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WORKERS' KNOWLEDGE OF CAUSES OF WORKPLACE ACCIDENTS IN BAYELSA STATE

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ABSTRACT

The study investigated workers knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies in Sagbama, Bayelsa State, with a view of determining the level of knowledge of the workers in terms of the causes of workplace accidents in their companies, with regards to their educational qualification, gender, position (Rank) in the company, and length of service. Four research questions were addressed, data for the study were generated through responses to an adapted multiple choice questions of the Joint Industrial Board health and Safety and Royal society for public Health level 1 award in Health and Safety in the workplace Manuals, the reliability of the instrument was maintained as that of the Board. Data were generated from workers of different categories in the companies – supervisors, tool users, drivers, support staff, as well as security, Data collected were analysed using, counts and percentages. The findings revealed that in Setraco high educational level counts in their knowledge of causes of workplace accidents, but in FCC all the levels of educational qualification scored below average, in respected to gender, there is no difference in performance in the generated data from both Setraco and Fountain Construction Companies, of male and female workers in both companies that responded to the questions, over 50% of them scored below average (75% and 95%) and (85.5% and 100%) of Setraco and FCC respectively, the position (Rank) of workers in both companies has influence their knowledge of workplace accident in their companies. There is influence of service year on the knowledge of workplace accident in both Setraco and Fountain Construction Companies the more years of service scored higher less service year(s). It was equally discovered that, some of the low ranked workers are graduates while some at supervisory level are not graduates but raised to that position through service years and experience, and in both companies majority of the low ranked workers are on casual employment and this does not affect the high ranks (Positions). It was concluded that workers knowledge of causes of workplace accident is generally below average both in Setraco and Fountain Construction Companies and that without a thorough knowledge of what causes workplace accident, it will be difficult to reduce or avert the frequent occurrence of accident at work. Therefore the study recommended that workers at all levels be sensitized and trained on causes of workplace accidents, Pre-employment and pre-placement training and examinations on causes of workplace accidents be considered important and carried out during recruitment and placement of workers, on the job training be conducted at regular intervals, and discussions on causes of workplace accidents be regularly done with workers of all categories by professionals of safety and accidents.

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INTRODUCTION

CHAPTER ONE

Background of the Study

It is a truism that accidents do not just happen. They are caused by some factors, conditions or negligent processes. Nwachukwu (2000), maintained that accidents are unforeseen

events and that could occur anywhere and anytime, resulting to injury, sickness, deformity or death of humans and sometimes damage to property. Workplace accidents also known as occupational accidents are mishaps that occur distinctly in the workplaces which may inhibit continuity of activities and may lead to physical or mental damage or both. They are accidents that emanate in the process of carrying out ones scheduled assignments or functions in the workplace. Workplace accidents are seen as injuries, damages or harms that occur suddenly in the course of performing assigned tasks in workplaces; they may happen right in the workplace or around the work surroundings or even away from the work environment.

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Wikipedia (2012), considered occupational or workplace accidents as unexpected and unplanned occurrences in workplaces that result in harm. Though there are occupational diseases in the workplace which are contacted due to over time exposure to risk factors in the workplace or risk factors arising from work activities, these are unlike workplace accidents which are unforeseen, sudden or unexpected occurrences in the workplace that can lead to bodily injuries or damage of materials thereby putting the work process to a break. In the workplace, dangerous occurrences of accidents are experienced by workers, sometimes the severity of the accidents involves damage to body parts, or even death of workers. Thus in a recent experience in Fountain Construction Company, an automobile (tipper) crushed the foot of a casual worker who was running after a moving vehicle in a bid to join it from the company's site to his job location. Such a situation will no doubt affect the financial capability of the victim(s), particularly where some employers of labour come up with "pay as you work" or "no work no pay" rules. No doubt, if someone is incapacitated through workplace accidents, there would be reduction in his/her input at work because of the challenges that he/she faces which could be physical, mental or social.

Workplace accidents are on the increase in factories and industries in Nigeria with concomitant consequences of pains, injuries and damages to individual, family or societal settings. Though every set of worker is affected by one form of workplace hazard (accident) or the other, there is differential degree of the effects. Those at managerial level are affected but may not be as severe as the employees (workers) who are in the field due to the nature of their job schedules and tasks. It seems workers do not have the awareness or knowledge of the causes of accidents in their workplaces or if they have, their precautionary measures seemed not enough. Therefore it is a thing of concern that workplace accidents become reduced or averted if workers who are prone to accidents due to the nature of their jobs are aware or knowledgeable of the causes of workplace accidents and still involve themselves in such accidents. Various types of accidents occur in workplaces, ranging from slips, trips and falls; crush, burns and scalds; bursting of revolving vessel and wheels, crane accidents, exposure to chemicals, fumes or dusts and other harmful substances.

Explosion or fire accidents, electrocution, failure or collapse of buildings, scaffold accidents, accidents due to heavy lifting, falling objects, defective equipment, emotional and psychological trauma to assault at work are others. According to Accidents.com (2012), construction site falls are among the most common types of construction accidents. The types of construction falls are numerous, including: Scaffolding falls, falls into ditches, falls through flooring, falls off of cranes and lifts as well as elevator shaft falls. In most cases, basic safety precautions on the part of the site owner, contractor, or design professional could eliminate these types of falls and injuries. The causes of construction site falls are also numerous, due to the inherent danger of a construction site. Ehow (2012), indicated that slips and falls are the most common types of workplace accidents that one is at risk with, which are caused by such conditions as wet floors, debris and obstructions. Among the common injuries resulting from slips and falls are

bruises, cuts, strains and sprains. Electric accidents occur in workplaces where workers perform their duties while using electric power. Knowledge of the causes of the various types of workplace accidents is relevant in order to reduce the occurrences of such accidents in the workplaces. That accidents are among the most serious consequences of unsafe conditions or processes under which workers perform their tasks in different occupations, it calls for serious concern and hence issues on its occurrence, the factors that predispose workers to them and the attendant consequences are a research burden. This is the rational and relevance for investigating workers' knowledge on causes of workplace accidents towards achieving workplace safety.

Statement of the Problem

Many establishments provide appreciable measures to reduce accidents in their workplaces while others either neglect such or pay lip service to accident causative factors and prevention. Moreover, workers may have inadequate knowledge of the causes and the preventive measures of accidents in their workplaces or they are ignorant of such. Both situations exhibit cause for concern since they constitute the amber that fans the cause of accidents in workplaces. The inadequate knowledge experience becomes more worrisome when it concerns construction companies which are by their nature accident-prone. It is based on the above premise that the need for the present study becomes relevant and important. It is assumed that high level of workers knowledge of causes of workplace accidents will go a long way to prevent or reduce frequent occurrences. Judging from the high rate of accidents in Setraco and Fountain Construction Companies, one wonders whether workers from these two companies have sufficient knowledge on causes of workplace accidents. If the workers have adequate knowledge, how far do they use their possessed knowledge to avert workplace accidents? Therefore the present study intends to assess the level of awareness and knowledge of workers in these two construction companies on the causes of workplace accidents.

Research Questions

1. Does workers' educational qualification contributes to knowledge of workplace accidents causation of Setraco and Fountain Construction companies?
2. Does the level of knowledge of causes of workplace accidents of male workers of Setraco and Fountain construction companies differ from that of their female counterpart?
3. Does workers' position/rank influences their knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies?
4. Does workers' length of service contribute to their knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies?

Purpose of the study

The study is meant to determine workers' level of knowledge of causes of workplace accidents in construction companies (Setraco and Fountain Construction Companies) in Bayelsa State, Nigeria. Also to draw attention to the incidence of

workplace accidents in construction companies in Nigeria. It is also meant to reiterate the need for government, employers of labour and employees to agree on the need to implement the Factory act and Workman's compensation Act,

Significance of the Study

The findings of this study would be of great importance to management and workers of construction companies in improving workers' knowledge on the causes and consequences of workplace accidents in the establishments. It would equip construction companies better towards policy formulation on safety and accidents in the construction companies. It will lay a better foundation for instituting safety education programmes as preventive measures in the companies. It would also serve as a basis for further research efforts.

