

**WORK SAFE AND PRODUCTIVITY IN ORGANIZATIONS A STUDY OF
UNITED CEMENT COMPANY**

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ABSTRACT

This study is designed and geared towards examining work safety as it concerns the health of man and his environment, how man's action and inactions has determined his safety, it's implications in United Cement Company, also to investigate the extent to which it's application could affect the employees efficiency and productivity on the organizational productive out put. In the population of 74 No of respondents was statistically defined and copies of the questionnaire were distributed and returned regression analysis was considered most appropriate for this study. At 0.5 or 5% level of significance we found out that, there is a positive relationship between work safety management and organizational productivity. The paper recommends amongst others that employees should give maximum co-operation to the management by abiding by the set work safety policies and norms in pursuit of individual and organizational goals.

Key words; safety, employees, management, productivity, and efficiency

Introduction

Management is the tactical application of social and technical knowledge in planning, organizing, staffing, leading, and controlling organizational resources to attain organization's goals effectively and efficiently (Madu, 2006). By simply definition management "is the act of getting things done through people" (Koontzet, 1978).

This shows that management process does take place in vacuum, but has to operate with certain factors (Human and materials factors). Material factors alone cannot achieve the organization's productivity unless utilized by human component. Human factors arc also responsible for effective and efficient running of the operations in organizations.

In course of the operation the human factor which is the organization most important asset (Hackett, 1979) arc exposed to industrial accidents and hazards. Dating back in the 1900's when manufacturers in America developed a fashion that substituted power and machinery for labour and manufactured product with interchangeable arts for ease in mass production, but they were extraordinarily risky by modern standard because machines and power encouraged factory managers to strive for an ever-increasing output, the }' showed little interest in improving safely.

So workers responded to these in a number of ways: some left jobs that they felt were too dangerous and unsafe, which led management to getting involved in safety of it's work place, facilities and employees through a process called "work safety management" (Nelson and associate, 2008).

Work safety management (WSM) is a process of organized effort and procedures for identifying workplace hazards and reducing accidents and exposures to harmful situations and substances. It also includes the training of personnel in accident prevention, accident responses, emergency preparedness and use of productive clothing and equipments.

Until the 1970's the typical concern about health and safety was to compensate the victims of job related accidents with workers compensation and similar insurance schemes. During the 1980's the emphasis was shifted to strategies that emphasized prevention (Abba, 2004).

Statement of Problems

The management of an organization in its operations encountered a lot of problems that has a direct effect on its employers facilities and its reputation as a result of its neglect in creating and managing a safety and healthy workplace for their employees. In the course of this study, these are the problems the researcher intends working on.

1. Poorly designed facilities and machines
2. Low standard of workers training
3. Absence of safety work environment
4. The use of personal protective equipments.

Work Accident

The negligence of safety habits in our daily activities always result to accidents in our environment as accidents are always unplanned and they occur anywhere, anytime. Work accident therefore means an undersigned contingency that happens by chance, something out of unusual cause of things, unusually, unanticipated, may be not naturally to be expected, including repeated or continuous exposure to substantially the same general harmful condition. An unanticipated event commonly leading to injuries, in traffic, the workplace, domestic or recreational setting. A loss that occurs at a specific time, and place (Obah, 2008).

An accident is an unplanned and unwanted event which leads to injuries or damage to proper (Johnson, 2008).

Literally, a befalling, an event that takes place without one's foresight or expectation, sudden and under designed event. Accident can also be described as an event or repeated exposure to conditions that unexpectedly causes injuries during the policy period.

Examples:

- Exposures to harmful substances or radiations
- Struck by falling object
- Fall of persons from height or into depth
- Exposure to or contact by inhalation, ingestion

Causes and Consequences of Work Accident

There are just as many causes of work accident as they are types of accidents. Most of these accidents are caused by human failures or errors, technical faults/failures or the job itself, the working conditions and the employees so example of what causes work accident are: the design or inadequately repaired machines, presence of dangerous chemicals or gasses and lack of protective equipments. Others include; overtime leading to employee failure, noise, lack of proper lighting, boredom and fighting at work (Abba et al. 2004).

The causes of work accident can be categorized under to major headings: Unsafe act and unsafe conditions (Obah, 2008).

