VOL. 09 NO. 5,
AUGUST, 2025
E-ISSN 3027-1339
P-ISSN 3026-8257



African Scholar Publications & Research International
www.africanscholarpub.com

Journal of Systematic, Evaluation and Diversity Engr. (JSEDE)

The Impact of Workplace Hazards, Employees Health and Safety Status on Productivity in a Subsidiary Company of the Oil and Gas Sector

Okobo Sylvia Chinedu; & Onosemuode Christopher
Department of Environmental Management and Toxicology, Federal University of Petroleum Resources, Effurun, Warri, Delta State, Nigeria
Corresponding Author: onosemuode.chris@fupre.edu.ng
DOI: https://doi.org/10.70382/ajsede.v9i5.016

Abstract

The study focuses on the impact of workplace hazards, employees' health and safety status on productivity. The study made use of the survey method of data gathering in which three hundred copies of questionnaires were randomly distributed and two hundred and forty-five were retrieved. Percentages and table were used to present the outcome of the results. The study shows that the years of experience of the workers as exemplified in the study shows a remarkable long period of service for the respondents to be able to understand the impact and effects of hazards on workers and their implications on productivity with 31.0 percent of respondents having 21 to 25 years of active service, 24.9 percent had 16 to 20 years, 22.9 percent had 26 to 30 years of working experience, and 21.2 percent had 31 to 35 years of active service. With reference to work hazards, Explosion and fire accounted for 13% of all workplace hazards, closely followed by work stress with 11.8 percent and trips and falls with 11.5 percent. Ergonomic risks were 11.0%, electrical risks were 11.2%, and vehicle collisions were 11.3%. Machine hazards accounted for 9.3%, confined space hazards for 7.6%, and vibration hazards for 5.7%. The outcome of hazards on workers' health shows that 18.8% of the respondents were of the view that workplace hazards has caused them injuries, 14.7% responded to chronic illnesses such as cancers, respiratory diseases, and damage to organs like the liver and kidneys. 31.0% complained of stress and anxiety due to work hazards, decline in mental health accounted for 21.2% while reduced job satisfaction had 14.3%. While the impact of workers' health on productivity shows that Working over- time all the time leading to breakdown of workers was considered the most critical issues of the impact of employee's health on productivity and it accounted for

19.2%, this is followed by the absence of adequate and appropriate Personal Protective Equipment (PPE) 16.4%. For productivity in the subsidiary companies of the Oil and Gas companies to be at their optimum, the safety and health of employees should be taken as priority by the management as productivity depend on the performances of employees.

Keywords: Hazards, Oil, Gas, Workers, Health, Productivity.

Introduction

Occupational health entails the promotion and maintenance of the highest degree of physical and mental health and social well-being of workers in all occupations (Taderera, 2012). Occupational Safety and Health has recently become a much higher priority in light of the growing evidence of great loss and suffering. Occupational health and safety practices are concerned with protecting employees and other people affected by what the organization produces and does- against the hazards arising from their employment or their links with the organization. Occupational health and Safety could therefore be taken to mean the activities, processes, or procedural strategies to protect and promote the health and safety of workers and welfare in the context of preventing accidents and ill-health to employees while at work (Clare, 2014). It also revealed that when employees are evaluated for their safety performance, they are included to seek and implement practical safety improvement ideas. A good practice of Occupational Health and Safety management in an organization should demonstrate better task performance and citizenship behaviour which at the end of the day increases performance. The need for Occupational Health and Safety practices for every department in an organization can offer employees with a clear accepted code of rules or procedures about the safe operation of machinery, various devices and appropriate behaviours. An accident is an unintentionally-caused event (Akpan, 2011). It is a sudden and unwanted event caused by an outside influence that causes harm to people and result from interaction among people or between people and object. Work place accident entails unplanned, unexpected and controllable event that cause injury to workers or equipment, or both. It is an abrupt and unpredicted occurrence in industry that disrupts the methodical process of work.

Health at work and healthy work environments are among the most valuable assets of individuals, communities, companies and countries (Hassard, 2018). Occupational safety and health is an important strategy not only to ensure the health and safety of workers, but also contribute positively to productivity, quality of products, work motivation, job satisfaction and thereby to the overall quality of life of individuals and society (Boom 2014; Sharif, 2012). This study is therefore to assess the impact of workplace hazards, employees' health and safety status on productivity.