Delimitation

This study was delimited to Setraco and Fountain construction companies located along the East-West road in Sagbama Local Government Area of Bayelsa State.

Definition of Terms

Accident: An unplanned and un-designed (not purposefully caused) event which occurs suddenly and may or may not cause injury and loss. An unexpected and undesirable event that may result in damage or harm in construction companies.

Occupation: The work done by employees of construction companies as means of earning a living that engages or occupies the time and attention.

Unsafe acts: These are acts done by humans that are correctable and can lead to the causation of accident, they are acts that are not beneficial to the occupants of the environment and can endanger their lives.

Unsafe conditions: These are environmental factors inherent in construction companies which could cause accidents.

Knowledge: The sum of information and/or awareness gained through experience or education by workers in construction companies or what is known by this class of workers concerning accident, its causative factors and occurrences.

Workplace: construction sites and any place where the construction company worker can be in course of carrying out his task/job in the company

Workers: anybody employed by construction company, whether casual or permanent, field worker/management staff.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of related literature is organized under the following sub-headings:

1. Conceptual framework
2. Concepts of Accident

3. Factors That Cause Workplace Accidents
4. Education and Training
5. Length Of Service
6. Hazards

Conceptual Framework

When humans are aware or know that something is harmful, they will want to avoid it, but if they are not aware of the dangers involves in a particular practice, even if it is harmful to them repeatedly, they may still engage in such activities. Accident is harmful to humans, its effects may be on the individual (worker), the employer or the business. Therefore workers knowledge of the causes of workplace accidents may help in the reduction or aversion of accidents in the workplace and an establishment where worker are knowledgeable of the causes of accident will have less accident cases and the frequency of occurrence may reduce.

Concepts of Accident

Accidents are sudden and unforeseen events that can occur anywhere and anytime resulting in injury, sickness, deformity or death to humans and sometimes damage to property (Nwachukwu, 2000). All word (2007), sees accident as an unexpected event which causes damage or harm. An event that occurs unexpectedly and unintentionally, physical examples include unintended collision or falls, being injured by touching something sharp, hot, electric or ingesting poison (Accident-wikipedia, 2007). According to Ezenwa, (1995) accidents are unexpected and unplanned events which could lead to bodily injury, death and or material damage. Allword (2007) added that accident is something which happens without planning or intention; chance. An accident is seen to be an unpleasant and unintended happening, sometimes resulting from negligence that results in injury, loss, damage etc. (Webster New College Dictionary, 2010). An accident can be described as an unwanted event that is never scheduled or planned (OHS, 2010).

Factors that Cause Workplace Accidents

Different theories of accident causation have been addressed by various authors, from the Domino, Human factor theory to the epidemiological theory of accident causation which holds that the models used for studying and determining the relationship between environmental factors and disease can be used to study causal relation between environmental factors and accident. Also the system theory which views any situation which accident might occur as a system with three components: person (host), machine (Agency) and environment (Chetgoet, 2011). Harvey (1985) identified the three broad causes of accident as agent, host and environment. Ezenwa (1995) asserted that accident involves three main factors of person, equipment and the environment. The models and theories considered many factors involved in the causation of accident, which can fall into the person (host), equipment (agent) and the environment.

The Agent Factor

According to Harvey (1985), the object that produces the accident is an essential way intrinsic to the particular accident.

These agents of harm (accident) to an industrial worker and other persons whose job involve the operation of machines, they are specific predisposing factors for industrial injuries (Nwachukwu 2000). Europa (2010), refers material agents as the objects, tools or instrument which the victim came into contact or the psychological mode of the injury. Apart from the objects, tools and/or instruments, substances serve as agents of accident causation. According to Cleveland (2011), the agents are substances which the worker is exposed. They are exposed to respiratory irritants agents, the exposure to these irritant agents would be encountered in occupational settings (chest, 2011). According to Europa (2010), contact or mode of injury together with material agents are the variables characterizing the type of accident. This describes how the victim was hurt by the material agent that caused the injury. Agents in the causation of accident could be due to poorly designed machines (Basic Models of Accident Causation, 2011). According to Ezenwa (1995), poisoning usually involves contact with ingestion or inhalation of noxious substances resulting in demonstrable signs and symptoms of toxicity. Occupational problems can be got due to exposure to agents in the workplace.

Cleveland (2011), asserted that there are two types of occupational asthma, the irritant type occurs after one or more exposures to high concentration of irritants. Nwachukwu (2000), highlighted some specific causes of occupational accidents as low beam, fall of objects from high points, toxic, corrosive substances leaking from storage vessels, touching of revolving objects, hammer blows when driving nail into wood or breaking some objects apart, cutting or sawing objects, supporting or lowering heavy objects, stepping on sharp objects like metal cutting, broken bottles, nails, work tools, striking body parts (leg) against protruding objects at low or ground level, burns due to fire, chemicals, steam boiler. Workplace Safety advice (2011), asserted that electrically operated equipment is always heavily used on construction site and given that the nature of the work often exposes this type of equipment to the element of the weather, all proper precautions need to be taken with regards to this as well as ensuring that the supply voltage is as low as possible and that residual current devices (RCD) are checked daily and are in full condition or order. Workplace accident can occur in the absence of precautionary actions in the operation of such equipment which can serve as agents of accident causation.

Workplace safety advice, (2011) added that noise can be excessive with all the various machinery in operation... the list of potential danger on construction site is almost endless. Other areas to be risk-assessed include checking of asbestos and any location of underground cable for safety digging. If these assessments are not considered, accidents in the workplace are bound to occur. Umuraye (2007), indicated that lead is used in a wide range of manufacturing process, poison from lead could arise from occupation, occupational deafness is caused as a result many years of exposure to noise intensity. Noise intensity of 85 and 90 decibels in the US and England respectively may damage the ear and cause hearing loss. The rate of deterioration depends mostly on the level, impulse, components and the duration of exposure. Conditions such as injuries, intoxication and old age are also attributes of occupational deafness. Absence or insufficient oxygen to

breath in an environment e.g. inhalation of poisonous substances (gases or water) can also lead to asphyxiation or suffocation in an occupation. Chemical, physical, mechanical and biological factors can cause occupational dermatitis. Considerably more than 15% of all occupational diseases are due to substances which produced skin irritation. The incidence of occupational injuries is often due to many reasons i.e. scarce capital can bring about poor machinery, over loading, inadequate safeguards, lack of maintenance culture and defects in the working environment (Umuraye 2007).

The Host Factor

Harvey (1985), describes the host as the person to whom the accident happens. Sometimes the cause of an industrial accident could be traced to the worker himself (Nwachukwu 2000). According to Teldmedpark (2007), the biggest cause of accident is human error and this was supported by OHS, (2006), that all accidents are caused, they are the results of human error and they involve unsafe behaviours or unsafe conditions or a combination of both. Nwachukwu (2000), asserted that lack of acquired knowledge or skill for the operation of a machine or other activities, improper personal disposition like willful disregard for the rules of safety (working without safety gear), operating under grip of extreme fear, mental instability, reckless behavior, impatience, wearing long neck-tie, flowing gowns, magnetic materials, physical and psychological disability such as auditory impairment, poor vision, ill health, influence of alcohol (drugs), overweight, accident proneness, fatigue, poor reaction time could all cause accident (Nwachukwu, 2000). He also highlighted other human errors as carelessness in handling sharp or pointed objects, touching corrosive substances or hot objects. Findings from the 2002 safety index closely match results from a company's 2001 safety index; the rank order of the ten (10) leading causes of workplace injuries was identical with "over exertion and falls being the leading injury causes and that over exerting and repetitive motion are leading causes of ergonomic-related workplace accidents, (Workplace Injuries, 2011).