1) Unsafe Conditions

This is working in an environment that is not conducive, that possess a hazard or is accident prone according to him, an unsafe condition could be hazard prone the unsafe condition includes:

- Unsafe work place
- Poor illumination and ventilation
- Poor entrance and exit space
- Excessive noise level
- Poor sitting position
- Unsafe clothing
- Hazardous procedures and arrangement
- Defective tools or equipment
- Lack of fitting
- Unsafe guarding.

Unsafe Act

This involves unsafe doing things that are not supposed to be done or failing to do necessary things that should have been done in the course of carrying out our daily duties or activities.

One American assurance assessor H.W. Heinirch as put forward the theory that accident and the consequence of the factor are found in the introduction. The fault that we develop results from our weakness of character and it is because of this that we commit unsafe acts and allow ourselves to be exposed to dangers (Penny, 1996). These are the acts that are usually contrary to rules and regulations or accepted standard, these are sometime called illegal actions such action include:

- Not wearing your personal protective equipments (PPE) i.e Helmet, safety shoes. Hand gloves e.t.c
- Failure to worn against danger
- Working on plants or equipments in operation without dueclearance or permission.
- Wearing unsafe clothing
- Horse play i.e. teasing, abusing or distracting other workers duringwork.
- Improper handling of equipment's
- Taking short cuts and by-passing safety terms
- Improper use of equipments
- Improper use of parts of the body
- Improper planning
- Unsafe speed or capacity.

During error i.e. driving machines without due regards to safety procures could lead to accident.

Consequences of Accident

While performing an activity in a workplace and the safety precautions are not followed, this leads to accidents (Obah, 2008). These consequences have a far reaching effect according to various researchers and all of them are detrimental. The effect could have immediate and long term consequences on:

- i. The workers and people living in the vicinity
- ii. The company
- iii. The environment which includes the economy and the nation.

Consequences on the Workers

- i. *Physical Injuries:* Loss of arms, feet or an> part of the body that could lead to physical pain, psychological or mental agony to the victim (Penny, 1996).
- ii. *Disabilities:* This can be in form of physical or mental. Which includes loss of sight, hearing ability, inability to work, or inability to speak.
- iii. *Death:* Some serious accidents could possibly lead to outright loss e.g. Ikorodu factory disaster where many workers loss their lives as a result of fire outbreak.
- iv. Loss of earning power by the victims
- v. *Physical Burden:* Depending on people to do things they can no long do.
- vi. *Economic Dependency:* Depending on others financially
- vii. Effects loss on the victims families.

Consequences on the Company

- 1) **Poor Reputation:** A company with high record or serious accidents will have it's reputation at stake as it will create bad image for the company.
- 2) **Financial and Economic Loss to the Company:** Through intensive or outright replacement of equipment, indemnification to victim, payment of hospital bills, court expenses in persecuting court cases e.t.c. (Okonkwo, 2009).
- 3) **Time Loss:** The consequence of accident to a company could be in terms of time loss which \\hen measured monetarily could be yen high as the time which could have been put into productive use are wasted in various forms as resave operations, burials e.t.c.

Consequences on the Economy

1. Reduction in tax collected as revenue when the company is forced to close down by huge financial burden (Anthonia, 2008).
2. Loss or reduction on the side of investors
3. Hazardous substances released may be detrimental to the environment. Vegetable depletion water pollution (Obah, 2008)

Accident Prevention

We have identified two major causes of accident, this will lead us to looking at two accident prevention method.

According to (Penny, 1996) the real key to accident prevention therefore lies in creating an integration of opinion from top to bottom of the organization, where safe ways of doing things is right indeed. This can be done through factor investigated, photographs of workers fully attained in the safety year, are shown to both the management and the employee. The general tenor of comments made by both was that the workers depicted in the photograph were slightly sissy and met the kind men that their management or employee hold in high esteem.

So, according to Penny (1996) our first task is to change this sort of attitude:

- a. **Creating Safety Consciousness/Awareness:** There are a number of techniques that can be used to try to persuade all level including management that concern for safety makes sense. Through
 - i) Posters
 - ii) Films or Videos
 - iii) Discipline
 - iv) Discussion
 - v) Role planning techniques
 - vi) Coaching.
- b. **Making People Safe:** Over and above position desire to be safe individual workers must know how to operate safety individuals like;
 - i) New concerns
 - iii Experienced workers
 - iii) Supervisors
 - iv) All employees.
- c. *Making job safe*
- d. *Making the environment safe*

What Makes a System Successful?

A system according to Cugeh (1978) is an assembly or set of related elements. So a successful, system will be part of a management overall business operation, as important as the other thing the management does to succeed in business. So a safety and healthy system have the following in place (Okonokwo, 2009).