HYPOTHESIS

The hypothesis guiding this study is stated as:

H_0: The hazards at work in the subsidiary companies of the Oil and Gas Sector are not dependent on one another.

H_1: The hazards at work in the subsidiary companies of the Oil and Gas Sector are dependent on one another.

LITERATURE REVIEW

Employees are major assets of any organization. The active role they play towards a company's success cannot be underestimated. As a result, equipping these unique assets through effective training becomes imperative in order to maximize the job performance. Also position them to take on the challenges of the today's competitive business climate (Nassazi, 2013). It is a fact that every worker is exposed to some sort of hazard; or every work is associated with hazards that may be obvious and acute, or insidious and slow to manifest.

Considering the welfare and safety of employees in order to boost productivity and profitable must be minimized or prevented because it serves as a negative catalyst for declined productivity. Illuminate the effect of occupational hazards on employee's productivity is crucial, because it negatively affects productivity, which in turn affects organizational profitability. It is a fact that profit maximization serves as an important objective for setting up business organizations by mentioning Ayalew and Demissie (2020). Organizations are set up to achieve specific goals and objectives. Such objectives are achieved by harnessing the resources available including human resources. The human resource is the most critical asset of the organization because other assets are inanimate. Occupational health does not only deal with occupational hazards causing accidents and occupational diseases but also includes all kinds of factors at work or related to working conditions that may cause or contribute to diseases/deviation from good health (Ofoegbu, 2013). In any event of occupational hazard, there is the possibility of causing an accident which may directly or indirectly lead to declined productivity. Productivity in its broadest sense refers to the qualitative relationship between what is produced and resource used in producing a given production. The research result revealed that exposure of workers, occupational accident and occupational hazards have a negative impact on employee's productivity and this implies that 1% increase in them will reduce the productivity by 85.6%, 87.1 and 55.2% respectively. While provision of safety materials, training of employees and safety measures have positive impact on employee's productivity in an organization and this implies that 1% increase in them will increase the employee's productivity by 19.2%, 55% and 7.3% respectively (Ofoegbu, 2013). However, 92.2% of the respondents had no regular supervisions and communication on safe work procedures; 86.5% worked without health and safety instructions, symbols and pictograms; 82.7% reported there were no programs for health and safety at work. Because shortage of facilities such as drinking water, shower, toilets, and hand washing facilities were noticed in the firms. In many circumstances, chemical sprayers, supervisors and their assistants did not

consider wind directions (Geleta et al., 2021). Healthcare workers are exposed to a large number of concomitant risks such as: Among occupational hazards happened in industries or working places are a chemical hazard is a substance that has the potential to cause harm to life or health.

The production of particleboard used for furniture making and construction is increasing in many countries, and cause dust, endotoxin and formaldehyde exposure of the workers. Particleboard workers had higher prevalence of wheezing, cough, cough with sputum production, phlegm, and shortness of breath compared to controls. Workers in the particleboard manufacturing factories in Ethiopia had significantly higher prevalence of respiratory symptoms compared to water bottling workers' control. The lung function values were not significantly different between the two groups when adjusting for age, height, previous respiratory illness, availability of separate kitchen and use of biomass fuel as source of energy (Asgedom et al, 2019). Workplace stress is a public health problem worldwide; Studies focusing on work-related stress among vehicle repair workers are scarce in African countries. Work-related stress is defined as the harmful emotional and physical responses that employees experience when their abilities and skills do not meet current job requirements and that challenge their ability to cope. The most important independent risk factors identified by a multivariable logistic regression model were work experience, work-related musculoskeletal disorder, servicing large-sized vehicles, and squatting and lying work postures. In other words, these factors were workers' years of service, symptoms of pain on various body regions, and the work environment (Mulugeta et al, 2021).

RESEARCH METHODOLOGY

Data Source

The sources of data were primary and secondary, with the primary source comprising the use of questionnaire designed to capture the opinion of respondents while the secondary source of data was the consultation of journals, periodicals relevant to the study.

Target population

The target population, is "a group of individuals or a body of people or any collection of items under consideration from which samples are taken for measurement". The population involved in this study were staff from a subsidiary company of the Oil and Gas sector in Nigeria. The researcher used Taro Yamane's formula to determine the sample size of three hundred. The three hundred copies of questionnaires were randomly distributed and two hundred and forty-five (245) were returned, which were used for the study.

