



## RESEARCH ARTICLE

# Industrial Safety Practice and Employees' Performance of Bottling Company in Enugu State

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## ABSTRACT

*The study examined the industrial safety practice and employees' performance of Bottling Company in Enugu State. The objectives of the study were to examine the extent to which personal protective equipment is used to prevent accident in workplace in bottling company in Enugu, to assess the extent to which safety orientation and training help to reduce workplace accident in bottling company in Enugu. The study adopted a descriptive survey research design and the sample size was 234 respondents. Data was collected through primary source and descriptive statistics mean and t-test were used to analyze data. The study revealed that there is high extent to which use of personal protective equipment prevent accident in workplace in bottling company in Enugu and the use of personal protective equipment has significant effect in prevention of workplace accident in bottling company in Enugu with a t-calculated of 1.44 at 0.05 significant level. There is high extent to which safety orientation and training reduce the rate of workplace accident in bottling company in Enugu and safety orientation and training significantly reduce the rate of workplace accident in bottling company in Enugu with a t-calculated of 1.18 at 0.05 significant level. The study recommended among others that employers must ensure to have regular health education programmes for workers. This will enable them protect themselves at work, health and safety devices should be put in place by employers. Workers should also be trained on how to handle such items for their maximum health and safety at work and managers should provide regular education and training on occupational health and safety concerns.*

**Keywords:** Industrial Safety Practice; Performance; Personal Protective Equipment; Safety Orientation and Training

## Introduction

The issue of safety in workplace remains a matter of great concern to many organisations, this is because employees who are sick or injured on the job cannot performance to optimal level in any organisation. For this reason, business has long been interested in the health and safety of its employees. It is believed that the productivity of an employee is a function of some factors which include health and safety. Health in this instance includes total physical and mental stability. Organizations in Nigeria strive to meet health and safety standards as required by the Nigerian Factory Act 1958 and 1987 as amended. Such standards stipulated by the Act help to build an efficient labour force by reducing accidents, absenteeism and turnover. Safety, Health and Environment legislation as well as specific guidelines, requires employers to provide a safe workplace and to minimize exposure to hazardous substances in order to protect the employees' health in the industry.

The health of the workers is that state which enables the worker to perform his day-to-day activity without undue fatigue and illness. The concept of industrial health as stated by Takala (2002) is concerned with all factors which influence the health of people at work. The damaging effect of occupational hazard in bottling industries calls for an assessment and raising awareness amongst organizations as pertains to policies and practice. the

promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations, the prevention among workers of departures from health caused by their working conditions, the protection of workers in their employment from risk resulting from factors dangerous to health, the placing and maintenance of the workers in an occupational environment adapted to his physiological and psychological condition. The importance of health education in any industry cannot be over-emphasized since it is a major factor in hazard control and prevention of accidents (Pamela, et al., 2011).

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Organizations with employees who are at high risk of getting injured, often have structured and well-designed industrial safety practice in place. They understand that having a good plan can significantly improve employees' health, safety, and well-being because they are aware of the consequences of ignoring workplace safety (Martic, 2020). Employee performance is determined by factors such as work quality, quantity, and effectiveness, as well as how your employees behave in the workplace (Ashley & Thompson, 2019). Employees are drawn to a workplace that is free of accidents and injuries. All employees have the right to work in a safe environment. Employees are more content and productive in such an environment.

It is noteworthy that the right to life is fundamental and must be considered sacrosanct. Yet every year 2.2 million men and women are deprived of that right by occupational accidents and work-related diseases. By conservative estimates workers suffer 270 million occupational accidents and 160 million occupational diseases each year. This is perhaps just the tip of the iceberg, as data for estimating nonfatal illness and injury are not available in most developing countries. Occupational injuries alone account for more than 10 million Disability-Adjusted Life Years (DALYs) lost, or healthy years of life lost whether to disability or premature death, and 8% of unintentional injuries worldwide (Pamela et al., 2011).

It is assumed that an organizations employees safety measures have a direct relationship with employees' performance/productivity, it is in view of this fact that assigned tasks can only be safely accomplished when the work environment is safe and conducive for the execution of the assigned duties, be it construction, manufacturing or servicing, thus, any phenomenon that affects human production capacity will invariably affect organizational performance hence improving workers good health offers a company the opportunity of enhancing its performance (Galliker, 2000).

Today, the matter of work-force safety at work is receiving worldwide attention and Nigeria cannot be left out. There is a high rate of industrial accidents and large-scale absenteeism occasioned by ill health among both junior and senior staff. Some jobs are very hazardous, especially the job of the junior staff and the common law requires every employer of labour to ensure that the work-force is safe and that employees doing hazardous work are protected adequately. In that case, safety at work must be pursued as a means of enhancing efficiency and quality of performance (Eze, 2006).

Hence, providing working conditions that promote the safety of employees is therefore becoming a major management concern. Barriers are introduced in the form of guards, clothing, protected areas and the like. Perhaps, equally important, reducing the accident potential of a work environment tends to increase the feelings of security and reducing anxiety levels. This in itself makes people less likely to have accidents because they are no longer distracted by their anxieties. Companies also use publicity campaigns, involving various personnel communication media and contests to promote safety (Cole, 1993). Contests typically provide financial reward to members of groups with low accident rates. The focus of these contests and the measures employed can vary considerably, but the essential ingredient is the idea that it pays to be safe. The influence of an enduring employee's safety management on organizational performance and loss control in the Nigerian industrial clime cannot be over emphasized. Hence, this research study examines the industrial safety practice and employees' performance of bottling companies in Enugu State.