- * Management committed to making the programme
- * Employee involved in the program
- * A system to identify and control hazards
- * Compliance with OSHA regulation
- * Compliance with factories act 1990 regulation
- * Mutual respect, caring and open communication in a climate conducive to safety
- * Training on safe work practice
- * Continues improvement

A Safety System for an Organization

Organizations as employers have the responsibility to maintain safety and healthy workplace. A safety management system or safety programmes can help the organization to focus on its effort to improving its work environment and reducing the occurrence of stress. Bencch et al (1998) confirms that stress takes its toll on the human body. So an effective work safety system could make the workers comfortable (Okonkwo, 2009).

It is plans describes what the people in the organization do to prevent injuries and illness at workplace. The organization could have it's own unique system relating it's way of doing business, the hazard of work and now it manages the safety and health of the employee (Nelson and Associates, 2008).

As the organization runs as a business in a low risk industry, it's system may simply be involved in loosening to it's employee's concern and responding to them especially in training to boost the employees morale to work toward achieving organizational productivity.

It is important to keep up on changes in government workplace that includes new hazards and safety risks. The organization policy must keep up with the changing regulation (Trishe, 1993).

Safety Policy

A safety policy is a statement specifically written by a firm, setting out their general policy for protecting the health and ensuring safety of their employee at work and in the organization as a whole and arrangement for putting that policy into practice (Bobadoye, 2008).

Management attitude toward the safety of its employees must be demonstrated in the form of a written policy statement and made known to all level of management and employees alike. This policy should outline the institutions aims and objectives for its safety programmes and should designate the authority and responsibilities for achieving them (Anthonia, 2008). This statement is important because it is their basic action plan on health and safety, which all their employee should read understand and follow.

Developing a Work Safety Plan

A work safety plan is a simple written document, which outlines how organization intends to manage safety in the work place (Anthonia, 2008). It is a living document which must be available to all persons involved. Safety planning is a mental process of setting objectives to ensure the protection and the safety of employees in an organization and determining the means of achieving the objectives. These objectives can be achieved by setting a standard in a company or organization (Bobadoye, 2008). As a dynamic document, it must continually be updated and when new information is discovered.

Issues to be covered:

- a) Electrical safety - All electrical equipment to be used in the workplace should be properly and regularly maintained and should be appropriate for its intended use.
- b) Use of equipment
- c) Manual handling
- d) Control of substances hazardous to health (COSHH)
- e) Fire precautions
- f) Protective clothing
- g) Structural safety
- h) First aid
- i) Ergonomics
- j) Stress.

Of course, there are other considerations in the general working environment. Attention should be paid to tempo-ration, ventilation and noise level, lighting should be adequate for the job being done. Dust and fumes should be kept under control and there must be hygienic sanitary, washing and rest facilities.

Employer's Safety Responsibilities

The internal responsibility system requires everyone from the chief executive officer down to the net hires to make good occupational health and safety practices part of everything they do at work. Because the employers have the greatest degree of control over the workplace, they have the most responsibility for providing a healthy and safe workplace (Anthonia, 2008).

The success of workplace safety programming, mostly essentially depends on top managements knowledge about workplace safety, their demonstrated personnel involvement and positive attitude towards workplace safety, what experts from others regarding day to day conducting of safely activity and low time, money and staff resources they would invest in it (Okonkwo, 2009).

Management and technical personnel (owners engineers, designees, corporate executives, supervisors, managers e.t.c.) have as one of their primary objectives; production, they are ultimately responsible for the planning and controlling of the "asserts of production". Assert of production includes (facilities, equipments production, materials and labour workers).

A universal business management responsibility is to protect and secure such asserts for future use (Nelson and Associates, 2008).

This means making sure that workers and others are protected from anything that may cause harm, effectively controlling any risk to injury or health hazard that could arise in the work place i.e reducing (e) them to Alarp (as low as reasonably practicable) (Johnson. 2008),

Business mangers (employers) typically state that their employees and other workers who assist in conducting their business are "their greatest asserts".

Rensis (1967) for this and other reasons associated with the exercise of ordinary care for safety of others, the protection of the health and safety of workers and others who ma\ be exposed to workplace hazards is the primary function and responsibility of management.

A weak workplace safety could lead to emotional exhaustion, which according to Hshforth (1993) been characterized by a lack of energy and a feeling that one's emotional resources is depleted. So management should know the basics of accident prevention and then monitor safety activities to know when these activities are going well of falling short.