Workplace Safety (2011), asserted that falls and trips continue to make up the largest proportion of workers who suffer fatality on a construction site, falling from height is still a major risk factor which is why concern such as the safety of scaffolding, walkways, use of ladders and mobile lifting platforms etc is still of such importance. The host if not aware of certain phenomena in the workplace and not having the ability or knowledge to handle such, can lead to accident and that fire risks are always a concern on construction sites and there should be a proper provision of fire prevention, what to do in the event of fire and any storage and use of hazardous or inflammable materials must also be taken into consideration if workers or any user of such materials lack the knowledge of using such materials, it can lead to destruction of life (people) and materials in the workplace. Unuraye (2007), remarked that there may be poor management, poor supervision, difficulties in communication, poor training and technical understanding, and the effect of fatigue to which endemic diseases can contribute and that shift work is a common occupational stressor, it affects as well as neurophysiologic rhythms such as blood temperature controllers, that organizational structures

and climate such as office politics in decision-making process and restriction on behavior, job overload and under load are also causes of occupational stress which can lead to occupational accident.

The Environmental Factor

The circumstances surrounding the accident that are extrinsic to the agent, yet part of the event e.g. time, location, noise, light (Harvey, 1985). According to Nwachukwu (2000), accidents are the most serious consequences of the unsafe conditions under which workers perform their tasks in different occupations. When the environment is unsafe it poses a threat to workers. Zand (2007), asserted that environmental conditions are also causes of accident. For OHS (2006), the inherent ability of the environment that initially caused the accident is seldom addressed in its entirety. Conditions in the work place which could be hazardous to workers include bad staircase, smoked-filled passage, slippery floors and uneven surfaces which could cause falls, poor illumination which could precipitate problems of vision, poor ventilation leading to personal discomfort from heat, and toxic irritation problems (Nwachukwu, 2000). Adeniyi (2001), opined that the work environment may have positive or negative effects on workers' health depending on the nature of factors within the workplace and the degree of exposure to such factors. He further asserted that components of the work environment in occupational health and safety refer to factors in the workplace that give rise to hazard and describes the work environment as being made of physical, chemical, biological, ergonomic and psychological components.

Environmental factors which affect workers include heat, humidity, high temperature etc. they are adverse environmental factors which workers in developing countries in the tropics must contend with (Asogwa 1986), Ezine (2011), made it clear that many causes of an accident in the workplace are either because of the workplace or the worker himself. Areas which have been excavated, untidy sites where building materials have been left out, where people can trip over them and the non-removal of waste have all contributed to slip and trips which can result in serious injury and in some cases far worse (workplace Safety, 2011). According to Unuraye (2007), the physical environment consist of non-living things such as the air, soil, water, minerals, the temperature, humidity etc that have direct effect on man. He identified poor physical condition as source of occupational stress, that in a situation where the design of a control room or a workplace is inadequate there is possibility of stress. Occupational injuries and accidents are among the most serious consequences of unsafe conditions under which workers perform their tasks in different occupations. In industry, accidents have caused untold hardship and even death to workers (Unuraye, 2007).

Unuraye (2007), is or the view that an unhealthy environment is characterized as litters of refuse (waste) in the environment, absence or insanitary provision of toilet facilities resulting in poor disposal of sewage within the surrounding, presence of tall grasses and bushes around the surrounding, presence of offensive odour in the environment, dirty drainage in the surrounding, the presence of dangerous objects (hazards) that can result in accidents or disease, poor or inadequate

ventilation to houses and workplaces, absence or inadequate supply of potable water and that a healthy and safe environment is characterized by the absence of hazard and nuisance that can expose one to accident or disease.

Education and Training

Human resource (2012), observed that best job training happens at work, if you are committed to employee development, powerful reasons exist about why employee development is critical. On the job training is the solution. That employee appreciates the chance to develop knowledge and skills without ever living work and that internal job training and employee development bring special plus. Workers are to be trained on the causes and prevention of accident while at work in order to develop their knowledge on such phenomenon, these training offered are to the advantage of both the employees and the employers as an organization and this can improve service or/and production. Such training can be provided through mentoring:

Mentoring: Monitoring is a powerful form of on the job training and can contribute to experience, skills and wisdom to the mentored worker to increase and expand development. It might be the boss or another employee.

Periodic in- House Training from Internal or External Resources: This is an effective way to offer training and build the workers as a team at the same time. To develop workers, brief sessions are offered in the workplace on a regular basis, it gives a worker room to be trained by someone who knows the goals and work norms. This can bring about job improvement, growth and change.

External training: External seminars, training sessions or conferences on workplace accident and work related issues are attended to establish workplace norms that employee is expected to know. Human resources (2012), posited that external seminars training and conferences are effective for employee development because it introduces new ideas to the organization and that it is cost effective because the employee that attended the programme provides employee development for other employees and by so doing extends job training knowledge.

Promotion: This is a powerful measure of job training, it makes an employee to grow. When an employee is well mentored and coached it brings about employee development. Promotion is stretching and fulfilling

Transfer: This, according to Human Resource (2012), helps to create career part. It produces experiences in other areas of employee's current department within an organization. It widens the employee's horizon and enables the worker to gain wider and broader experience in the workplace.

Lateral Move: A worker moves to an equivalent role in the workplace, the new role usually provides a similar range of salary and job title at the same level. In lateral moves the workers job responsibilities change therefore creating new opportunities for job training.

Job shadowing: According to Human Resource (2012), this allows a worker to learn about and benefit from brief stints of job training while the worker observes and participates in the work of another worker. This is a measure to provide training for back up workers and workers with an interim assignment resulting from workers retrenchment.

The ILO (2012), posited that on the job training at the worksite is appropriate for workers and supervisors facing specific hazards found on site and recommended training for safety. According to Leeds (2012), a study conducted by M.H. YalanKaragven on the Relationship between Work Accident, Educational Backgrounds and Stress levels of Textile workers indicated that educational background was significantly related with work accident, that the educational level of workers who have work accidents is significantly lower than workers do not have work accidents. "No case can succeed without first making education its ally". Victor Hugo, a French writer was quoted by ILO (2012) it says as the workplace becomes complex, new demands have arisen for greater understanding of causes and means of prevention of accidents, injuries and illness. Government officials, academics, management and labour, all have important roles to play in workers education. The primary tools needed to achieve the goals of reducing occupational injuries and illnesses and promoting occupational safety and health have been characterized as the "three E's" engineering, enforcement and education the overall rationale for training and education is to improve awareness of safety and health hazards, to expend knowledge of the causes of occupational illness and injuries, to promote the implementation of effective prevention measures, education and training are critical components of an effective safety and health programme.

Length of Service

In a study conducted by OEMBJM (2012) on role of age, length of service and job in work related injury in railway, workers reported that short length of service workers are at risk for various types of injuries and that knowledge on workplace accident prevention should be provided through specific training during their first year in the job. NCBI (2012).in a study conducted in a metal melting industry indicated that workers with less experience were at increased risk of accident occurrence. Length of service is the duration years a worker has worked in an establishment. When the work was first engaged due to probably lack of knowledge of the occurrences in the workplace or insufficient skill in the application of workplace principles he/she may be involved in frequent accident, but as the number of years in the service increases the workers experience on accident accusation is increased, thereby causing reduction in the rate of accident involvement. Umaine, (2012) noted that workers who have spent less number of years in an establishment incurred more injuries at work than workers who have spent good number of years and that new employees experience a disproportionately high rate of work- related accidents, injuries and illnesses and that who have being with their particular employers for less than one year accounted for more of the accidents (injuries) than workers that have spent ten (10) years and above. Maine (2012) added that though all groups in the establishment are potentially at risk.

It means the new employees are not acquainted with the rudiments of the work and workplace, therefore accident is bound to happen since they do not know what causes accidents at their early stage of employment and by exposure and experience their knowledge on the causes of workplace accidents is likely to increase.