### **Statement of the Problem**

Poor employee health leads to low productivity and most seriously absenteeism with its concomitant effects. Even in the absence of current statistics, many Nigerian employees were injured in their places of work in the past five years, resulting in permanent disabilities. The total cost of this cannot be quantified in terms of money because it may not be accurate to place a monetary value on human lives. The amount of money lost because of hospital bills, lost wages, administrative costs, insurance expenses, burial entitlements and settlements run into millions of naira. This excludes losses sustained by the company as a result of damages to machines and equipment. Safety practice has not been fully institutionalized in Nigeria, thereby giving employers the tendency to handle such critical issues with levity, including the neglect of safety education needs, despite the provisions of the workman's compensation Act in Nigeria that places obligation on employers to take these issues seriously.

Absence of safety practice result in loss of man-hours, output, reputation, absenteeism, employees' turnover gets high as a result of injuries from accident, ill-health and low workers morale. It is on this backdrop that this study was carried to examine the industrial safety practice and employees' performance of Bottling Companies in Enugu State.

### Objectives of the Study

The major objective of the study is to examine the industrial safety practice and employees' performance of Bottling Company in Enugu State. The specific objectives of the study were to:

- i. Examine the extent to which personal protective equipment is used to prevent accident in workplace in bottling company in Enugu.
- ii. Assess the extent to which safety orientation and training helps to reduce workplace accident in bottling company in Enugu.

### Research Questions

The study was guided by the following research questions:

- i. To what extent does the use of personal protective equipment prevent accident in workplace in bottling company in Enugu?
- ii. To what extent does safety orientation and training reduce the rate of workplace accident in bottling company in Enugu?

### Statement of Hypotheses

The following hypotheses were tested in the course of the study:

- i. There is no significant difference between senior staff and junior staff of bottling company in Enugu on the extent to which the use of personal protective equipment on accident prevention in workplace in bottling company in Enugu.
- ii. There is no significant difference between senior staff and junior staff of bottling company in Enugu on safety orientation and training in reducing rate of workplace accident.

### Significance of the Study

One of the primary goals of organisations is to optimize human resource to achieve set targets. Issues of health and safety within organisations are critical in the accomplishment of tasks. Industrial accidents and illness make up one of the largest parts of loss of production level and these injuries have posed a major challenge to most manufacturing industries. Companies have suffered long spells of production shortfalls, compensation payment, insurance premiums and legal battles due to injury, reduction to the quality of life, family problems and decrease of life-span and other effects which is impossible to evaluate its qualitative cost on the employee, organisation, society and the nation in general.

Health and safety of workers is a moral responsibility within our society that cannot only depend on productivity criteria within a particular company but can also have a serious consequence for individual workers, society and the nation as a whole. It is of the hope that the study would boost the morale of employees and ensure job security at all times by getting a better understanding of health and safety practices in the organisation. The study would also help the employees to comply with organisational health and safety standards which in the long run would reduce accidents and injuries at the workplace thereby increasing their performance and productivity.

This study would serve as the bases for increasing the awareness of health safety as well as identifying the weaknesses of the various strategies that employers adopt to enhance health and safety standards and recommend the possible ways of improving them. Employers would appreciate the cost of equipping employees with the right protective clothing and standards to ensure accident-free environment.

Findings and recommendation offered should not only add to existing literature for academic purposes, but also provide useful insights and guidelines for enhancing the quality of health and safety among employees in organisations.

## Review of Related Literature

### Conceptual Review

#### Concept of Industrial Safety Practice

Industrial Safety practice relates to health, safety, and welfare issues in the workplace. ISP refers to the laws, regulations, and programs aimed at improving the working environment for employees, as well as coworkers, family members, customers, and other stakeholders. The single most important factor in reducing accidents is to establish a strong health and safety culture in the workplace. While the health and safety challenges may change in the future, as the ILO's recent report indicates, the need to cut costs, keep workers healthy, and reduce company risks remains constant (Sikra, 2019). The Occupational Health and Safety Administration, state affiliated agencies, national agencies, and international agencies may all impose health and safety regulations. Private industry and trade associations can also set voluntary requirements and monitor their employer members' compliance. Finally, if an employer fails to follow the rules, he or she may face a fine or be ordered to stop working. It's also possible that the employer's industry or trade group will take action against him (Janalta, 2021). Workplaces designed according to good occupational health, safety, and ergonomics principles are also the most sustainable and productive, as demonstrated by the most successful economies. Furthermore, in poor working conditions with workers who are exposed to health and safety risks, a healthy economy, high-quality products or services, and long-term productivity are difficult to achieve, hazards, according to extensive experience from countries.

The value of several principles is demonstrated by available scientific knowledge and practical experiences of enterprises and countries that have achieved the best results in the development of occupational health. These principles have been found to be common denominators in workplaces that have produced the best results in terms of health, safety, social relations, and economic success. In times of crisis, businesses with such occupational settings are the most stable. Adequate legal provisions, administrative enforcement, and service systems for occupational safety and health and occupational health services are required for the implementation of such principles.

#### Safety Provision and Personal Protective Equipment (PPE)

Emanate (2003) sees personal protective equipment as those equipment and wears that protect the worker from direct bodily harm or injuries. It is statutory or legal equipment. Manufacturing firms have many types of hazards as explained earlier due to complexity of the environment. Even after the implementation of the safety requirement through engineering means and during design, there would always be residual risk to workers. As a good safety culture, all workers should be ensured to use the required PPE. At times some workers may feel some inconvenience in using the PPE, but firms should enforce the use of personal protective equipment right from the first day, and each worker should be made to consider this as last defense in dept to save his life. They are the safety helmets, safety belts, safety shoes, hand gloves, Goggles, overall, etc. These should be made available near the workplace and for ease use by workers.

