https://doi.org/10.51483/IJAGST.2.1.2022.40-49 ISSN: 2710-3366

SvedbergOpen
DISSEMINATION OF KNOWLEDGE

International Journal of Agricultural Sciences and Technology

Publisher's Home Page: https://www.svedbergopen.com/

Research Paper Open Access

The African Employee and Industrial Accidents: Thematic Evaluation and Projections for Safer Workplace in Nigeria

M.C. Onyema[1*], N.C. Osuagwu[2], A.N. Okeke[3] and I.K. Gideon[4]

[1]Department of Forestry and Wildlife Technology, Federal University of Technology Owerri, Nigeria. E-mail: mac-anthony.onyema@futo.edu.ng
[2]School of Natural Resources and Environmental Management Technology, Imo State Polytechnic Umuagwo, Nigeria. E-mail: nathaniel91@gmail.com
[3]Department of Forestry and Wildlife Technology, Federal University of Technology Owerri, Nigeria. E-mail: angela.okeke@futo.edu.ng
[4]Department of Forestry and Wildlife, University of Uyo, Akwa Ibom State, Nigeria. E-mail: idorenyingideon@uniuyo.edu.ng

Article Info

Volume 2, Issue 1, May 2022
Received : 05 February 2022
Accepted : 19 April 2022
Published : 05 May 2022
doi: 10.51483/IJAGST.2.1.2022.40-49

Abstract

Accidents claim not only valuable assets but also human lives, most times involving professionals who do not have immediate replacement. To identify and evaluate industrial accidents in organizational firms, a health facility of a large public organization with over 368 employee engaged in production activities was targeted in Southern Nigeria. Preliminary desk review of within-organization's security structures, in-depth interviews of on-ground situation on accident trend at workplace in an associated forestry (wood-producing) outfit bordering the study area as well as questionnaire administration to 162 employee (low and middle class employee) were altogether employed to generate relevant information. Questionnaire covered forms of industrial accidents, causes, individual employee accident history and employee socioeconomic background details. Identified accident causes were subjected to Principal Component Analysis (PCA) using Varimax Orthogonal Rotation Method and scree plot to pin down top three forms of industrial accidents in the organization. In the results, six different forms of accidents were identifiable stemming from 10-13 varying causes. Major accidents reportedly result from employee operational attitude, technical errors and administrative lapses indicative of the level of preparedness and drive to control and manage emergencies and epidemics. The study therefore suggests public sector drive on work ethics, adherence and improvement in safety regulations and installations, frequent/periodic retraining as well as closer supervision of activity by superiors of all categories of employee.

Keywords: *Accident history, Installation, Supervision, Valuable assets*

1. Introduction

Twenty first century has experienced non-natural disasters which have largely been driven by wars, diseases, transportation vagaries and industrial activities including commercial and mechanized agricultural production processes. Disasters were originally seen to be directly associated with industrial environments and targeted mainly at workers in such environment (ILO, 1991). Over time, agricultural revolution, rapid growth and expansion of other non-industrial but productive sectors have increased awareness of existence of potential dangers even to people outside industrial work

* *Corresponding author: M.C. Onyema, Department of Forestry and Wildlife Technology, Federal University of Technology Owerri, Nigeria. E-mail: mac-anthony.onyema@futo.edu.ng*

areas. As an instance, the cheapness and ready availability of chlorine, ammonia and pesticides in many Third World countries and their usage in large quantities in industrial production processes often beyond permissible limits frequently cause accidents not restricted to the users and which also is accompanied with attendant release of persistent toxic and flammable toxic materials in the agro-ecosystem including health hazards in humans (Hough, 2014). Again, accidents which have resulted in similar release in the atmosphere include the Chynobl nuclear plant disaster in Ukraine, the Tsunami in Japan and the chemical poisoning outbreak in Bhopal, India in 1985.

Although public and private safety agencies measure the severity of incidents, accidents and other forms of disaster by the number of people killed, it is becoming increasingly important also to look at the number of persons affected. Across the global accident statistics, almost a thousand times more people are affected by disasters and pandemics than those killed in disaster incidences (Lechat, 1991). And for many of these people directly affected, survival after the disaster is low especially where permanent damages and health disorders are involved. The above situation is plausible for naturally-occuring cases. However, human-induced disasters especially chemical accidents (e.g. those triggered off as a result of spill-offs and biogenomic laboratory mismatch etc.) are worse off because their effects can sometimes manifest after years or even decades of such pandemics and disasters (Technical, 1991).

