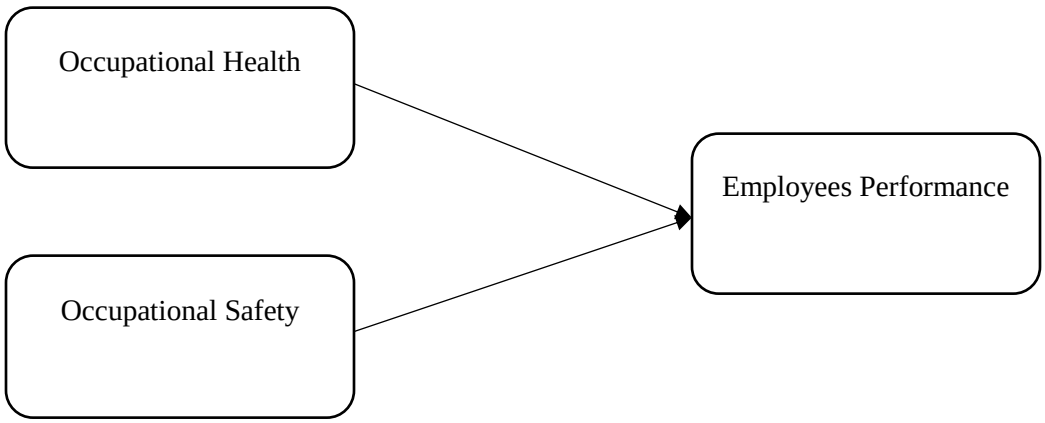
A healthy and safe workplace can have a strong positive effect on the psychological contract. Employees with a safe psychological mind are very important for organizations to perform better. This ultimately affects the productivity, quality of work and efficiency of the employees (Wang et al., 2022). Sri (2018) found in study that a secure and safe workplace decreases accidents, increases employee relations and encourages employee commitment to quality work. Job performance or productivity of employees is reduced due to health hazards at the workplace, which can be noise at the workplace causing headaches, breathing problems or dread of contact with such things, which can cause health problems in the long run. This means the development of a healthy and safe work environment is very beneficial for the employer because employee performance increases due to a healthy workplace, and resultantly, the performance of an organization can also be maximized by Skippa (2007).

An insecure workplace is a concern for everyone. Due to headaches, breathing difficulties, watering eyes, or fear of exposure to materials, the employees cannot work properly, and as a result, their productivity decreases (Tjahjaningsih et al., 2019). So, the provision of a safe and healthy environment is not only beneficial for employees but also for the employer. The Occupational Health and Safety Act 2000 specify the minimum requirements for OHS employers to minimize occupational accidents, diseases and disabilities, promote good health at the workplace, and promote a good work environment for workers and those in proximity (Tjahjaningsih et al., 2019). Employers should assess their health and safety risks by consulting with the occupational health and safety committee to determine what types of hazards they face in the workplace (Bamutire, 2007). With the increasing improvement in technology, the workers at the workplace have to face many health and safety issues like different diseases and accidents,

especially in a country like Pakistan where most of the employees do not know about the health and safety standards at the workplace because they are illiterate (Riyanto et al., 2021).

Theoretical Framework

Figure 1: Theoretical Framework



Hypothesis Formulation

H1: There is positive and significant relationship between occupational health and employees performance

H2: There is positive and significant relationship between occupational safety and employee's performance.

Data

This study was carried out in the manufacturing sector in Lahore, Pakistan. Subjects of the study specifically included management, supervisors/line managers and operational workers. In this study, the data were collected through the use of questionnaires. The questionnaire consists of a point Liker scale ranging from "strongly agree" to disagree strongly". The researcher has done all operations for the collection of the data. The questionnaire for supervisors/line managers and operational staff included 18 questions, of which 08 were for occupational health, 05 were for occupational safety, and 05 were for employee performance. According to Parashakti et al. (2020) population refers to the complete set of individuals (subjects or events) having common characteristics in which the researcher is interested. This study's target population comprises line managers/supervisors and operation staff of auto and machine parts manufacturing companies in Pakistan.