Monitoring and correction should continue to be the way of life. Zohari and Lurria (2003) assert that in order to achieve practical solution and active involvement in accident prevention, safety has to be integrated with the line function. Accordingly, the line managers should supervise and enforce safety requirements in the workplace. It is the line functionaries who know hazards as soon as it is created. He has the power and resources to take an immediate corrective action. Safety personnel should act as a catalyst to enable the line managers to timely remove these hazards and any deficiency in a proactive manner.

#### Safety Management Practice

Safety management practice entails thinking of ways to stay safe while also reducing the risk of future harm or accident. It may entail preparing for a future crisis, weighing your options, and deciding on your next course of action. Finding ways to stay and feel safer can be a big step toward recovery, but these plans and actions shouldn't put you in danger (Rainn, 2021). Every employer must pay attention to their employees' health as well as the safety and security of the environment in which they work. It could be their home, workplace, or any other location where they live. For employees to live a happy life, their surroundings must be clean, hygienic, safe, and secure.

We certainly take care of our surroundings when we are at home, but what about at work? This is a significant question that everyone should consider. We spend more time in the office or at work than we do at home during our peak hours. As a result, it is critical to be safe and healthy at work. As a result, workplace safety is one of the most critical aspects of any business. As an employer, you should provide a safe working environment for your employees, keeping their health and safety in mind. Investing in workplace safety is always prudent-especially when you consider the high cost of injury for both the employer and the individual worker (Sundberg, 2018).

### **Economic Benefits of Safety Management Practice**

Major changes in the global economy and the revolutionary restructuring of production and service organization, coupled with the subsequent changes in working life and in the responsibilities of employees, have created an urgent need to strengthen and adapt the tools and methods used to ensure that Health, Environment and Safety (HES) are protected and promoted at the manufacturing level. This can be achieved by implementing the principles and mechanisms contained in the international statements.

According to Grindle (2000: 29-68), both enterprises and national economy in all WHO member States carry significant economic and social burden caused by accidents, injuries, work related and workplace preventable but non occupational diseases. Economic losses from occupational accidents alone in the world have been calculated at 5-8% of gross national product. Occupational and non-occupational diseases and injuries are responsible for much of the current levels of reduced work capacity, increased temporary and permanent work disability, shortened life expectancy, and premature retirement or death. Also, the high rate of and early onset of chronic diseases contribute to the high expenditure of national health care system, as well as to high demands for disability pensions and compensation from social insurance funds. In addition, industrial and other enterprises that lack adequate preventing and control measures contribute to environmental pollution and pose health risks to the population. Therefore, enterprise or firms integrating health, environment and safety management into their overall management systems gives hope that the wider adoption of this approach will counter several negative trends.

### **Safety Orientation and Training**

In the field of human resource development, orientation and training is a fundamental concept. It is concerned with introducing, teaching and practicing a particular skill to a desired standard. Training is a powerful tool for putting an employee in a position where they can do their job correctly, efficiently, and with integrity. Training is the process of improving an employee's knowledge and skills in order for them to perform a specific job (Smriti, 2021). The prime motivator for employee training is to improve productivity and performance. And when executed well, it does just that. This course aims to provide participants with the fundamental knowledge and skills needed to identify safety, health, and environmental hazards, as well as develop and implement OSH policies and programs (O'Neill, 2020). Safety training refers to educational programs that teach employees how to use preventative processes and procedures to reduce the risk of injury or death on the job. Safety training is a type of compliance training that is given to keep the company and its employees safe.

### **Employee Performance**

One of the most important factors affecting an organization's performance is employee performance. HR is a critical factor that has a direct impact on and contributes to the performance of a successful organization (AL-Qudah, and Al-Shatanawi, 2014). The success of any organization depends on its employees' behaviour and their decision, although there are many other factors that contribute to the success, such as the organization size, the environment in what it operates and its activities. Human resource management practices are frequently used to evaluate an employee's performance in the workplace, and in today's highly competitive environment, the tendency to improve employee performance is to improve HRM practices (Caliskan, 2010; Bowra, Sharif, Saeed, and Niazi, 2012). The employee's performance is use of knowledge, skills, experiences and abilities, to perform the assigned mission required by their managers efficiently and effectively. The importance of employee performance can be expressed in a variety of ways, including 1) assisting in the costing of resources used, 2) a measure of the quantity and quality of work completed, 3) assisting in the survival and excelling of firms, 4) assisting in the assessment and attainment of established performance goals, and finally, 5) increasing the efficiency of employee performance aids in making the best decisions.

Hamzah, Abdullah, & Hamzah (2014) explained how to evaluate employee performance using the following criteria: 1) employee attributes, which confirm important characteristics or qualities to the firm; 2) employee behaviors, which are widely used for evaluating or defining employee behaviors required to complete a job successfully; and 3) employee achievements, which demonstrate the extent to which specific objectives or aims have been met, exceeded, or not met. (Hamzah et al., 2014). Employee performance does not have a single, overarching theory. The efficiency with which organizations manage, develop, and motivate their employees is a critical factor in how well they perform. People management has a significant impact on performance as a result of this. The behavior of people on the shop floor can be traced back to performance (Lodewijk, 2017).

### **Effects of Industrial Safety Management on Productivity**

Safety and productivity are goals organizations would desire to achieve. Wustemann (2008) asserts that productivity plays a part in maintaining the calculated rate of a firms' ability to make things so as to sustain its life-span. Safety ensures that such productivity is maintained at little or no harm to the people involved in or associated with it. Both the employer and the employee have their expectations or goals. While the employer would want the employee to be productive, the employee would want the employer to guarantee him of his safety. These two ends must be achieved for there to be progress or success. This means that both the employer and the employee have linked their success to the goals they set for each other, so when one goals are accomplished within the specified time frame, one feels he is successful with regard to the goals. Setting and accomplishing goals keeps any organization moving in the right direction.