Hazards

According to Itcilo (2012), workers do not create hazards: In many cases, hazards are built into the workplace. Most establishment are ensuring that workers adapt to the unsafe conditions the workplace, this does not proper solution due to the differences in human nature therefore the solution is the removal of hazards in the workplace. These hazards range from

Chemical hazards: which are hazards arising from liquids, solids, dusts, fumes, vapours and gases. Chemical hazards are dust, vapors, drug, dye, explosives, fertilizers, fibrogenic mineral dusts, paint particles, plastic solvents, woods, plants and organic dusts, carbon monoxide, mists, fog, fumes, talc etc through ingestion, inhalation, contact and absorption (Unuraye, 2005). All these are chemical related hazards, that when workers are exposed to can cause harm in the industry. Factory Act (1987), asserted that where in connection with any grinding, sieving or other process giving rise to dust, gas or vapour there may escape into any work room, dust, gas or vapour of such character and to such an extent as to be liable to explode on ignition, all practicable steps should be taken to prevent such explosion by enclosure of any plant used in the process and by removal or prevention of accumulation of the dust, gas or vapour and by exclusion of effective enclosure of possible source of ignition. The exposure to these chemicals can lead to health problems like cancer, respiratory problems, reproductive disorders, skin problem, eye (visual) problems etc.

Physical hazards: These are hazards such as noise, vibration, unsafe factory lighting, radiation and extreme temperature. (Itcilo, 2012). In agreement with Itcilo (2012), Unuraye (2005), described physical hazards as noise, light, ionization, radiation high or low pressure, high or low temperature, vibrations, X-rays and heat stress. Wikipedia (2007), reported that others include slips and trips, falls from height, extreme temperature, poor lighting, noise vibration, radiation and electricity. Ezenwa (1995), describes noise as a sound without agreeable musical quality or an unwanted sound. Asogwa, (2000) opined that the amount of heat a worker is exposed to is determined by the net effect of environmental heat, clothing, metabolic activity and the type of work done while environment is dependent on air, temperature, humidity and velocity.

Biological Hazards: These hazards are described by Itcilo,(2012) as microorganisms such as bacteria, viruses and infectious wastes and infections. Unuraye (2005), posited that Workers may be exposed to some biological agents which are responsible for the causation of these workplace diseases or hazards, such biological agents are fungi, bacteria, rickettsia, viruses etc. workers may be exposed to other worker with a particular latent disease thereby getting infected with the

disease such a tuberculosis or may get contact with water (stagnant or running) during work and contact worm infestation leading to some diseases like guinea worm, schistosomiasis. These hazards are insects, bacteria, virus, yeasts, spores, parasites and fungi. The diseases of virus include rabies, AIDS. Bacteria are anthrax, tuberculosis, tetanus etc. Parasitic diseases such as ankylostomiasis, schistosomiasis etc, other sources of biological hazards include overcrowding, poor ventilation, poor hygiene, and lack of washing and waste disposal facilities.

Psychological hazards: This is the state of the mind caused by stressors such as anxiety, strains, emotional disturbances that affect man's work in his workplace that can lead to accident in one's occupational setting (Unuraye 2005). Work pressure, emotional tension, work that requires performance with vigor could lead to psychological hazards. Itcilo, (2012) describes psychological hazards as those resulting from stress and strain.

Mechanical Hazards

According to Unuraye (2005), the man-machine relationship must be smooth and cordial, otherwise, the worker is predisposed to fractures and dislocations, poor work out-put, fatigue, body ache, anxiety, stress etc. these hazards are associated with badly designed work equipment (machine) poorly stationed or positioned work place and poorly designed work practices.

Psychosocial Hazards

Work organization, leadership styles, communication, worker participation and fulfillment security, workers may be predisposed to propensity for psychosocial hazards like man-man problems of stress, anxiety, frustration, aggression etc short coming or lack of these may cause ill-health e.g. repetitive assignments, over load, under load, shift work, poor remuneration, and other benefits, un-conducive work environment, poor health conditions, lack of job satisfaction, queries, memos etc (Unuraye, 2005). Other factors that can lead to such conditions are inability to adapt to the work environment, solitary jobs (isolation). Most times workers are exposed to one or a combination of these hazards in their workplaces. They may be exposed to chemical, unguarded noisy machines, hot temperature and slippery floors at the same time.

Summary of the Literature Reviewed

The literature review considered concepts of accident, perceived some models and theories of accident in relation to the factors that cause workplace accidents as agents (equipment/tools and processes), hosts (workers) and environment (facilities/infrastructures), it further looked at the role of education and training in the causation and prevention of workplace accidents and that job training can be provided through; monitoring, periodic in-house training, external training such as seminars, promotion, transfer, lateral move and job shadowing were also considered as means of training on the job. Workers 'length of service may also contribute to their knowledge of the causes of workplace accidents. The

hazards that are likely to be in workplaces are categorized into chemical hazards, physical hazards, biological hazards, psychological hazards, mechanical hazards and psychosocial hazards. Finally, it is obvious from literature search that many factors are directly or indirectly related to accident causation in the workplace which Setraco and Fountain construction companies are part.

CHAPTER THREE

METHOD OF THE STUDY

The method and procedure used by the researcher to carry out this study are presented in this chapter. They are discussed under the following sub-headings.

- Research design
- Population of the study
- Sample and sampling technique
- Research instrument
- Validity of the instrument
- Reliability of the instrument
- Administration of the instrument
- Method of data analysis.

Research Design

The case study survey design was used and this entails an intensive review of an individual unit stressing the causative and other related issues to accident. In this study we explored contextually workers' knowledge of causes of workplace accidents in construction companies in Bayelsa State.

Population of the Study

The population of the study consists of all workers in Setraco and Fountain Construction Companies in Sagbama LGA, Bayelsa State. In 2013 when this research was conducted, the number of workers in both companies is estimated to be 600 based on their work projection after the devastating flood in 2012. Setraco = 350 and Fountain construction company = 250 workers.

Sample and Sampling Technique

The sample for this study is 120 representing 20% of workers of each company (Setraco =70 & Fountain Construction company = 50). The systematic random sampling technique was adopted in selecting the study sample. The nominal roll of workers was obtained and used after obtaining permission from Management of each company. After explaining the significance (objective) of the study to the Management and workers of the companies in order to obtain their cooperation, the lists of names of workers on the nominal roll was used, to which the first name on the list and every fifth name of both Setraco and Fountain Construction company was selected.

Research Instrument

The instrument used for the study was multiple choice questions of 15 items with option testing the knowledge of the

respondents on causes of accidents in the workplace, the instrument was adapted from the Joint Industrial Board Health and Safety Test Manual 2009 and Royal Society for Public Health level 1 award in Health and Safety in Workplace January, 2011

Validity of the Instrument

In order to establish validity of the research instrument, the instrument was vetted by the supervisor and other experts in the Department of Health, Environmental Education and Human Kinetics and The Faculty of Education, University of Benin to ascertain the content validity of instrument. The final instrument was subjected to departmental review through presentation to the Post Graduate Committee of the department as was approved accordingly.

Reliability of the Instrument

To establish reliability of the instrument the test-retest method was used. The instrument was first administered to 10 workers of a construction company and obtained the result (responses) and re-administered the same instrument after two weeks to the same set of workers and obtained their responses. The two sets of results (responses) were correlated using Pearson Product Moment Correlation Coefficient and arrived at 0.7. The same was done in another construction company with 10 workers also and arrived at 0.8. This shows that there is positive and high relationship between responses of the first company and a very high and positive relationship between responses in the second company.