According to Putri et al. (2018) sampling is selecting a portion of the population to represent the entire population in the study. The middle/line managers and factory operational staff were randomly selected from the groups of production, supervisors, and workers in the maintenance and warehouses of the companies. The researcher adopted a random sampling procedure to select individuals because the random sampling method ensures high sample reliability and a high degree of representativeness and allows for the generalization of research findings (Motowidlo, 2003). Structured questionnaires were developed and distributed to 250 workers comprising production staff and management. For data analysis, 180 responses were useable.

Methodology

In this study PCA has been used to develop factors from different items or each construct. Optimal weight is used by PCA for each observed variable to develop a principal component in the form of linear combination of observed variables related to factor. PCA develops a principal component in the following way

PC = a1(X1) + a2(X2) + ……+ an(Xn)

PC = Principal Component,

an = regression weight for observed variable

Xn = Subject's corresponding score on observed variable n.

In this study regression analysis is conducted to determinant the effect of occupational health and occupational safety on the employee's performance and for this regression equation is formed in this manner

EPi = C + B1 (OHi) + B2 (OSi) + Ui

In this equation EP, OH and OS represent employee's performance, occupational health standards of employees and occupational safety standards of employees respectively.

In this study data were collected through questionnaire which includes 8 questions to measure the occupational health of employees, 5 questions to know about the safety status of the employees and 5 questions to determine the employees' performance. All the responses on 18 items vary from 01 to 05.

Table 1: Demographic Profile of Respondent

Respondents Demographics		Frequency	Percentage
Gender	Male	136	75.6%
	Female	44	24.4%
Age	Under 30	60	33.3%
	30-39	77	42.8%
	40-49	34	18.9%
	50-59	6	3.3%
	Above 59	3	1.7%
Salary	Below rupee 10000	17	9.4%
	10000-20000	55	30.6%
	21000-30000	47	26.1%
	31000-40000	37	20.6%
	Above 40000	24	13.3%
Qualification	Under matric	22	12.2%
	Matric	32	17.8%
	Intermediate	36	20%
	Graduation	39	21.7%
	Masters	51	28.3%

In order to check the reliability and internal consistency of the constructs Cronbach's alpha test has been used.

The table 1 given below shows the Cronbach's alpha values for employees performance, occupational health and occupational safety The Cronbach's alpha value for occupational health

standards of employees is 0.819, occupational safety of the employees is 0.810 and employee's performance is 0.758 respectively.

Table 2

Constructs	Valid No	No of items	Cronbach's Alpha
Occupational Health	180	8	0.860
Occupational Safety	180	5	0.810
Employees Performance	180	5	0.758

In this study principal component analysis has been employed with varimax rotation method to confirm construct validity. Table 2, 3 and 4 represent the results of PCA. In order determine the sampling adequacy test Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity has used to check the adequacy of data to apply the factor analysis. In table 1.2 KMO and Bartlett's test has been given which show the adequacy of data for factor analysis. For occupational health the value of KMO is 0.844, for occupational safety the value of KMO is 0.803 and for employee performance KMO value is 0.773. Bartlett's test of sphericity investigates the relationship between items of a construct. If the construct items are mutually related then factor analysis is applicable. The table 3 shows the significance level is less than 0.000 for all of the constructs so null hypothesis of no correlation is rejected and factor analysis is applicable.

Table 3: KMO and Bartlett's Test

Constructs	No of items	KMO Measure of sample Adequacy	Bartlett's Test of sphericity Chi-square	Bartlett's test of sphericity sig
Occupational Health	8	0.844	403.010	.000
Occupational Safety	5	0.803	287.770	.000
Employee' performance	5	0.773	209.932	.000

Table 4: Eigen values and Total variance Explained

Construct	Components	Initial Eigen Values		
		Total	% of variance explained	Cumulative % of Variance explained
Occupational Health	Comp 1	4.052	50.650	50.650
Occupational Safety	Comp 1	2.874	57.448	57.448
Employees performance	Comp 1	2.566	51.321	51.321

Components having Eigen values more than 1 for a construct are used for further analysis. The Eigen values showed in table 4 for occupational health, occupational safety and employees performance are 4.052, 2.874 and 2.566 respectively and their % variance explained values are 50.650%, 57.448% and 51.321%. According to general rule of Eigen value over 1 only one component for each construct has been made.