According to Holt (2017), avoidance of accidents requires a sustained integrated effort from all departments, managers, supervisors and workers in an organization. But only the management can provide the authority to ensure that this activity to ensure that this activity is coordinated, directed and funded. In addition, he said that the most effective means of demonstrating management commitment and support is by issuing a safety policy statement, signed and stated by the most senior member of the management team, and then ensuring that the requirements of the policy are carried out by managers, supervisors and workers.

Wusterman (2011) states that positive response at work is that health and safety professionals' sense of the importance of what they do each day, ensuring that workers go home unharmed, is enough than to compensate for the discomfort at work. It shows that the safety needs of the workers and the productivity needs of the employer seen to run counter to each other. While the employer is much more interested in securing high level of productivity may be, without a corresponding provision of safety measures to the workers, the workers insist that their safety needs be fully met for them to be productive as demanded by their employers. The employers because of the cost inherent in providing those safety need, tend to dodge them, while the workers, because of risks inherent in their activities, may tend to dodge work. Although, it is the duty of the industrial engineers to formulate the most effective ways of using people, machines, materials, information, and energy to produce goods or services. But they should strive to balance management goals with the operational performance. In other to get the maximum value out of the employees, the employer should invest in safety training.

### **Theoretical Framework**

#### **Accident Proneness Theory**

In 1925, the psychologist Eric Farmer introduced the term 'accident proneness' in his paper to develop differential tests for susceptible workers. From that time onwards, accident proneness became the indication of the safety theory which explained accident by the individual hypothesis. At the same time, independently the same concept of 'unfallneigung' (accident proneness) and the 'unfälle' (accident prone worker) is developed in Germany by Karl Marbe. Marbe is a psychologist from the Würzburg University, using the accident reports of the Berufsgenossenschaften, the German accident insurance (Burnham, 2008; Farmer, 1925; Hale en Hale, 1972; Marbe, 1925). Both Marbe and Farmer are developing tests to select the unfälle, or the accident-prone workers, and to exclude them from dangerous work. This method of selection has become possible through developments in psycho-technique, an applied form of psychology. During World War I their tests have been utilized on a larger scale for pilot selection and have found applications in trade and industry (Anonymous, 1973; Hoorn et al., 1980; Lochem, 1943). Farmer and colleagues have developed a so-called aesteto-kinetic battery of tests, testing the capacity of coordination and concentration of workers. These accident-prone workers are acting faster than they think, and tests can detect this impulsive behaviour which is an important cause for accidents (Farmer and Chambers, 1926,

1929, 1939; Farmer et al., 1933; Farmer, 1940, 1942). These tests have been applied in various populations, like apprentices of the marines and the army, London bus drivers, shipwrights, mechanics, and electricians. With an exposed population, varying between 650 and 1843 workers, and a sample time between 12 weeks and 5 years, the results only showed a rather low correlation of 0,2 – 0,4 between the test results and accidents. Researchers could not conclude otherwise that accident proneness is dependent on many different factors, which are not quite well understood.

In industrial safety practice and performance of employees the accident proneness theory can be used as a mean to prevent workplace accident before they occur, thereby reduce the necessary cost incurred on accident victims in the workplace.

## **Empirical Review**

### **Use of Personal Protective Equipment for Reducing Accidental Risk**

Iksiroh, Anissofiah and Sarifuddin (2019) examine the use of personal protective equipment for reducing accidental risk on board. The study discussed the use of PPE by student officers during accidents on board. The study used a quantitative method by questioner dissemination to 60 student officers (30 from nautical study and 30 from engineering study) from different grades. The study found that 47 respondents had suffered accident related to PPE, 11 related to improper PPE, 6 accidents due to the absence of helmet, 18 accidents due to the absence of safety shoes, 4 accidents due to the absence of goggle, and 8 accidents due to the absence of glove, resulting in a broken finger accident. The study concluded that the use of personal protective equipment can be use in reducing accidental risk.

### **Orientation and Training Influence on Accident Reduction**

In the study of Ugorji (2014) on effect of industrial safety management on employee performance of the Nigerian manufacturing sector of Enugu State, Nigeria, the study is to identify the relationship between industrial safety management and employee performance, identify the hazards encountered by employees in the Nigeria manufacturing sector, to bring to the fore safety provisions for employees in the manufacturing industry, ascertain that orientation and training influence safety management in the manufacturing organizations, and how safety issues were managed in the manufacturing industry. The population of the study was one thousand, two hundred and twenty (1220) obtained from the selected manufacturing firms in Enugu State of Nigeria. From this, a sample size of three hundred and one (301) was drawn, using Taro Yamane's formula. The instruments for data collection were structured questionnaire and interview. The research design adopted was survey design. Data were presented in frequency tables, Z-test and Friedman Chi-square were used to test the hypotheses. The findings indicate that there were significant relationship between industrial safety management and employee performance, physical and chemical hazards were the hazards encountered in the manufacturing industry, personal protective equipment is the safety provision for employees, orientation and training have significant influences on safety management implementation in the manufacturing industry, safety issues in the manufacturing industry were managed by making the environment hazard free to a great extent.

In the study of Ewuzie and Ugoani (2016) on the degree of health and safety education needs in Nigerian Bottling Company Ltd. Health and Safety programmes receive high attention from governments all over the world because the productivity of an employee is a function of some factors including health and safety. Health is a state of complete physical, mental, social, spiritual and occupational well-being, not merely the absence of disease or infirmity. The Nigerian Factories Act posits that employers should make adequate arrangements for the health and safety of employees including the provision of adequate supply of clean drinking water which should be maintained at suitable points easily accessible to all employees. The survey research design was employed for the study. The sample consisted of 100 females and 200 males; ranging in age from 21 to 60 (Mean: 50:5 years) Data were analyzed through descriptive and Chi-Square statistical methods and the result showed a high degree of health and safety education needs in Nigerian Bottling Company Ltd.