On the global scale, life span until the COVID-19 pandemic was generally improving and people were healthier compared to the situation decades ago. Nevertheless, increasing industrialization, weak healthcare facilities and under-development are having concomitant adverse consequences not only on industrial workforce involved in production-based activities which also has serious undertones for sub-regional and continental economic stability and development (HSA, 2007). These have been caused either directly by exposure to industrial hazards and harmful agents or indirectly through environmental degradation and cyclical effect of such chemicals. Accidents occur in every country and region of the world but it is however in poorer countries where comparatively more people tend to lose their lives in accident situations due mainly to poverty, ignorance and neglect of standards (Uduakobong *et al*., 2016).

Many governments have advanced the cause for making safety standards mandatory in industries and similar areas especially in enforcing aggressive protection protocols (Rikhardsson and Impgaard, 2004). This way, Germany, Japan, Sweden and Finland have reduced occupational accidents by about 65%-80%. Many African countries have shown less commitment in this regard especially after the onset of agricultural mechanization. In Nigeria, for instance interest and attention in oil and gas in the 1970s and the rapid growth of the sector in most developing countries perhaps is traceable as a historic milestone in necessitating attention to safety issues and to maintain the growth of production in the sector. Given the above scenario and the occurrence of new and emerging forms of industrial, health and agro-based hazards, an understanding of the cause and effect relation of the factors is required before improvement of safety processes can be underpinned (Battaglia *et al*., 2014). This paper aims to explore different forms of accident occurrence in industrial workplace and identify and categorize factors responsible for such incidents.

2. Theoretical and Empirical Framing

Asanga (1988) documented that high reliability on human fabrications and technological innovations are fallible and subject to degrees of failure. As a result, some researches on human behaviour parade a variety of questions seeking answers about human psychological influence on productivity under various stress and environmental conditions. Sinha *et al*. (2010) reposed that there is considerable confusion in studies conducted regarding the constructs of psychological climate and organizational culture, thus revealing need for researchers to use cognate terminology that is consistent with their level of measurement, theory and analysis.

According to Pure Change Theory, everyone among a given set of workers in a workplace has an equal chance of being involved in an industrial accident. This has become increasingly heightened among healthcare and social workers as they struggle with management of patients infected and/or affected by Covid-19. It is also implicated that there is no single discernible pattern of event or action that leads to accident (Saari, 1994). In the theory, all accidents are perceived as an act of god. Nonetheless, among poor communities and people, it is held that there exists no clear and demonstrable intervention to preventing accidents (Stellman, 1998).

The symptoms-versus-causes theory is not as much a theory as an admonition to be heeded if accident cause is to be understood. Usually, when investigating accidents, we tend to fasten up on the obvious causes of the accident and neglecting the root causes (McDonald *et al*., 2000). Unsafe employee working conditions usually are the symptoms of proximate causes but not root causes of accident. Accident proneness theory on the other hand maintains than within a given set of workers, there exists a subset of workers who are more liable to be involved in industrial accidents than others.

In theory, it is possible that accidents have potentials to affect every individual within a prone environment about the same manner and degree (Christian *et al*., 2009). Everybody learns by experience but it is impossible however for everybody to learn alike (Hansen, 1988). The worker who appears to be accident-prone on one job could have an excellent safety record on a different job. This is essentially the idea behind accident liability theory—a theory on individual's risk situation varying from situation to situation as well as over time. The overall rationale for training and education is to improve awareness of safety and health hazards, to expand knowledge of the causes of occupational illness and injury and to promote the implementation of effective measures. The specific purpose and impetus for training will however vary for different target persons. Education focuses on theory and practices. Training gets into the specification of how to turn principles into effective action (Geller, 2001).

Mack (2005) presented results of his study in which he revealed that management commitment to safety is a major factor in the success of safety programs. Organizations with a strong, safety climate and which have job-training programs, give executive authority to safety officials, have high-level managers on safety committees and consider safety in job design. Mack (2005) feels that attempts to improve safety-like net regulations or poster campaigns without management commitment will probably not succeed where necessary employee factors are not considered. Danger signals for work places (e.g., auditory danger signals) requires that any auditory alarm or warning be audible to all individuals in the workplace including those suffering from a hearing loss and/or wearing hearing protective devices, HPDs (Riggin, 1990).

Studies by Sanders and Mac-Cormick (1993) give indication of other salient issues considerable in evaluating and analyzing occupational accidents. These include levels of energy expenditure by workers per unit time, inherent strength limit of workers, endurance levels, speed in executing given task/assignment, accuracy and staff workload among others. Knowledge gained over time through similar research by experts has promoted the design of workplaces that maximize human performance and minimize fatigue and stress at workplaces.