Method of Data Collection

The data for the study were collected through the administration of questionnaire. The questionnaire had five A-to-E sections. The first section included the age, gender, marital status, employment type, and number of years of service of respondents. In the second section,

hazards in the workplace were discussed. The third section contains information on the impact of the hazards on workers' health and on productivity. The random method was used to administer the questionnaire across the study area

Method of Data Analysis and Presentation

The data generated from the administered questionnaire were coded, tabulated, and analyzed using SPSS statistical software in accordance with the research hypothesis. The hypotheses were tested using the Chi square analysis techniques. The analyzed data were presented using tables showing their frequencies and percentages.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

In the subsections that follow, we looked at the segment characteristics of the review respondents.

Educational background of Respondents

As shown on Table 1, 37.6 percent of respondents hold either a B.Sc. or HND, 25.7 percent hold an Ordinary National Diploma (OND), 14.3 percent hold a certification from the Senior School Certificate Examination (SSCE). Certification and 22.4% of the respondents had a Postgraduate degree.

Table 1: Educational Background of Respondents

Educational Background	Respondents	Percentage (%)
SSCE	35	14.3
OND	63	25.7
HND/BSC	92	37.6
MSC and above	55	22.4
Total	245	100

Sex of Respondents

The gender of the respondents shown in Table 2 has 56.3% of the respondents to be male and 43.7% female.

Table 2: Sex of Respondents

Sex	Respondents	Percentage
Male	138	56.3
Female	107	43.7
Total	245	100

Age of Respondents

The age distribution of respondents, as shown in Table 3, was as follows: 25.7 percent of the respondents were between the ages of 20 and 30, 31.0% were between the ages of 31 and 40, 22.9% were between the ages of 41 and 50, and 20.4% were between of 51 years and above.

Table 3: Age of Respondents

Age	Respondents	Percentage
20-30	63	25.7
31-40	76	31.0
41-50	56	22.9
51 and above	50	20.4
Total	245	100

Employment Status of Respondents

The employment status of respondents, as shown in Table 4, revealed that 59.6% were regular employees of the organization and 40.4% were contract employees.

Table 4: Employment Status of Respondents

Occupation	Respondents	Percentage
Regular Employee	146	59.6
Contract Employee	99	40.4
Total	245	100

Years in Service of Respondents

Table 5 shows that 31.0 percent of respondents had 21 to 25 years of active service, 24.9 percent had 16 to 20 years, 22.9 percent had 26 to 30 years of working experience, and 21.2 percent had 31 to 35 years of active service.

Table 5: Years in Service of Respondents

Years in Service	Respondents	Percentage (%)
16-20 years	61	24.9
21-25 years	76	31.0
26- 30 years	56	22.9
31- 35 years	52	21.2
Total	245	100

Workplace Hazards in the Subsidiary Company of the Oil and Gas Sector

Table 6 displays the outcomes of the evaluation of the workplace hazards as responded to by respondents. Explosion and fire accounted for 13% of all workplace hazards, closely followed by work stress with 11.8 percent and trips and falls with 11.5 percent. Ergonomic risks were

11.0%, electrical risks were 11.2%, and vehicle collisions were 11.3%. Machine hazards accounted for 9.3%, confined space hazards for 7.6%, and vibration hazards for 5.7%.

Table 6: Workplace Hazard in the Subsidiary Companies of the Oil and Gas Sector

Hazards	Observed Frequency	Percentage (%)
Machine hazard	55	9.3
Explosions and Fire	77	13.0
Falls and Trips	68	11.5
Confined Space	45	7.6
Noise	45	7.6
Vehicle Collision	67	11.3
Electrical hazards	66	11.2
Ergonomic hazard	65	11.0
Work Stress	70	11.8
Vibration	34	5.7
Total	592	100

The Impact of Workplace Hazard On Workers Health

The impact of workplace hazards on workers' health was sort from the respondents and the outcome is shown in Table 7, with 18.8% of the respondents were of the view that workplace hazards has caused them injuries, 14.7% responded to chronic illnesses such as cancers, respiratory diseases, and damage to organs like the liver and kidneys. 31.0% complained of stress and anxiety due to work hazards, decline in mental health accounted for 21.2% while reduced job satisfaction had 14.3%.