In the study of Okechukwu and Onyia (2022) who examined the relationship between occupational health safety practices and employee performance in manufacturing firms in Enugu State. The specific objectives include: Evaluate the relationship between safety planning and output of manufacturing firms in Enugu state, Nigeria, and investigate the relationship between training programme and quality of service in manufacturing firms in Enugu state, Nigeria.

The target population of this study consists of senior and junior staff of the selected food and beverage manufacturing firms in Enugu State. Out of a population of two thousand, five hundred and fifty-four (2,554) staff, the sample size of 486 was chosen after applying the Bill Godden (2004) formula for the determination of an adequate sample size. Three hundred and ninety-two (392) returned their questionnaire and accurately filled. The Pearson correlation coefficient was used to assess the reliability ( $r$ ). It also yielded a good reliability coefficient of 0.84. Regression analysis was used to examine the data. The findings revealed that there is a positive significant relationship. In Enugu State, Nigeria, there is a link between safety planning and manufacturing output. There was a positive significant relationship between training program and quality of service in manufacturing firms in Enugu state, Nigeria,  $r(95, n = 486) = 427.877, P < 0.05$ ,  $r(95, n = 486) = 575.996, P < 0.05$ . According to the findings, safety planning and training programs had a positive impact on the output and service quality of food and beverage manufacturing firms in Nigeria's Enugu state.

### **Gap in Empirical Review**

The empirical study has shown that various authors have written extensively on the industrial safety management in different States of the federation and even in Enugu State but definitely none specifically on industrial safety practice considering these variables (the use PPE to prevent accident, safety orientation and training). It is on this premise that the present study aims to fill this gap.

### **Methodology**

#### **Research Design**

The research employed a descriptive survey research design. Thus, this study, therefore, has been designed to enable the use of personal observation, interviews and questionnaire to gather accurate information. It also affords the opportunity of assessing large and small population especially when a small population derived from large one, testing and sampling, so as to test validity of result obtained from respondents.

#### **Area of the Study**

Nine Mile is situated in Udi, Enugu, Nigeria, its geographical coordinates are 6° 25' 0" North, 7° 25' 0" East and its original name (with diacritics) is Nine Mile. The industrial hub of Ninth mile started developing around 1976, when the Nigerian Bottling Company opened a bottling plant to produce Coca Cola products. Soon after, many more companies started to spring up around this area. Reno drinks started making bottled products around the early 1980s, followed by Nigerian breweries who set up a big facility to produce Star lager beer, Gulder, Maltina and other drinks. Soon after many more companies are rushing in, Seven Up bottling plant has a big production plant, Aqua Rapha drinks, even Guinness has a big land opposite Nsude seminary.

#### **Sources of Data**

The sources of data for this research are secondary data and primary data. The primary data were collected utilizing communication with the utilization of surveys. Questionnaires were distributed personally. The study depend more on the primary data since the research work is about individuals' attitude, workplace practices and the knowledge of their working environment. Secondary data were collected from journals, articles and books using the school library and web.

#### **Population of the Study**

The population of the study is made up of 561 consists of a set of one hundred and 187 staff each from Nigeria Bottling Company Coca-Cola, 7up Bottling Company and Nigeria Brewery Enugu.

#### **Sample Size Determination**

The sample size for this study was determined by Yamane's formula calculated as shown below:



$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = required sample size

N = Population size

e = margin of error at 5% (standard value of 0.05)

$$n = \frac{561}{1 + 561(0.05^2)}$$

$$n = \frac{3.8416 \times 0.1275}{1 + (561 \times 0.0025)}$$

$$n = \frac{561}{1 + 1.4025}$$

$$n = \frac{561}{2.4025}$$

$$n = 233.506$$

$$n = 234$$

### Sampling Technique

The sampling technique adopted for the study was random sampling technique, respondents were selected at random to give all the staff equal chance of been selected.

### Instrument for Data Collection

A self-structured questionnaire titled “Industrial Safety Practice and Employee’s Performance” (ISPEP) was designed. This questionnaire consists of two sections. Section A was on bio data of the respondents while section B was structured based on the research questions with the four-point scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The questionnaire was personally administered to the staff of bottling company in Enugu and was collected on the spot.

### Validity of the Instrument

The instrument used was developed by the researcher in accordance with the research topic: Industrial Safety Practice and Employee’s Performance in Bottling Company in Enugu and was subjected to face and content validity that was done by the researcher’s supervisor.

### Reliability of the Instrument

The reliability was determined by Cronbach’s Alpha technique. An Alpha of 0.83 was obtained. Since this value is greater than 0.7, the questionnaire was taken to be reliable.

### Method of Data Analysis

Mean (X) and standard deviation (SD) were used to answer the research questions. A mean of 2.50 was taken as a criterion in line with the four-point scale of Strongly Agree (SA) = (4), Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. This means that any mean-score up and above 2.50 will be considered agreed, while any mean score less than 2.50 will be considered disagreed. The tool for testing the hypothesis is t- test. The decision rule of testing the hypotheses was that if the t-calculated is less than or equal to t-table value, then, there is no significant

difference between the scores; that is, we accept the null hypothesis. But whereas the t-calculated value is greater than the t-table value then, there is a significant difference in the mean score, that is, we reject the null hypothesis.

## Results

### Data Presentation

The data collected from the field work were presented and analysed in line with the research questions.