Administration of the Instrument

The instrument was administered personally by the researcher with the aid of one research assistant one from Setraco, after permission was granted by the Management of the companies. The instrument (MCQ) was distributed to 120 workers who were selected to respond to the questions and the question papers were retrieved thereafter, this was done during their break periods. 70 respondents were selected to respond to the multiple choice questions (items) in Setraco and 50 respondents were selected in FCC and the question papers were retrieved by the researcher and the research assistant. Upon retrieval 7 forms were not responded to in Setraco and 6 in FCC were not attempted (not responded to) the total number of forms that was answered and retrieved is 107 (Setraco 63 and FCC 44)

Data Analysis

Data were collected and analyzed using frequency counts and percentage.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

In this chapter, the analyzed data are presented to address the research questions and discussion of the data is also made.

Research Question 1

Does workers' educational qualification contributes to knowledge of workplace accidents causation of Setraco and Fountain Construction companies?

The 63 workers with different qualifications that responded to the questions in Setraco; Primary school Certificate holders are 6(9.5%), SSCE 41(65.1%), NCE/OND9 (14.3%), Degree 5(7.9%) and NONE 2(3.2%). 54(85.7%) scored below 50% while 9(14.3%) scored 50% and above. Among the workers with different qualifications that scored below 50% (below average); Primary certificate holders are 6(11.1%), SSCE 38(70.4%) NCE/OND 6(11.1%), Degree 2(3.7%)and NONE 2(3.7%). Among the workers with different qualifications that scored 50% and above; primary are 0(0.0%), SSCE 3(33.3%), NCE/OND 3(33.3%), Degree 3(33.3%) and NONE 0(0.0%). Among the 6 (9.5%) Primary certificate holders that responded to the questions 6(100%) scored below average. Among the 41(65.1%) SSCE holders 38(92.7%) scored below 50% and 3(7.3%) scored 50% and above. Among the 9 (14.3%) NCE/OND holders 6(66.7%) scored below 50% and 3(33.3%) scored 50%and above. Among the 5(7.9%) degree holders; 2(40%) scored below 50% and 3(60%) scored 50% and above. The 2(3.2%) NONE (without qualification) scored below average

The 44 workers s with different qualifications that responded to the questions in FCC; Primary 1(2.3%), SSCE 35(79.5%) NCE/OND 3(6.8%),degree 4(9.1%)and NONE 1(2.3%) 41(93.2%) scored below 50% while 3(6.8%) scored 50% and above. Among the 41(93.2%) that scored below 50%; Primary is 1(2.4%), SSCE 33(80.5%),NCE/OND 3(7.3%), Degree 3(7.3%) and NONE 1(2.4%). Among the 3(6.8%) workers that scored 50% and above; SSCE are 2(66.7%) and degree (33.3%). 1(100%) of the Primary school cert holders scored below 50%, 33(94.3%) Of the SSCE scored below 50% and 2(5.7%) scored 50% and above. 3(100%) of the NCE/OND scored below 50% 3(75%) of the degree scored below 50% and 1(25%) scored 50%and above. 1(100%) of the NONE scored below 50%

Research Question 2

Does level of knowledge of male workers of Setraco and Fountain construction companies differ from that of their female counterpart?

63 male and female workers responded to the questions, among the 63 male and female workers; male are 62(98.4%) and female 1(1.6%). Among the 64 male and female workers 54(85.7%) scored below 50% and 9(14.3%). Scored 50% and above. Among the 54(85.7%) male and female workers that scored below 50%; male 53(98.1%) and female 1(1.9%). Among the 9(14.3%) male and female workers that scored 50% and above; male 9(100%)and female 0(0.0%) Among the 62(98.4%) male workers 53(85.5%) scored below 50% and 9(14.5%) scored 50% and above while the 1(1.9%) female scored below 50% and no female scored 50% and above.44 male and female workers responded to the questions in FCC, among the 44 male and female workers; males are 40(90,9%)

Table 1. Setraco Workers' Educational Qualification

S/N	QUALIFICATION	FREQUENCY		BELOW 50%		50% AND ABOVE		% BY BEL 50%	% BY 50%+
		NO	%	NO	%	NO	%		
1	PRIMARY	6	9.5	6	100	0	0.0	11.1	0.0
2	SSCE	41	65.1	38	92.7	3	7.3	70.4	33.3
3	NCE/OND	9	14.3	6	66.7	3	33.3	11.1	33.3
4	DEGREE	5	7.9	2	40.0	3	60.0	3.7	33.3
5	NONE	2	3.2	2	100	0	0.0	3.7	0.0
	TOTAL	63	100	54	85.7	9	14.3	100	

Table 2. FCC Workers' Educational Qualification

S/N	QUALIFICATION	FREQUENCY		BELOW 50%		50% & ABOVE		% -50%	% 50% & +
		NO	%	NO	%	NO	%		
1	PRIMARY	1	2.3	1	100	0	0.0	2.4	0.0
2	SSCE	35	79.6	33	94.3	2	5.7	80.5	66.7
3	NCE/OND	3	6.8	3	100	0	0.0	7.3	0.0
4	DEGREE	4	9.1	3	75.0	1	25.0	7.3	33.3
5	NONE	1	2.3	1	100	0	0.0	2.4	0.0
	TOTAL	44	100	41	93.2	3	6.8		100

Table 3. Setraco Male and Female (Gender) Workers

S/N	GENDER	FREQUENCY		BELOW 50%			50% & ABOVE		
		NO	%	NO	% OF WORKERS	% BY GENDER	NO	% OF WORKERS	% BY GENDER
1	MALE	62	98.4	53	98.3	85.5	9	14.3%	14.5%
2	FEMALE	1	1.6	1	1.9	100	0	0%	0%
	TOTAL	63	100	54	85.7		9	14.3	

Table 4. FCC male and female (gender) workers

S/N	GENDER	FREQUENCY		BELOW 50%			50% & ABOVE		
		NO	%	NO	% BY GENDER	% OF WORKERS	NO	% BY GENDER	% OF WORKERS
1	MALE	40	90.9	38	95	92.7	2	5	66.7
2	FEMALE	4	9.1	3	75	7.3	1	25	33.3
	TOTAL	44	100	41	93.2	100	3	6.8	100

Table 5. Setraco Workers' Position

S/N	WORKER	FREQUENCY		BELOW 50%		50% AND ABOVE		% BEL 50%	% BY 50 %+
		NO	%	NO	%	NO	%		
1	SUPERVISORS	2	3.2	1	50	1	50	1.9	11.1
2	TOOL USERS	6	9.5	6	100	0	0	11.1	0.0
3	DRIVERS	1	1.6	0	0	1	100	0.0	11.1
4	SUPPORT STAFF	52	82.5	45	86.5	7	13.5	83.3	77.8
5	SECURITY	2	3.2	2	100	0	0	3.7	0.0
	TOTAL	63	100	54	85.7	9	14.3	100	100

Table 6. FCC Workers' Position

S/N	WORKER	FREQUENCY		-50%		50% +		% -50%	% 50% & +
		NO	%	NO	%	NO	%		
1	SUPERVISORS	3	6.8	3	100	0	0	7.3	0.0
2	TOOL USERS	3	6.8	2	66.7	1	33.3	4.9	33.3
3	DRIVERS	0	0.0	0	0	0	0	0.0	0.0
4	SUPPORT STAFF	37	84.1	35	14.6	2	5.4	85.4	66.7
5	SECURITY	1	2.3	1	100	0	0	2.4	0.0
	TOTAL	44	100	41	93.2	3	6.8	100	100

Table 7. Setraco Workers' Year(S) Of Service

S/N	YEAR(S) OF SERVICE	FREQUENCY	BELOW 50%	50% & ABOVE	% FRQ	% BEL	% BY 50% & +
1	3	26	17	9	41.2	31.5	100
2	2	20	20	0	31.8	37.0	0.0
3	1	13	13	0	20.6	24.1	0.0
4	-1	4	4	0	6.4	7.4	0.0
	TOTAL	63	54	9	100	100	100