Table 5: Factor Loadings

Variable	Items	Factor Loading
Occupational Health	Sleep disorder or problem (e.g., sleep apnea, insomnia, narcolepsy, etc…)	.706
	Usually stay at home as a result of heath problem	.744
	Do the following factors prevent you to become more active (injury, Family commitment, work commitment)	.652
	Allergies (e.g., dust, coal tar, bees, etc…)	.680
	Do you mostly suffer from respiratory problems (coughing, wheezing, or breathing difficulties)	.746
	Are you often tired?	.722
	Ear disorder or impaired balance or hearing (excludes hearing aids)	.775
	You regularly have problems concentrating	.658
Occupational Safety	All employees given the opportunity to voice out health and safety opinions/concerns?	.662
	Favorable environmental conditions (less noise, suitable temperature etc) is provided at the work place	.779
	Job-specific health and safety training/education must be provided to all employees prior to starting a new job.	.794
	Are there proper repairing facilities of equipment before and after using them?	.822
	The organization have procedures for employees for reporting pains or other diseases in relation to the job processes	.724
Employees Performance	I perform task that are expected from me	.796
	I feel successful on my job when, I perform better than my colleague.	.789
	I am clearly the most productive employee	.678
	I continue to look for new ways to improve the effectiveness of my work	.575
	I make constructive suggestion to improve the overall	.721

Table 5 contains factor loadings. How each item loads into its relative principal component are showed by factor loadings. In this study PCA extracts one component as principal component for employee's health standards consisting of 8 items. Only one component is extracted as principal component for employee's safety standards which consists of 5 items. For employees performance there is also one component is extracted as principal component. For all of three constructs just only one component is extracted by PCA for each construct. Values of loadings of all the items used in this study vary from 0.42 to 0.82.

Table 6: Descriptive Statistics

	Total Respondents (N)	Mean	Standard Deviation
Occupational Health	180	3.36	.888
Occupational Safety	180	3.13	.837
Employees Performance	180	3.25	.779

Table 6 shows that the respondents consist of 180% peoples. The mean of occupational health was 3.36 and standard deviation .888. The means of occupational safety and standard deviation 3.13 and .837 respectively. Employees performance mean and standard deviation of is 3.25 and .779 respectively.

Table 7: Regression Analysis Employees' performance is Dependent Variable

Regressor	Coefficient	Standard Error	t-Ratio
Constant	-1.023E-016	0.061	.000
OH	0.353	0.064	5.554*
OS	0.376	0.064	5.919*

Note: * represents Significance of the coefficients at less than 0.05

Table 8: Necessary statistics

R^2	Adj. R^2	F-Statistic	Prob. (F-statistic)
0.339	0.332	45.480	.000

The results of the regression analysis are given in Tables 7 and 8. According to these results, the effect of occupational health and safety is significant. Regression analysis shows that the effect of organizational health on employees' performance is (β =.0.353 p <.05), and the effect of occupational safety on employees' performance is (β =.0.376 p <.05), its mean occupational safety is more significant than the occupational health, but both effects are positive and significant. The value of the adjusted R square is (0.332), which shows that OH and OS explain a 33% variation in employees' performance. The value of F-statistic=45.480 and the value of P=0.000. These values show that the joint effect of the independent variables on employee performance is significant, and our model is a good fit.

Conclusion

In this study, it is concluded that occupational health standards and safety equally affect employees' performance. The results of this study show that both positively and significantly affect employee performance. The impact of occupational safety on employee performance is slightly more than occupational health standards on employee performance. However, its significance is almost equal to the significance of occupational health standards. So, we can conclude from the above results that occupational health and safety standards are important to achieving employees' better performance and ultimately achieving organizational goals.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are made.

Management must be responsible for the safety and health needs and concerns of its employees while also being more sensitive to employee issues. This can be accomplished by providing a suggestion box or other means for employees to suggest improving security. Management should allocate funds and invest in workplace health and safety programs.

Future Directions

This planner should include proactive measures such as near-miss reporting, accident investigations, risk assessment, compliance audits, and the use of inherently safe technologies. Health and safety measures must be implemented, and employees must be trained to use emergency facilities in case of a problem. Workplace health and safety policies should be reviewed to ensure businesses have up-to-date safety measures.

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