Their interest in accident prevention must be sincere for a leader must be everything that be desires his subordinate to become "people think the way their leaders think. They should budget for training of their employees, procession of provision of equipment and safety supplies and conduct required workplace related safety activity according to (Nelson and Associate, 2008),

To achieve success in workplace safety, all levels of management must be convinced that accident of prevention is of paramount importance in affecting the workers productivity and attaining organizational goals. Mosby Dental Dictionary (2008) studies that guidelines includes storage and disposal of lexically chemicals and hazardous materials and the safety and proper use of clinical and official equipments.

Employers have duties under health and safety laws to assess risk in the workplace. Risk that might cause harm in workplace (Johnson, 2008).

The employer's safety responsibilities to his or her employees according to Anthonia (2008) can be summed up as follows:

- a) Providing a safe workplace
- b) Making a policy statement regarding accidents prevention
- c) Maintaining an ongoing safety programme
- d) Providing medical and first aid treatment system
- e) Providing adequate budgets for all safety related objective
- f) Complying with the occupation safety and health act
- g) Complying with the factory act of 1990.

Other responsibility of the employer according to the HSE British government regulator of healthy safety includes: employers must consult with workers or safety representative on matters relating to health and safety and also employers should send their employees to Nigeria Institute of Safety Professionals (NISP) for training.

Employee's Safety Responsibilities

Workers must take reasonable precautions to protect their own health and safety, as well as the health and safety of others. They are responsible for their own action or inactions. Workers must co-operate in the identification and control of workplace hazards (Anthonia, 2008). Workers must have legal duties which includes:

- 1) Taking reasonable care for your health and safety and that of others.
- 2) Co-operating with your employers on safety.
- 3) Not interfering with anything provided for your health, and safety and welfare (Johnson, 2008).
- 4) Use safeguards, safety appliances, and personal protective equipment as required by the employer.
- 5) Know and follow company health and safety policies practices and procedures
- 6) Report accidents, occupational illness and near misses
- 7) Report health and safety hazards and concern
- 8) Can personally undergo training.

Risk Assessment

According to Johnson (2008) is a careful examination of what could cause harm to people in the workplace. This is one of the core responsibilities of the employer in maintaining health and safety at workplace. A good risk assessment will help avoid accidents and ill health, which can only ruin lives, but can also increase cost to business through lost output compensation claims and higher insurance premium (Johnson, 2008).

According to Johnson (2008) risk assessment is a true stage process and involves:

- a) Looking for the hazards
- b) Deciding who might be harmful and how
- c) Evaluating risk and deciding whether the existing precautions are sufficient or weather more should be done.
- d) Recording your findings and telling employees about them
- e) Reviewing your assessment and revising if necessary.

First Aids and Personal Protective Equipment (PPE)

First Aid

According to Abayomi (2008) first aid is the skilled application of accepted principle of treatment or the occurrence of any injury or sudden illness using facilities or materials available at that time. The use of first aid is very important because population are growing throughout the world and the use of mechanical and electrical appliances and chemicals at workplaces increase the risk of injury. Content includes sufficient quality of bandages serials slings in packets, safety pins, scissors, strip plaster for fixing bandages and dressing cotton wool, ointment, simple medicine etc.

Personal Protective Equipment (PPE)

According to Johnson (2008) personal protective equipment refers to all safety equipment that is worn by a worker for the protection of his body and body part from hazards. As the last resort, personal protective equipment (P.P.E) which are personal wears against known hazards that cannot be dominated or otherwise controlled. Every necessary PPE for any given job must be made available and used for the job.

Types of Personal Protective Equipments

- i. Helmet: Protects head
- ii. Eye goggles; Protects the eyes
- iii. Foot protection
- iv. Face shield
- v. Hand gloves
- vi. Ear protection, ear muffs/plugs
- vii. Respiratory equipment: Noise mask
- viii. Betts and harnesses
- ix. Aprons/overalls
- x. Fire suit
- xi. Shin guard
- xii. Cutlass health
- xiii. Lean stick
- xiv. Protective cream
- xv. Life jackets (Johnson, 2008).