Table 8. FCC Workers' Year(S) Of Service

S/N	YEAR(S) OF SERVICE	FREQUENCY		BELOW 50%		50% & ABOVE		% -50%	% 50%&+
		NO	%	NO	%	NO	%		
1	5 YEARS	6	13.6	5	83.3	1	16.7	12.2	33.3
2	4 YEARS	7	15.9	7	100	0	0.0	17.1	0.00
3	3 YEARS	17	38.6	15	88.2	2	11.8	36.6	66.7
4	2 YEARS	12	27.3	12	100	0	0.0	29.3	0.00
5	1 YEAR	0	0.0	0	0.0	0	0.0	0.0	0.00
6	LESS THAN 1 YEAR (-1)	2	4.6	2	100	0	0.0	4.8	0.00
	TOTAL	44		41	93.2	3	6	100	100

and females 4(9,1%). Among the 44male and female workers 41(93.2%) scored below 50% and 3(6.8%) scored 50% and above. Among the 41(93.2%) male and female workers that scored below 50%; males are 38(92.7%) and female 3(7.3%). Among the 3(6.8%) workers that scored 50% and above; male 2(66,7%) and female 1(33.3%). Among the 40(90,9%) male workers; 38(95%)scored below 50% and 2(5%) scored 50% and above. Among the 4(9.1%) female workers; 3(75%) scored below 50% and 1(25%) scored 50% and above.

Research Question 3

Does workers' position/rank influence their knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies?

The 63 workers that responded to the question items in Setraco were; Supervisors 2 (3.2%), tool users 6 (9.5%), Driver 1 (1.6%), support staff 52 (82.5%) and security 2 (3.2%) 54(85.7%) of the workerswith different positions that responded to the questions scored below average (less than 50%) while 9 (14.3%) scored 50% and above. Among the 54(85.7%) workers that scored below 50%; supervisors 1constitutes (1.9%), tool users 6 (11.1%), driver 0 (0%), support staff 45 (83.3%) and security 2 (3.7%). Among the 9 (14.3%) workers that scored 50% and above; supervisors 1 constitutes (11.>1%), tool users 0(0%), drivers 1(11.1%) and security 0(0%).

The 2 supervisors 1 (50%) scored below average (less than 50%) and 1 (50%) scored 50% and above. The tool users 6 (100%) scored below average (less than 50%). The driver 1 (100%) scored 50% and above. The 52 support staff 45(86.5%) scored below 50% and 7(13.5%) scored 50% and above. The security men 2(100%) scored below average (less than 50%). The 44 workers that responded to the questions in FCC; Supervisors 3 (6.8%), tool users 3(6.8%), support staff 37(84.1) and security 1(2.3%). 41 (93.2%) of the workers with different positions scored below average (less than 50%) while 3(6.8%) scored 50% and above.

Among the 41 (93.2%) of the workers that scored below 50%; supervisors 3(7.3%) tool user 2(4.9%) support staff 35(85.4%) and security men 1(2.4%). Among the 3 (6.8%) workers that scored 50% and above; tool users 1(33.3%), support staff 2(66.7%). Among the 3(6.8%) supervisors 3(100%) scored below 50% non-scored 50% and above. Among the 3(6.8%)tool users 2(66.7%) scored below 50%and 1(33.3%) scored50% and above. No driver responded to the questions. Among the 37 (84.1%) support staff 35 (94.6%) scored below

50% and 2(5.4%) score 50% and above. The 1 (2.3%) security man 1(100%) scored below 50%.

Research Question 4

Does workers' length of service contribute to their knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies?

63 workers with different year(s) of service that responded to the questions in Setraco; workers with 3year of service are 26(41.3%), 2years 20(31.8%), 1year 13(20.6%) and less than 1year 4(6.3%). Among the 63 workers with different year(s) of service; 54(85.7%) scored below 50% while 9(14.3%) scored 50% and above. Among the 54(85.7%) that scored below 50%; 3years of service is 17(31.5%), 2years 20(37.0%), 1year 13(24.1%) and less than 1year 4(7.4%). Among the 9(14.3%) that scored 50% and above; 3years 9(100%) and others years, 1year and <1year) scored 0 (0.0%) each. Among the 26(41.3%) 3years of service; 17(65.4%) scored below 50% and 9(3.4%) scored 50% and above.

Among the20 (37.0%) 2years of service; 20(100%) scored below 50% and 0(0.0%) scored 50% and above. Among the 13(20.6%) 1year of service; 13(100%) scored below 50%. Among the 4(6.3%) <1year of service; 4(100%) scored below 50%.44 workers with different year(s) of service that responded to the questions in FCC; workers with 5years of service are 6(13.6%), 4years 7(15.9%), 3years 17(38.6%), 2years 12(27.3%), 1year 0(0.0%) and less than 1year 2(4.6%). Among the 44 workers with different year(s) of service that responded to the questions in FCC 41(93.2%) scored below 50% and 3(6.8%) scored 50% and above. Among the 41(93.2%) that scored below 50%; 5years are 5(12.2%) 4years 7(17.1%), 3years 15(36.6%), 2years 12(29.2%), 1year 0(0.0%), <1year 2(4.9%).

Among the 3(6.8%) that scored 50% and above; 5years is 1(33.3%) and 3years are 2(66.7%) while others (4, 2, 1 and less than 1year) none scored 50%anad above. Among the 6(13.6%) workers with 5years of service; 5(83.3%) scored below 50% and 1(16.7%) scored 50% and above. All (100%) of the 7(15.9%) with 4years of service scored below 50%. Among the 17(38.6%) workers with 3years of service 15(88.2%)scored below 50% and 2(11.8%) scored 50% and above. All (100%) of the 12(27.3%) workers with 2 years of service scored below 50%. All (100%) of the 2(4.6%) workers with less than 1 year of service scored below 50%. There was no worker with 1year of service that responded to the questions.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter deals with the summary of finding as well as recommendation of the investigation. The purpose of the study was to determine workers knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies. In the course of the study the following research questions were posed and attempts were made to provide answers to them.

- Does workers' educational qualification contributes to knowledge of workplace accidents causation of Setraco and Fountain Construction companies?
- Does the level of knowledge of male workers of Setraco and Fountain construction companies differ from that of their female counterpart?
- Does workers' position/rank influence their knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies?
- Does workers' length of service contribute to their knowledge of causes of workplace accidents in Setraco and Fountain Construction Companies?

The data used for the study was gathered from test(s) (multiple choice questions) conducted in companies. The data collected were analyzed for the study using frequency counts and percentages.

Findings

Emirald (2013) in his work declared that there are many advantages of work base qualification and it helps to meet the twin social inclusion goal of employment and education. High educational qualification status counts in the knowledge of accident causation in Setraco workers: the higher the qualification, the higher the percentage that scored above average in that qualification (SSCE 7.3%) NCE/OND 33.3% and Degree 60% score 50% and above. The result is in agreement with Ramazan, (2012) which stated that the effective agent of accident causes was educational level that there is a negative relationship between educational level and accident frequency. That the rate of accidents in illiterates and elementary school level was higher than the higher level of education (Diploma and higher education) and that there was a statistical relationship between educational level and results of accidents. But in FCC High educational qualification does not count, all the levels of qualifications scored less than 50% and degree 25% scored above average. This is in line with the Health and Safety Authority (2013) which described wrong mental model - as a person picture the way something is best done and does it that way as it appears immediately the 'right' way, although it is not. The cause of this can be lack of training, lack of re-enforcement of training, out of date procedures, bad modeling. Gender does not influence the knowledge of workers in accident causation in Setraco and FCC in Sagbama Bayelsa State in the male and female workers that responded to the questions over 50% of them (75% and 95%) score below average in FCC and in Setraco (85.5% and 100%) of male & female respectively score below 50%. Position of workers in Setraco and FCC

does not influence the knowledge of workplace accident causation in Setraco the high rank (position) workers also do not score higher than the others. In Setraco year of service influences the knowledge of accident causation in workplace, workers with 3 years of service (which is the highest) and the only ones that got 50% and above also in FCC the highest % of those that scored 50% and above are those with 5 years of service. As the years of service increases the score get increased this agrees with OEMBJM (2012) where workers reported that short length of service workers are at risk for various types of injuries and that knowledge on workplace accident prevention should be provided through specific training during their first year in the job. Both in Setraco and FCC, the high ranked workers are not on temporary employment but most low ranked workers are on casual bases