**Table 1: Sex**

Gender	Frequency	Percent
FEMALE	11	4.7
MALE	223	95.3
Total	234	100.0

The data presented above show that 11 (4.7%) of the respondents were female while 223 (95.3%) were male. This shows that majority of the respondents were male.

**Table 2: Age**

Age	Frequency	Percent
31 - 40 YEARS	93	39.7
41 AND ABOVE	141	60.3
Total	234	100.0

Table 2 presented data on age of the respondents, null of the respondents are within the age range of 20 – 30 years, while 93 (39.7%) were within the age range of 31 – 40 years and 141 (60.3%) were within the age range of 41 and above. This shows that all the employees of bottling company are manure enough to know work ethics in content of safety practices.

**Table 3: Academic Qualification of the Respondents**

Qualification	Frequency	Percent
OND/NCE	94	40.2
HND/B.Sc	93	39.7
MBA/M.Sc	47	20.1
Total	234	100.0

Table 3 presented the data on academic qualification of the respondents, the data shows that 94 (40.2%) of the respondents were OND/NCE holders, while 93 (39.7%) were HND/B.Sc holder and 47 (20.1%) were MBA/M.Sc holders. This shows that the employees of bottling company are educated.

**Table 4: Job Status**

Job Status	Frequency	Percent
SENIOR STAFF	74	31.6
JUNIOR STAFF	160	68.4
Total	234	100.0

Table 4 shows the job status of the respondents, 74 (31.6%) were senior staff while 160(68.4) were junior staff.

**Descriptive Statistics**

1. To what extent does the use of personal protective equipment prevent accident in workplace in bottling company in Enugu?

**Table 5: Extent of the use of personal protective equipment in preventing accident in workplace**

S/N	ITEMS	Senior Staff (74)			Junior Staff (160)		
		MEAN	SD	DEC	MEAN	SD	DEC
1	Use of personnel protective equipment (PPE) has Often assisted in reducing cases of accidents in the company	3.25	0.62	Agreed	3.31	0.63	<b>Agreed</b>
2.	Methods used to control hazards and risk has helped prevent cases of accidents and injuries among workers.	3.32	0.78	Agreed	3.33	0.78	<b>Agreed</b>
3.	You always make use of Material Safety Data Sheets when handling chemicals.	3.23	0.52	Agreed	3.27	0.53	<b>Agreed</b>
4.	Management provides suitable Personnel Protective Equipment (PPE) for workers.	3.23	0.52	Agreed	3.28	0.56	<b>Agreed</b>
5.	You usually follow safe work procedures while carrying out your duties.	2.85	0.50	Agreed	2.95	0.50	<b>Agreed</b>
6.	The use of operating safety manual has helped to minimize accident cases in the company.	2.72	0.59	Agreed	2.86	0.58	<b>Agreed</b>
	Grand Mean	2.56	0.59	Agreed	3.17	0.60	Agreed

**Source: Field Survey, 2023**

Table 5 above presented data on extent to which the use of personal protective equipment prevent accident in workplace in bottling company in Enugu, all the items (1, 2, 3, 4, 5 and 6) were accepted because their respective mean ratings were above the criterion mean of 2.50 which is the point for acceptance of the items in the questionnaire.

Furthermore, the grand mean ratings of the 6 items of 2.56 and 3.17 for senior and junior staff of bottling company Enugu were above the criterion mean of 2.50. This indicates that there is high extent to which use of personal protective equipment prevent accident in workplace in bottling company in Enugu.

2. To what extent does safety orientation and training reduce the rate of workplace accident in bottling company in Enugu?

**Table 6: Extent to which safety orientation and training reduce rate of workplace accident**

S/N	ITEMS	Senior Staff (74)			Junior Staff (160)		
		MEAN	SD	DECISION	MEAN	SD	DECISION
6	There is always orientation and training on the use of material safety data sheets to minimizing chemical spills and exposure that can keep a worker few days away from work in your company.	2.73	0.60	Agreed	2.85	0.66	<b>Agreed</b>
8.	Orientation and training on safety issues have reduce accident and increase productivity of workers	2.54	0.60	Agreed	2.72	0.68	<b>Agreed</b>
9.	Training is done in the organisation when employee is promoted to another department	2.89	0.66	Agreed	2.93	0.65	<b>Agreed</b>

10.	Training on Biological and Ergonomic hazards issues has reduced the rate of accident in the bottling company	3.22	0.52	Agreed	3.28	0.56	Agreed
11.	Regular safety hazards and its risk audits have helped in identifying areas of safety hazards and risk weakness in the company	2.82	0.61	Agreed	2.86	0.62	Agreed
12.	Employees are posted to a position where they can handle the equipment better after orientation.	2.75	0.65	Agreed	2.85	0.69	Agreed
	Grand Mean	2.83	0.69		2.92	0.67	

**Source: Field Survey, 2023**

Table 6 above shows data on the extent to which safety orientation and training reduce the rate of workplace accident in bottling company in Enugu, out of the 6 items, all the items (7, 8, 9, 10, 11 and 12) were accepted because their respective mean ratings were above the criterion mean of 2.50 which is the point for acceptance of the items in the questionnaire.

Furthermore, the grand mean ratings of the 6 items of 2.83 and 2.92 for senior and junior staff of bottling company Enugu were above the criterion mean of 2.50. This indicates that there is high extent to which safety orientation and training reduce the rate of workplace accident in bottling company in Enugu.

### Test of Hypotheses

#### Hypothesis 1

H<sub>01</sub>: There is no significant difference between senior staff and junior staff of bottling company in Enugu on the extent to which the use of personal protective equipment on accident prevention in workplace in bottling company in Enugu.