The formular for percentage is given as:

$$\frac{\text{Number of respondent in factor concerned}}{\text{Total number of respondents in all factors}} \times 100$$

$$\frac{n\sum xy - \sum x \sum y}{n(\sum x^2) - (\sum x)^2}$$

$$n(\sum x^2) - (\sum x)^2$$

$$x = \text{represents code}$$

$$y = \text{represents responds from the respondent}$$

Decision Rule: We must reject the null hypothesis of independence at $z = 0.05$, if the exceeds the critical

(tabulated) value at $(n - 2)$ degree of freedom.

Questionnaire Distribution

During the research investigation a total number of 91 questionnaires were distributed by the researcher across departments and 74 were completely filled and returned.

Table .1

Details	Response	Percentage %
Returned	74	81.32
Not returned	17	18.68
Total	91	100%

Source: Field Survey, (2012).

The table shows all questionnaires were distributed to the management and staff of United Cement Company Calabar, then out of which 74 copies were returned which represent 81.32%, while 17 copies were not returned which represents as 18.68%.

Background Information of the Respondents

Table .2: Distribution of sex

Sex	Frequency	Percentage %
Male	48	64.9
Female	26	35.1
Total	74	100%

Source: Field Survey, (2012).

Table .3: Marital Status

Marital Status	Frequency	Percentage %
Married	21	28.4
Single	52	70.3
Divorced	1	1.3
Widow	-	-
Total	74	100%

Source: Field Survey, (2012).

Table .4: Qualifications

Qualifications	Frequency	Percentage %
School Certificate	7	9.5
OND/NCE	4	5.4
B.Sc/BA/HND	51	68.9
MBA and above	21	16.2
Total	74	100%

Source: Field Survey, (2012).

Table .5: Work Experience

Work Experience	Frequency	Percentage %
Work below 5 years	11	14.9

5-10 years	23	31.1
11-15 years	32	43.2
16 and above years	8	10.8
Total	74	100%

Source: Field Survey, (2012).

Table .6: Job Description

Job Description	Frequency	Percentage %
Top manager	3	4.1
Middle manager	11	14.9
Junior staff	60	81
Total	74	100%

Source: Field Survey, (2012).

From the above table 2 to 6, we observed that out of 74 questionnaires retrieved, 64.9% are males and 35.1% are female while 28.4% are married, 70.3 percent are still single, 1.3% are divorced in which 9.5% have school certificate, followed by 5.4% that have OND/NCE, 68.9% have Bachelor degree/HND while those with qualifications with MBA and above are 16.2%.

The table further reveals that 14.9% have been with the organization for less than 5 years, 31.1% for 6-30 years, 43.2% for 11 - 15 years while 10.8% for 16 years and above.

On the issues that concerns job position we noticed that from the table 4.1% of the respondents are on top management, 14.9% are in middle management, while 81% are juniors.

Analysis of Questions

Table 7

Question 1: Does safety workplace affect workers productivity?

Options	No of Respondent	Percentage %
Strong Agree	70	94.6
Agree	4	5.4
Undecided	-	-
Disagree	-	-
Strongly Disagree	-	-
Total	74	100%

Source: Field Survey, (2012).

Table 7 shows that 74.6% strongly agrees that safety workplace affects workers productivity, while 5.4% agrees that safety workplace affects workers productivity.

Table 8

Question 2: Do poorly designed machines and facilities affect organizational operation?

Options	No of Respondent	Percentage %
Strong Agree	35	47.3
Agree	21	28.4
Undecided	3	4
Disagree	10	13.5
Strongly Disagree	5	6.8
Total	74	100%

Source: Field Survey, (2012).

Table 8 shows that 47.3% strongly agrees that a poorly designed facilities and machines affect the operation of the organization, 28.4% agrees 4% undecided, 13.5% disagree then 6.8% strongly disagree.

Table 9

Question 3: Does absence of a safety work environment affect workers performance?

Options	No of Respondents	Percentage %
Strong Agree	52	70.3
Agree	6	8.1
Undecided	10	13.5
Disagree	4	5.4
Strongly Disagree	2	2.7
Total	74	100%

Source: Field Survey, (2012).

Table 9 shows that 70.3% strongly agree that absence of a safety work environment effect workers performance, 8.1% agree, 13.5% undecided, 5.4% disagree, 2.7% strongly disagree.

Table 10

Question 4: Does training of staff affect the moral of workers?

Options	No of Respondent	Percentage %
Strong Agree	21	28.4

Agree	24	32.4
Undecided	11	14.9
Disagree	17	23
Strongly Disagree	1	1.3
Total	74	100%

Source: Field Survey, (2012).