Conclusion

The ILO (2012), stated that the overall strategy is to develop the advanced knowledge and labour education of capacity of workers' organization with the ultimate goal of strengthening the knowledge and influence of workers organization in tackling occupational safety and health challenges. The conclusion is drawn on the basis of the findings of this study. Workers knowledge of workplace accidents causation in both Setraco and FCC is below average in terms of educational qualification, gender, position and year of service. 85.7% in Setraco scored below average and 14.3% scored 50% and above while in FCC 93.2% scored below average and 6.8% scored 50% and above. Therefore, there is low knowledge of workplace accident causation in both companies. Considering the ILO estimate of global fatality level of work related accidents of about 270 million annually and 160 million workers suffer from related diseases. Workers knowledge of causes of workplace accidents is eminent in reducing this scourge.

Recommendations

In the light of the findings of this study, the following recommendations are made

1. workers at all levels be sensitized and trained on causes of workplace accidents
2. Pre-employment and pre- placement examinations and training on causes of workplace accidents be considered important and carried out during recruitment and before placements are done.
3. On the job trainings such as exposing workers to seminars, workshops that bother on workplace accidents causes be conducted at regular intervals
4. Discussions on causes of workplace accidents be done with workers of all categories at regular intervals in the workplace by accident and safety professional.

Suggestions for Further Studies

1. Workers' knowledge of prevention of workplace accidents.
2. workers' perception of causes and prevention of workplace accidents

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APPENDICES**APPENDIX 1****TEST QUESTIONS****DEPARTMENT OF HEALTH, ENVIRONMENTAL EDUCATION AND HUMAN KINETICS, UNIVERSITY OF BENIN CITY**

Dear Respondent,

This test is designed for a Post-graduate degree project work on Assessment of Workers knowledge of Causes of Workplace Accident: A case study of Setraco and Fountain Construction Companies in Bayelsa State. All information given will be treated with utmost confidentiality.

Your maximum cooperation is solicited.

SECTION A

Tick (✓) the most appropriate in this section

DEMOGRAPHIC INFORMATION:

1. Company's Name: Setraco () Fountain Construction Company ()
2. Highest Level of formal education or its equivalent. Primary (), JSS 1 – 3 (), SS 1 – 3 (), NCE/OND (), Degree (), Masters (), PhD (), none () Specify
3. Position held in the company: Site Manager (), Supervisor () Tool user () Supportive staff () Security () Driver () Specify
4. Length of service: less than 1 year (), 1 year (), 2years (), 3years () 4 years (), 5 years and above ()
5. Workers training: Workers are trained before engagement (), While in service () Not trained () Specify

Section B

Circle the most appropriate in this section

1. which among these is a main cause of workplace injury (a) repetitive movements (b) inhalation of hazardous substances (c) extremes of temperature
2. slips trips and falls are cause of (a) workplace injuries (b) workplace ill-health (c) workplace accidents
3. accidents occur due to (a) environmental factors (b) inhalation of hazardous substances (c) electricity
4. poor maintenance of equipment is (a) a cause of workplace ill-health (b) a cause of workplace injury (c) a reason why accidents occur
5. manual handling activities which involve moving a heavy load can lead to (a) knee injury (b) chest injury (c) back injury
6. what is the maximum weight an individual may lift (a) 35kg provided that it has no sharp edges (b) the weight one can lift comfortably (c) 15kg provided it has a compact load
7. exposure to asbestos can cause (a) dermatitis (b) asbestosis (c) asthma
8. one of the followings is a reason why accidents occur (a) use of hazardous substances (b) poor ventilation and lighting (c) slips trips and falls
9. in the workplace setting humans may be (a) causes of accidents (b) reason why accidents occur (c) cause of stress
10. workplace injury can be caused by (a) manual handling (b) noise (c) stress
11. stress is a cause of (a) workplace injury (b) workplace ill-health (c) workplace accidents
12. poor supervision could be one of the main (a) cause of ill-health in the workplace (b) reason why accidents occur in the workplace (c) effect of accidents at work
13. one of the reasons why accidents occur (a) noise (b) use of hazardous substances (c) human, occupational and environmental factors
14. one of the reasons why accidents occur (a) due to stress (b) electric shocks (c) inappropriate safe system of work
15. one of the reasons why accidents occur (a) employers refusal to put good finance to the organization (b) lack of workers' training (c) too much inhalation of dust

APPENDIX 2**ANSWERS PROVIDED**

1. A repetitive movements
2. A workplace injuries
3. A environmental factors
4. C a reason why accidents occur
5. C back injury
6. B the weight one can lift comfortably
7. B asbestosis
8. B poor ventilation and lighting
9. B reason why accidents occur
10. A manual handling
11. B workplace ill-health
12. B reason why accidents occur in the workplace
13. C human, occupational and environmental factors
14. C inappropriate safe system of work
15. B lack of workers' training

APPENDIX 3**FCC WORKERS 'SCORES AND PERCENTAGE SCORES FROM TEST (MCQs) ADMINISTERED**

S/N	SCORE	AGE	SERVICE	POSITION	GENDER	QUALIF	% SCORE
c1	7	29	5	SUPPORT	MALE	SSCE	46.67
2	5	32	2	SUPPORT	MALE	Degree	33.33
3	7	26	3	SUPPORT	MALE	SSCE	46.67
4	8	32	5	SUPPORT	FEMALE	SSCE	53.33
5	3	19	3	SUPPORT	MALE	SSCE	20.00
6	3	32	5	SUPPORT	MALE	SSCE	20.00
7	4	34	3	SUPPORT	MALE	SSCE	26.67
8	5	32	2	SUPPORT	MALE	SSCE	33.33
9	7	33	4	SUPPORT	MALE	Degree	46.67
10	6	18	3	SUPPORT	MALE	SSCE	40.00
11	3	38	2	SUPPORT	MALE	SSCE	20.00
12	3	23	2	SUPPORT	MALE	SSCE	20.00
13	3	29	4	SUPPORT	MALE	SSCE	20.00
14	3	32	2	SUPPORT	MALE	SSCE	20.00
15	6	43	5	SUPPORT	MALE	SSCE	40.00
16	7	24	2	SUPER	MALE	SSCE	46.67
17	5	40	2	SUPPORT	MALE	SSCE	33.33
18	7	33	3	SUPPORT	MALE	NCE/OND	46.67
19	4	28	4	SUPPORT	MALE	SSCE	26.67
20	7	28	3	SUPPORT	MALE	SSCE	46.67
21	4	26	3	SUPPORT	FEMALE	SSCE	26.67
22	6	37	5	SUPPORT	MALE	SSCE	40.00
23	3	31	3	SUPPORT	MALE	SSCE	20.00
24	8	28	3	SUPER	MALE	NCE/OND	53.33
25	5	32	2	SECURITY	MALE	PRIMARY	33.33
26	6	28	3	SUPPORT	MALE	SSCE	40.00
27	8	20	3	TOOL USER	MALE	SSCE	53.33
28	3	32	4	SUPPORT	MALE	SSCE	20.00
29	7	28	3	TOOL USER	MALE	SSCE	46.67
30	7	33	5	SUPPORT	MALE	Degree	46.67
31	7	43	3	SUPPORT	MALE	NONE	46.67
32	5	26	3	SUPPORT	FEMALE	SSCE	33.33
33	5	32	4	TOOL USER	MALE	SSCE	33.33
34	3	25	4	SUPPORT	MALE	SSCE	20.00
35	2	33	2	SUPPORT	MALE	SSCE	13.33
36	4	34	3	SUPPORT	MALE	SSCE	26.67
37	2	27	2	SUPPORT	MALE	SSCE	13.33
38	7	27	4	SUPPORT	MALE	SSCE	46.67
39	9	39	3	SUPPORT	MALE	Degree	60.00
40	5	28	2	SUPPORT	MALE	SSCE	33.33
41	6	19	2	SUPPORT	MALE	SSCE	40.00
42	7	32	3	SUPER	FEMALE	NCE/OND	46.67
43	2	24	-1	SUPPORT	MALE	SSCE	13.33
44	3	23	-1	SUPPORT	MALE	SSCE	20.00