**Table 7: T-test analysis of the difference in the mean ratings of senior staff and junior staff of bottling company in Enugu on the extent to which the use of personal protective equipment on accident prevention**

Staff	N	Mean	S.D	Df	T-cal	T-critical	Decision
Senior Staff	74	2.56	0.59	233	1.44	1.96	Do not reject H <sub>01</sub>
Junior Staff	160	2.57	0.60				

**Source: Field Survey, 2023**

Table 7 above shows that the t-calculated value at 0.05 level of significance and 233 degree of freedom is 1.44, thus, the t-calculated value is less than the critical table value of 1.96. In view of this, the null hypothesis is accepted that there is no significant difference in the mean ratings of senior staff and junior staff of bottling company in Enugu on the extent to which the use of personal protective equipment on accident prevention. This indicates that the use of personal protective equipment has significant effect in prevention of workplace accident in bottling company in Enugu.

**Hypothesis 2**

H<sub>02</sub>: There is no significant difference between senior staff and junior staff of bottling company in Enugu on safety orientation and training in reducing rate of workplace accident.

**Table 8: T-test of difference between the mean responses of senior staff and junior staff of bottling company in Enugu on safety orientation and training in reducing rate of workplace accident**

Staff	N	Mean	S.D	Df	T-cal	T-critical	Decision
Senior Staff	74	2.83	0.69	233	1.18	1.96	<b>Do not reject H<sub>02</sub></b>
Junior Staff	<b>160</b>	<b>2.92</b>	<b>0.67</b>				

Source: Field Survey, 2023

Data in table 8 above reveals that t-calculated value of 1.18 is less than t-critical value of 1.96. Hence the null hypothesis is accepted. This implies that there is no significant difference between the mean ratings of senior and junior staff of bottling company in Enugu on safety orientation and training in reducing rate of workplace accident. This means that safety orientation and training significantly reduce the rate of workplace accident in bottling company in Enugu.

**Discussion of the Findings**

The following constitute the findings of the study:

The study revealed that there is high extent to which use of personal protective equipment prevent accident in workplace in bottling company in Enugu and the use of personal protective equipment has significant effect in prevention of workplace accident in bottling company in Enugu with t-calculated of 1.44 at 0.05 significant level. This finding concurred with the findings of Iksiroh, Anissofiah and Sarifuddin (2019) who found out that the use of personal protective equipment can be use in reducing accidental risk.

This study also revealed that there is high extent to which safety orientation and training reduce the rate of workplace accident in bottling company in Enugu and safety orientation and training significantly reduce the rate of workplace accident in bottling company in Enugu with a t-calculated of 1.18 at 0.05 level of significance. The findings agreed with the findings of Ugorji (2014) who found out that orientation and training have significant influences on safety issues in the manufacturing industry. The findings also agreed with the findings of Ewuzie and Ugoani (2016) who found out that there is high degree of health and safety education needs in Nigerian Bottling Company Ltd. The finding also concurred with the study of Okechukwu and Onyia (2022) who found out that safety planning and training programs had a positive impact on the output and service quality of food and beverage manufacturing.

**Summary of Findings**

Based on the discussion and presentation of this study, the findings of the study are summarized as thus,

- i. There is high extent to which use of personal protective equipment prevent accident in workplace in bottling company in Enugu and the use of personal protective equipment has significant effect in prevention of workplace accident in bottling company in Enugu.
- ii. There is high extent to which safety orientation and training reduce the rate of workplace accident in bottling company in Enugu and safety orientation and training significantly reduce the rate of workplace accident in bottling company in Enugu

**Conclusion**

The study concluded that industrial safety practices have significant effect of employees’ performance in bottling company in Enugu. This shows that there is adequate level of safety practices is present in bottling company Enugu due to the high level of awareness on safety hazards and risks among the workers and the effectiveness of implementing control measures. Workers are trained on workplace safety hazards management, while policies on occupational safety hazards and risk are implemented and enforced. Administrative control measures are used to reduce hazards and workers make adequate use of personal protective equipment.

### Recommendation

Based on the findings of this study, the following recommendations were made:

- i. Employers must ensure to have regular health education programmes for workers. This will enable them protect themselves at work.
- ii. Health and safety devices should be put in place by employers. Workers should also be trained on how to handle such items for their maximum health and safety at work.
- iii. To prevent workplace injuries and thus promote productivity, management should provide regular education and training on occupational health and safety concerns.

### Contribution to Knowledge

The study found out that industrial safety practice has a positive significant effect employees' performance in bottling company in Enugu. The evidence from the effect of the use of personal protective equipment on accident prevention, safety orientation and training on reduction of workplace accident and hazards control and rate of absenteeism.