Table 10 shows that 28.4% strongly agree that training of staff affects the morale of workers. 32.4% agrees while 14.9%, undecided, 23% disagree and 1.3% strongly disagrees.

Table 11

Question 5: Can proper training of workers reduce the occurrence of accident?

Options	No of Respondent	Percentage %
Strong Agree	7	9.4
Agree	39	52.7
Undecided	15	20.3
Disagree	5	6.8
Strongly Disagree	18	10.8
Total	74	100%

Source: Field Survey, (2012).

Table 11 shows that 9.4% strongly agree, 52.7% agree 20.3%, 6.8% disagree, 10.8% strongly disagree that proper training of workers reduces work accident occurrence.

Table 12

Question 6: Does poorly managed work safety affects the attainment of organizational goal?

Options	No of Respondent	Percentage %
Strong Agree	42	56.8
Agree	10	13.5
Undecided	7	9.5
Disagree	13	17.5
Strongly Disagree	2	2.7

Total	74	100%
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Source: Field Survey, (2012).

Table 12 shows that 56.8% strongly agree that poorly managed work safety affects the attainment of organizational goal.

Table 13

Question 7: Can provision of personal protective equipment reduce accidents and injuries?

Options	No of Respondent	Percentage %
Strong Agree	11	14.9
Agree	35	47.3
Undecided	21	28.4
Disagree	4	5.4
Strongly Disagree	i	4
Total	74	100%

Source: Field Survey, (2012).

Table 13 shows 14.9% strongly agreed that provision of personal protective equipment reduces accident and injuries, then 47.3% agrees, 28.4% undecided, 5.4% strongly disagrees.

Table 14

Question 8: Does an effective safety management like other factors contribute immensely to the achievement of organizational productivity?

Options	No of Respondent	Percentage %
Strong Agree	39	52.7
Agree	24	32.4
Undecided	11	14.9
Disagree	-	-
Strongly Disagree	-	-
Total	74	100%

Source: Field Survey, (2012).

Table 14 shows that 52.7% strongly agrees that effective safety management like other factor contributes immensely to the attainment of organizational productivity. 32.4% agrees and 14.9% undecided.

Test of Hypotheses

When the researcher collects data for the research study, the essence is to examine the relationship that exist between the data collected and the hypothesis that are set for the research work.

H₀1: Poorly design facilities and machines does not affect the operation of organization.

Using table 13 to test the hypothesis

Options	No of Respondents	Percentage %
Strongly Agree	35	47.5
Agree	21	28.4
Undecided	3	4
Disagreed	10	13.5
Strongly Disagree	5	6.8
Total	74	100%

Source: Field Survey, (2012).

Decision Rule: If the calculated value exceeds the critical value, reject the null hypothesis then accept the alternative hypothesis,

Hypothesis

N	X	Y	XY	X ²	Y ²
1	5	35	175	25	1225
2	4	21	84	16	441
3	3	3	9	9	9
4	2	10	20	20	100
5	1	5	5	5	25
Σ	15	74	293	55	1800

$$\text{Formular of simple regression} = \frac{n\sum xy - \sum x \sum y}{n(\sum x^2) - (\sum x)^2}$$

x = represents code

y = represents response from the respondent

$$\frac{5(293) - (15)(74)}{5(55) - (15)^2}$$

$$= \frac{1465 - 1110}{275 - 225}$$

$$= \frac{355}{50} = 7.1$$

$$= 7.1$$

$$= 7.1$$

$$= 7.1$$

To test the hypothesis

Determine the degree of freedom i.e. n - 2

$$5 - 2 = 3$$

Level of significance = 0.5

Critical value = 3.182

Decision

Since the critical value (3.182) is less than the calculated value (7.1), the alternative hypothesis is accepted. We therefore conclude that poorly designed facilities and machines affect the operations of the organization.

H₀2: Proper training of workers cannot reduce the occurrence of accident.

Using table 11 to test the hypothesis

Options	No of Respondents	Percentage %
Strongly Agree	7	9.4
Agree	39	52.7
Undecided	15	20.3
Disagreed	5	6.8
Strongly Disagree	8	10.8
Total	74	100%

Source: Field Survey, (2012).