APPENDIX 4

SETRACO WORKERS' SCORES AND PERCENTAGE SCORES FROM TEST (MCQs) ADMINISTERED

S/N	Score	Age	Service	Positon	Gender	Education	% of score
1	11	33	3	SUPER	MALE	Degree	73.33
2	6	24	3	TOOL USER	MALE	NCE/OND	40.00
3	8	34	3	DRIVER	MALE	SSCE	53.33
4	7	33	3	SUPPORT	MALE	NCE/OND	46.67
5	12	32	3	SUPPORT	MALE	Degree	80.00
6	5	45	1	SECURITY	MALE	PRIMARY	33.33
7	4	34	2	TOOL USER	MALE	SSCE	26.67
8	3	33	2	SUPPORT	MALE	PRIMARY	20.00
9	4	21	1	SUPPORT	MALE	SSCE	26.67
10	3	43	2	SUPPORT	MALE	PRIMARY	20.00
11	5	38	3	SECURITY	MALE	PRIMARY	33.33
12	2	33	2	TOOL USER	MALE	SSCE	13.33
13	4	25	1	SUPPORT	MALE	SSCE	26.67
14	3	23	1	SUPPORT	MALE	SSCE	20.00
15	10	37	3	SUPPORT	MALE	Degree	66.67
16	9	46	3	SUPPORT	MALE	NCE/OND	60.00
17	6	34	3	SUPPORT	MALE	SSCE	40.00
18	7	43	3	SUPPORT	MALE	NCE/OND	46.67
19	7	33	3	SUPPORT	MALE	SSCE	46.67
20	4	27	2	SUPPORT	MALE	NONE	26.67
21	6	25	2	SUPPORT	MALE	SSCE	40.00
22	4	26	2	SUPPORT	MALE	SSCE	26.67
23	4	28	2	SUPPORT	MALE	SSCE	26.67
24	3	34	2	SUPPORT	MALE	SSCE	20.00
25	3	33	-1	SUPPORT	MALE	SSCE	20.00
26	3	31	-1	SUPPORT	MALE	SSCE	20.00
27	4	35	1	SUPPORT	MALE	SSCE	26.67
28	5	25	1	SUPPORT	MALE	SSCE	33.33
29	5	28	2	SUPPORT	MALE	SSCE	33.33
30	6	19	2	SUPPORT	MALE	SSCE	40.00
31	7	32	3	SUPER	FEMALE	NCE/OND	46.67
32	2	24	-1	SUPPORT	MALE	SSCE	13.33
33	3	23	-1	SUPPORT	MALE	SSCE	20.00
34	5	52	1	TOOL USER	MALE	SSCE	33.33
35	2	23	1	SUPPORT	MALE	SSCE	13.33
36	3	43	1	SUPPORT	MALE	PRIMARY	20.00
37	3	33	1	SUPPORT	MALE	SSCE	20.00
48	6	40	3	SUPPORT	MALE	Degree	40.00
49	6	28	2	SUPPORT	MALE	SSCE	40.00
40	7	20	2	SUPPORT	MALE	NCE/OND	46.67
41	7	27	2	SUPPORT	MALE	SSCE	46.67
42	11	43	3	SUPPORT	MALE	NCE/OND	73.33
43	4	26	2	SUPPORT	MALE	SSCE	26.67
44	2	35	1	SUPPORT	MALE	SSCE	13.33
45	4	26	2	SUPPORT	MALE	SSCE	26.67
46	6	2	2	SUPPORT	MALE	SSCE	40.00
47	5	25	3	SUPPORT	MALE	SSCE	33.33
48	6	43	2	SUPPORT	MALE	SSCE	40.00
49	7	32	3	SUPPORT	MALE	SSCE	46.67
50	12	28	3	SUPPORT	MALE	NCE/OND	80.00
51	5	34	3	TOOL USER	MALE	SSCE	33.33
52	4	34	2	SUPPORT	MALE	SSCE	26.67
53	8	25	3	SUPPORT	MALE	SSCE	53.33
54	4	54	3	SUPPORT	MALE	PRIMARY	26.67
55	5	26	3	TOOL USER	MALE	NCE/OND	33.33
56	6	24	3	SUPPORT	MALE	SSCE	40.00
57	6	34	3	SUPPORT	MALE	NONE	40.00
58	6	31	3	SUPPORT	MALE	SSCE	40.00
59	6	37	2	SUPPORT	MALE	Degree	40.00
60	6	29	1	SUPPORT	MALE	SSCE	40.00
61	8	30	3	SUPPORT	MALE	SSCE	53.33
62	5	28	3	SUPPORT	MALE	SSCE	33.33
63	4	20	1	SUPPORT	MALE	SSCE	26.67

APPENDIX 5

PHOTO OF ACCIDENT (WORKPLACE)



IT CAN BE DEVASTATING AND DEFORMING AS THIS

APPENDIX 6

CALCULATION OF (COMPANY A) TEST- RETEST RESULTS USING PEARSON PRODUCT MOMENT CORRELATION COEFFICIENT (PPMCC) METHOD

S/N	X	Y	XY	X ²	Y ²
1	5	7	35	25	49
2	3	3	9	9	9
3	3	4	12	9	16
4	7	6	42	49	36
5	8	6	48	64	36
6	4	6	24	16	36
7	9	12	108	81	144
8	4	4	16	16	16
9	6	4	24	36	16
10	7	6	42	49	36
	Σx=56	Σy=58	Σxy=360	Σx ² =354	Σy ² =394

$$\text{FORMULA} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{N(\sum x^2) - (\sum x)^2} \times \sqrt{N(\sum y^2) - (\sum y)^2}}$$

$$r = \frac{10 \times 360 - 56 \times 58}{\sqrt{3540 - 3136} \times \sqrt{3940 - 3364}}$$

$$\sqrt{3540 - 3136} \times \sqrt{3940 - 3364}$$

$$r = \frac{352}{20 \times 24}$$

$$r = \frac{352}{480}$$

$$r = 0.73$$

$$r = 0.73$$

APPENDIX 7

CALCULATION OF (COMPANY B) TEST – RETEST RESULTS USING (PPMCC)

S/N	X	Y	XY	X ²	Y ²
1	5	7	35	25	49
2	3	3	9	9	9
3	3	4	12	9	16
4	7	6	42	49	36
5	8	6	48	56	36
6	4	6	24	16	36
7	9	12	108	81	144
8	4	4	16	16	16
9	6	4	24	36	16
10	7	6	42	49	36
	$\sum x=56$	$\sum y=58$	$\sum xy=360$	$\sum x^2=346$	$\sum y^2=394$

$$r = \frac{10 \times 360 - 56 \times 58}{\sqrt{3460 - 56^2} \times \sqrt{3940 - 58^2}}$$

$$r = \frac{3600 - 3248}{\sqrt{3460 - 3136} \times \sqrt{3940 - 3364}}$$

$$r = \frac{352}{\sqrt{324} \times \sqrt{576}}$$

$$r = \frac{352}{18 \times 24}$$

$$r = \frac{352}{438}$$

$$r = 0.80$$

$$r = 0.80$$