Table 7: Impact of Workplace Hazard on Workers Health

Impact of Workers' Health	Respondents	Percentage (%)
Injuries	46	18.8
Chronic Illnesses	36	14.7
Stress and Anxiety	76	31.0
Mental Health Decline	52	21.2
Reduced Job Satisfaction	35	14.3
Total	245	100

The Impact of Employees Health and Safety Status on Productivity

The results of the evaluation of the effect that representatives' health and safety status had on their efficiency are presented in Table 8. Working over- time all the time leading to breakdown of workers was considered the most critical issues of the impact of employee's health on productivity and it accounted for 19.2%, this is followed by the absence of adequate and appropriate Personal Protective Equipment (PPE) 16.4%. Fatalities/incidents accounted for 13.5%. Unconducive working environment had 12.2%. This was followed by Loss of man

hour due to heath challenge with 11.4%. Absence of complete working tools, Absence of sick leave and Absence of clinic and sick bay accounted for 10.6%, 9.0% and 7.8% respectively.

Table 8: The Impact of Employees Health and Safety Status on Productivity

Impact of Employees' Health on Productivity	Frequency	Percent (%)
Fatalities/ Incidents	33	13.5
Loss of man hour due to heath challenge	28	11.4
Unconducive working environment	30	12.2
Absence of clinic and sick bay	19	7.8
Working over- time all the time leading to breakdown of workers	47	19.2
Absence of sick leave	22	9.0
Absence of adequate and appropriate Personal Protective Equipment (PPE)	40	16.3
Absence of complete working tools	26	10.6
Total	245	100.0

Statistical Inference

Chi-Square analysis was used to test the stated hypothesis which states that:

H_0: The hazards at work in the subsidiary companies of the Oil and Gas Sector are not dependent on one another.

H_1: The hazards at work in the subsidiary companies of the Oil and Gas Sector are dependent on one another.

At the 0.05 alpha level, 10D.f has a calculated value of 26.73406867 and a critical value of 18.30703805, as shown in Table 9. The determined value, which is greater than the critical value, the invalid speculation is dismissed, and the substitute theory is acknowledged: " According to the findings of the study, "the issues of workplace hazard in the subsidiary companies of the Oil and Gas Sector are dependent on one another." This demonstrates that each distinct issue is dependent on the outcomes of the others.

Table 9: Chi Square Analysis of the Issues on Workplace Hazard in the Subsidiary Companies of the Oil and Gas Sector

Issues	Observed Frequency	Expected Frequency	P-Value	Alpha Value	D.F	Critical χ^2	Calculated χ^2
Machine hazards	55	55.16172					
Explosions and Fire	77	55.16172					
Falls and Trips	68	55.16172					
Confined Space	45	55.16172					
Noise	45	55.16172					
Vehicular collision	67	55.16172	0.001315647	0.05	10	18.30703805	26.73406867
Electrical hazards	66	55.16172					
Ergonomic hazard	65	55.16172					
Work Stress	70	55.16172					
Vibration	34	55.16172					
Total	592	55.16172					

Discussion

The years of experience of the workers as exemplified in the study shows a remarkable long period of service to be able the respondents understand the impact and effects of hazards on workers and their implications on productivity. This assumption was also recorded by Asikhia, and Emenike, (2013).

The various workplace hazards associated with the Oil and Gas sector were related to explosion and fire ranking highest with 13.0%, work stress having 11.8% which corroborated the studies of Alkilani, et al., (2013) while electrical 11.2%, ergonomics 11.0% and mechanical 9.3% hazards as found in this study corroborated the studies of Andhra, (2018); Aliyu and Saidu (2011).

The impact of workplace hazards on workers' health as observed in this study, closely corroborated the study of Faith Eyayo, (2014), which have stress and anxiety, mental health decline and reduced job satisfaction as the major worrisome impacts.

The impact of employees' health on productivity has breakdown of workers due longer working hours and fatalities/incidents ranking the most which have been a worrisome situation among the workers in the Oil and Gas sector as recorded by Zeb et al., (2017) and Benson et al., (2021).

CONCLUSION

For productivity in the subsidiary companies of the Oil and Gas companies to be at their optimum, the safety and health of employees should be taken as priority by the management as productivity depend on the performances of employees. The issues of workplace hazard in the subsidiary companies of the Oil and Gas Sector are dependent on one another. This demonstrates that each distinct issue is dependent on the outcomes of the others therefore in trying to check or reduce the incidence of workplace hazards, a wholistic approached has to be considered.

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