Hypothesis II

N	X	Y	XY	X ²	Y ²
1	5	7	35	25	49
2	4	39	156	16	1521
3	3	15	45	9	225
4	2	5	10	4	25
5	1	8	8	1	64
2	15	74	254	55	1884

Formular of simple regression = $\frac{n\sum xy - \sum x \sum y}{n(\sum x^2) - (\sum x)^2}$

$$n(\sum x^2) - (\sum x)^2$$

x = represents code

y = represents response from the respondent

$$\frac{5(254) - (15)(74)}{5(55) - (15)^2}$$

$$= \frac{1270 - 1110}{275 - 225}$$

$$= \frac{260}{50}$$

$$= \frac{160}{50} = 3.2$$

In testing the hypothesis

Degree of freedom $5-2 = 3$
 Level of significance $5\% = 0.05$
 Critical value = 3.182

Decision Rule: We reject the null hypothesis and do not reject the alternative hypothesis if the calculated value exceeds the critical value.

Decision: Since the calculated value (3. 2) exceeds the critical value (3.182), we reject the null hypothesis and do not reject alternative hypothesis.

We conclude that proper training of workers can reduce occurrence of accidents.

H₀3: Absence of a safety work environment does not affect organizational productivity.

Using table 9 to test the hypothesis

Options	No of Respondents	Percentage %
Strongly Agree	52	70.3
Agree	6	8.1
Undecided	10	13.6
Disagreed	4	5.4
Strongly Disagree	2	2.7
Total	74	100%

Source: Field Survey, (2012).

Hypothesis II

N	X	Y	XY	X ²	Y ²
1	5	52	260	25	2704
2	4	6	24	16	36
3	3	10	30	9	100
4	2	4	8	4	16
5	1	2	2	1	4
∑	15	74	324	55	2860

Formular of simple regression = $\frac{n\sum xy - \sum x \sum y}{n(\sum x^2) - (\sum x)^2}$

x = represents code

y = represents response from the respondent

$\frac{5(324) - (15 \times 74)}{5(55) - (15)^2}$

= $\frac{1620 - 1110}{1620 - 1110}$

$$\begin{aligned}
 & 275 - 225 \\
 = & \frac{510}{50} \\
 = & 10.2
 \end{aligned}$$

In testing the hypothesis

Degree of freedom $5 - 2 = 3$

Level of significance $5\% = 0.05$

Critical value = 3.182

Decision Rule: We reject the null hypothesis if calculated value is greater than the table value otherwise do not reject.

Decision: Since the calculated value (10.2) exceeds the critical value (3.182), we reject the null hypothesis. We conclude that absence of safety work environment affect organizational productivity.

H₀₄: Using of personal protective equipments does not affect the safety management of the organization.

Options	No of Respondents	Percentage %
Strongly Agree	7	9.4
Agree	39	52.7
Undecided	15	20.3
Disagreed	5	6.8
Strongly Disagree	8	10.8
Total	74	100%

Source: Field Survey, (2012)

Hypothesis II

N	X	Y	XY	X ²	Y ²
1	5	7	35	25	49
2	4	39	156	16	1521
3	3	15	45	9	225
4	2	5	10	4	25
5	1	8	8	1	64
Σ	15	74	254	55	1884

Formular of simple regression = $\frac{n\sum xy - \sum x \sum y}{n(\sum x^2) - (\sum x)^2}$

$$n(\sum x^2) - (\sum x)^2$$

x = represents code

y = represents response from the respondent

$$\frac{5(254) - (15 \times 74)}{5(55) - (15)^2}$$

$$\begin{aligned} & 5(55) - (15)^2 \\ &= \frac{1270 - 1110}{275 - 225} \\ &= \frac{2700}{50} \\ &= 160 \end{aligned}$$

$$50 = 3.2$$

In testing the hypothesis

Degree of freedom $5-2 = 3$

Level of significance $5\% = 0.05$

Critical value = 3.182

Decision Rule: Reject H_0 if the calculated value $<$. The critical value otherwise do not reject.

Decision: Since $3.2 < 3.182$, we reject the null hypothesis and do not reject the alternative hypothesis.

We therefore conclude that use of personal protective equipment affects the safety of the organization.

Conclusion

With reference to United Cement Company Calabar, the researcher concludes after making a good research work, that if there is safety management in an organization, there will be increase in the morale and productivity of the workers, occurrence of work accident and injuries will be tackled and reduced in organizations. Even organization in Nigeria should therefore make effort in embracing the concept in this topic work safety management to organizational productivity.

Recommendations

As could be understood from the proceeding capture in an organization, a good healthy and safety work environment could boost workers productivity.