### References

- Asikhia, M. O., & Emenike, G. C. (2015). Occupational health and safety in the oil and gas industry in Benin City. *JORIND*, 11(2), 61-72.
- Bowra, A., Sharif, B., Saeed, A., & Niazi, M. (2012). Impact of human resource practices on employee perceived performance in banking sector of Pakistan. *African Journal of Business*, 8(3), 1-25.
- Brothers, L. (1989). A Biological Perspective on empathy. *American Journal of Psychiatry*, 146, 10-19.
- Caliskan, N. E. (2010). The impact of strategic human resource management on organizational performance. *Journal of Science*, 8(1), 12-18.
- Damasio, A. (1999). *The feeling of what happens: Body and emotion in the making of consciousness*. New York: Harcourt Brace.
- Fanning, F. E. (2003). *Basic Safety Administration: A Handbook for the New Safety Specialist*. Chicago: American Society of Safety Engineers.
- Federal Republic of Nigeria. (1987). *Nigerian Factories Act*.
- Goleman, D. (2001). An EI-Based Theory of Performance. In C. Cherniss & D. Goleman (Eds.), *The Emotionally Intelligent Workplace*. San Francisco: Jossey-Bass.
- Janalta, I. (2021). Occupational Health and Safety. Retrieved from <https://www.workplacetesting.com/definition/522/occupational-health-and-safety-workplace-setting>
- Kabiru, F. C., Theuri, M., & Misiko, A. (2018). The influence of planning on the organizational performance of agricultural state-owned corporations in Kenya. *International Academic Journal of Human Resource and Business Administration*, 3(1), 68-80.
- Kharroub, A. O., & Mansour, M. M. (2019). The impact of strategic planning in Palestinian municipalities on the quality of service provided to its citizens. *Journal of Strategic Planning and Management*, 12(5), 69-85.
- Lenneman, J., Schwartz, S., Guiuseffi, D. L., & Wang, C. (2011). Productivity and health: an application of three perspectives to measuring productivity. *J. Occup Environ Med.*, 53(55), 61.
- Loppke, R., Taitel, M., Haufler, V., Parry, T., Kessler, R., & Jimett, K. (2009). Health and Productivity as a business strategy: a multi-employer study. *Journal of Occupational Environment Med.*, 51, 411-428.
- Lodewijk, N. (2017). What is employee performance? Retrieved from <https://www.effectory.com/knowledge/what-is-employee-performance/>
- Martic, K. (2020). The importance of workplace safety and how to keep employees safe. Retrieved from <https://blog.smarp.com/workplace-safety-importance-best-practices>
- National Institute for Occupational Safety and Health. Steps to a Healthier US Workforce Initiative; History of the Work-life initiative. Retrieved from [www.ede.gov/niosh/worklife/steps/default.html](http://www.ede.gov/niosh/worklife/steps/default.html) (Accessed October 15, 2010).
- Nworuh, G. E. (2004). *Basic Research Methodology for Researchers, Trainees and Trainers in Management Sciences* (2nd ed.). Owerri: Ambix Printers Nigeria.
- Ogbo, A. L. (2009). Occupational Safety and Management Adherence for Sustainable development in Nigeria. *Journal of Nigerian Institute of Management*, 44, 14-19.
- O'Neill, E. (2020). The importance of training employees for your business. Retrieved from <https://www.learnupon.com/blog/importance-of-training-employees/>
- Pamela, A. H., Ronald, R., Loappk, C. M., Baase, W. N., Burton, N. P., Hartenbaum, H. T., Warner, R. K., McLellan, K. L., Mueller, M. A., Roberts, C. M., Yerborough, D. L. K., & Paul, W. L. (2011). Workplace Health Protection

- and Promotion: A New Pathway for a Healthier and Safer Workforce. *American College of Occupational and Environmental Medicine*, 53(6).
- Professional Health and Safety Consultants. (2009). Demonstrating an Effective Health and Safety Management System (online). Available: <http://www.healthandsafety.co.uk/corporatemanslauggtersystemofworkoctober2009.html> (Accessed January 6, 2010).
- Rainn. (2021). Safety planning. Retrieved from <https://www.rainn.org/articles/safety-planning> (Accessed on April 6, 2021).
- Rebecca, G. (2013). Environmental Sustainability: Definition and Application. Retrieved from <https://study.com/academy/lesson/environmental-sustainability-definition-and-application.html>
- Saifalislam, K. M., Osman, A., & AlQudah, M. K. (2014). Human resource management practices: Influence of recruitment and selection, and training and development on the organizational performance of the Jordanian Public University. *Journal of Business and Management*, 16(5), 43-46.
- Sikra, S. (2019). Future challenges facing safety and health in the workplace. Retrieved from <https://gocontractor.com/blog/challenges-facing-workplace-health-and-safety/>
- Smriti, C. (2021). Training: meaning, definition and types of training. Retrieved from <https://www.yourarticlelibrary.com/human-resource-development/training-meaning-definition-and-types-of-training/32374>
- St. Louis, M. O. (1994). *Transformational Leadership for the Healing Ministry: Competencies for the Future*. Catholic Health Association.
- Suleiman, Y., Amin, S. I., Ilyas, M., Ruth, A. O., & Rasheed, J. A. (2018). Impact of employee training on organizational profitability: Implication for business and educational managers. *Amity Journal of Training and Development*, 3(2), 1-16.
- Sundberg, J. (2018). How to create a workplace safety plan. Retrieved from <https://advurgent.com/how-to-create-a-workplace-safety-plan/> (Accessed on April 6, 2021).
- Takala, J. (2002). Introductory Report: Decent Work-Safe Work. Paper presented at the 16th World Congress of Safety and Health, Vienna, May 27.
- The Guardian* (2015). *Nigerian Bottling Company 2015 Management Trainee Programme*. Lagos, 13374(32), 11.
- Udeze, J. O. (2000). *Human Resources Management in Nigeria*. Enugu: Joebest Books.
- Ugorji, E. J. (2014). Effect of industrial safety management on employee performance of the Nigerian manufacturing sector of Enugu State, Nigeria. *A Master Degree Dissertation*. University of Nigeria, Nsukka, Virtual Library.
- United States of America. (1970). *Occupational Safety and Health Act (OSHA)*.
- US Department of Health and Human Services/Health Resources and Services Administration. (2009). *Women's Health USA, 2009*. Rockville, Maryland: US Department of Health and Human Services.
- Uvieghara, E. E. (2001). *Labour Law in Nigeria*. Lagos: Malthouse Press Limited.
- Wabara, A. N., Sampson, J. C., & Okwudili, B. E. (2017). Effects of manpower development on organizational efficiency: A study of Enugu Electricity Distribution Company (EEDC) in Abia State, Nigeria (2014-2016).
- WHO. (2007). Raising Awareness of Stress at Work in Developing Countries. *Protecting Workers' Health Series No. 6*. WHO Press: Geneva, Switzerland.