It is recommended that management should concern themselves among other things, with improving their organizational work environment to prevent the occurrence of industrial and work accidents that could to incapacitation and injuries to the employees.

In the same vein lead, it is recommended that employees should give maximum co-operation to the management by abiding by the set work safety policies and norms in pursuit of individual and organizational goals.

An effective and proper training of worker by the management could boost the employee's morale and productivity in their daily function in the organization.

For a continuous operation of the organization without interruption from work accident occurrence, and inexperience, the man age-mate should be responsible in creating a well designed machine, train their employees in the best and most efficient methods. Also employees should inturn give regular feedback to management concerning the workplace environment.

REFERENCES

Abba, U. E, et al (2004). *Management and Organizational Behaviour, Theories and Application in Nigeria*. Onitsha: Abbot Books Ltd.

Abba, U. E. (2006). *Human Resource Safety in the Firm*. Onitsha: Abbot Book Ltd.

Anthonia, (2009). *Work Safety and Hazards*. Enugu: Javah Printing Press.

Anthonia, (2010). *Workplace Safety and Hazard*. Enugu: Javah Printing Press.

Armstrong, M. (2000). *A Handbook of Personnel Management Practice*. London: Kogan Page.

Bateman, (1999). *The Psychology of Employee Relation*: Bloomsbury Publishing Plc.

Ben, (2005). *Safety and Health in Achieving Productivity*. Lagos: Page Publishers.

- Bensch, et al (1998). *Safety System for an Organization*. New York: Biddle Ltd.
- Bodadoyo, (2008). *Developing a Work Safety Plan*. Lagos: Iferic Publishers Ltd.
- Brench, E, F. (1963). *The Principles and Practice of Management*. London: London Printing Press.
- Drucker, E. F. I. (1977). *People and Performance*. New York: Happer and Rows.
- Fritz, (1999). *Human Resource Management*: South-Western Publishing Company.
- Gigeh, M. (1978). *Organizational Management*. New York: John Wiley and Son Incorporated.
- Griffen, T. (1997). *Personnel Management*. Great Britain: The Chaeer Press Ltd.
- Hshforth, S. (1993). *Safety Management in Organization*. New York: Preleger Publisher, Inc.
- Hshforth, S. (1996). *Safety Management in Organization*. New York: Preleger Publisher, Inc.
- Johnson, O, S. (2006). *Employee Safety*. Beston: Havard Business School Press.
- Johnson, O. S. (2008). *Health and Safety in Construction*. Beston: Havard Business School Press.
- Johnson, O. S. (2010). *Health and Safety in Construction*. Beston: Havard Business School Press.
- Kerlinger, F. N. (1865). *Foundation of Behavioural Research*. New York: Reinhart and Winston.
- Kolawale, (2003). *Human Relation Movement*. Lagos: C.P.A. Books.
- Madu, I. L. (2006). *Basic Management Theory and Practice*. Enugu: Maurice Publication.
- Madu, I. L. (2008). *Introduction to Business*. Onitsha, Nigeria: Najutel Books.
- Margaret, A. E. (1990). *Business Administration (Secretarial)*. UK: McGraw Hill Book Company Ltd.
- Mosby, Dental Dictionary (2008).
- Muzky, (1986). *Management*. London: West View Press.
- Nelson and Associate (2008). *People and the Organization*. Chicago: Antherton Press.
- Obah, (2008). *Organizational Operation*. Ibadan: N. G. Spectrum Books.
- Obah, (2010). *Organizational Operations*. Ibadan: N. G. Spectrum Books.
- Okonkwo, B. C. (2009). *The Impact of Work Safety Management on Organization*. Anambra: Ukpör Press.
- Okonkwo, B. C. (2011). *The Impact of Work Safety Management on Organization*. Anambra: Ukpör Press.
- Penny, H. (1996). *Success in Managing People*. New York: Biddle Ltd.
- Penny, H. (2000). *Success in Management People*, New York: John Murray Publishers.
- Rensis, L. (1967). *The Human Organization*. London: Printing Press.
- Rensis, L. (1999). *The Human Organization*. London: Printing Press.

Steer, U. and Nowday, (1985). *Managing Effective Organization; An Introduction*: Beson Kent Publishing Company.

Ubeku, A. K. (1975). *Personnel Management in Nigeria*. Benin City: Ethiope Publishing Corporation.

Tayol, H. (1949). *Henesal an Industrial Management*. London: McGraw Hill Publishers.

Thomas, W. (1971). *Organizational Management*. London: London Press.