The above study by Sanders and Mac-Cormick (1993) sought to minimize this problem by developing a composite measure of accident behavior called accident consistency variable. This is a mathematical quantity that estimates the number of accidents an employee is involved in the course of carrying out an assignment in relation to the number of years that employee incurred at least one accident. Each of these variables and quantities has been applied in past researches as can be seen in Hansen (1989). It is proposed that this composite variable reflects the consistency of one's accident tendency by adding a measure of temporal frequency (number of years with an accident) to a measure of quantity (number of accidents).

This measure appears to offer a close prediction of levels of accident projections in an organizational setting for mid and/or long term range. A worker who had a clean record except for four accidents in one year (365 days) may simply have had a good outing given prevalent economic issues and situations. That individual would possibly have a relatively poor bet to consistently have accidents in the future. On the other hand, the employee who had one accident in each of four years could be demonstrating a personal propensity to have accidents at a comparatively lower insignificant rate in the future. Both the short, mid and long-term implications of a worker's accident record are important to management in an organizational setting be it an industrial, agricultural or health sector given the dwindling financial and economic base of the country and increasing cost of replacing damaged assets/machines when accident occurs (HSE, 2013). Researchers hope to avert some of the forthcoming tragedies caused by industrial accidents influencing humanity in general and organizations and individual in particular. The study here is proposed to identify factors due to which accidents occur in large organizational outfits.

3. Study Style

The study was conducted at the clinic of the Nigerian Liquefied Natural Gas (LNG) Company in Onne, Rivers State of Southern Nigeria and the population of the study consisted of low and middle class employees (comprising technical and non-technical level manpower respectively). The above categories of staff are mostly culpable for industrial accidents at workplaces (Mills, 2002).

Preliminary survey carried out involved consultations with a cross-section of employees in a medium-scale wood processing outfit around the study area. The above outfit is engaged in secondary and tertiary level processing and finishing of different sizes and grades of wood from logs/timber using different machines. Therein, the above survey identified organizational-based causes of industrial accidents in medium to large scale outfits. Following this, about 14 broad categories were outlined as probable causes of accident as submitted by the above cross-section of employees. Further independent enquiry into causes of industrial accidents at the clinic of the Liquified Natural Gas (LNG) Limited involved interviews with personnel at the safety unit as well as desk review of relevant documents and information on

accident trend in their organization reposed in their library to authenticate the above results. The desk review obtained from published information on the safety operations of the industry was corroborated with preliminary survey information generated during the study.

The study adopted a survey research method in which structured questionnaire was administered to a sample of 221 randomly selected technical and non-technical staff (employees) of the LNG-owned clinic. The questionnaire was aimed to identify past history of the respondents' accident involvement and causes with a view to categorizing them and proffering workable solutions with inputs from the employees including professional level staff not administered questionnaires to. Out of a total of 221 respondents administered questionnaires, 162 of them were recovered representing 73.3% retrieval rate.

Data were obtained on the following: socioeconomic background of respondents and employee's accident history, frequency and causes of accidents at their various units. Principal Component Analysis (PCA) was used to estimate top causes of industrial accident in the organization. The analysis applied Varimax type of orthogonal rotation method to assure the appropriateness of the data collected. For factor analysis, tests of KMO and Bartlets were used. KMO index gave 0.974 and Bartlet's test yielded ax^2= 66778.88. Descriptive statistical analysis of the data involved determination of means, standard deviation, eigenvalue and percent variance of the responses and plotting of major accident causes using scree plot. Data obtained were thereafter subjected to inferential statistics by the use of spearman's correlation to determine the magnitude of association between the major identified causes (factors) and the respective response rates for the different categories of employees (accident victims and non-accident victims).

To determine top three (3) causes of industrial accidents, Cattell's scree test was used. On the basis of the scree plot, three factors were extracted. A cut-off point of 1.30 was taken from which the number of items in each of the three factors was read. For each factor, mean, standard deviation and variance were obtained.

4. Results and Discussion

In the result (Figure 1), about one-third (28%) of the employees in the organization had their employment/work record or history involving in one form of industrial accident or the other. After taking a cut-off point as defined above, the number of items in each of the three factors was read. The statistics of the socioeconomic parameters of the employee respondents obtained (mean, standard deviation and variance) are presented in Table 1 below.

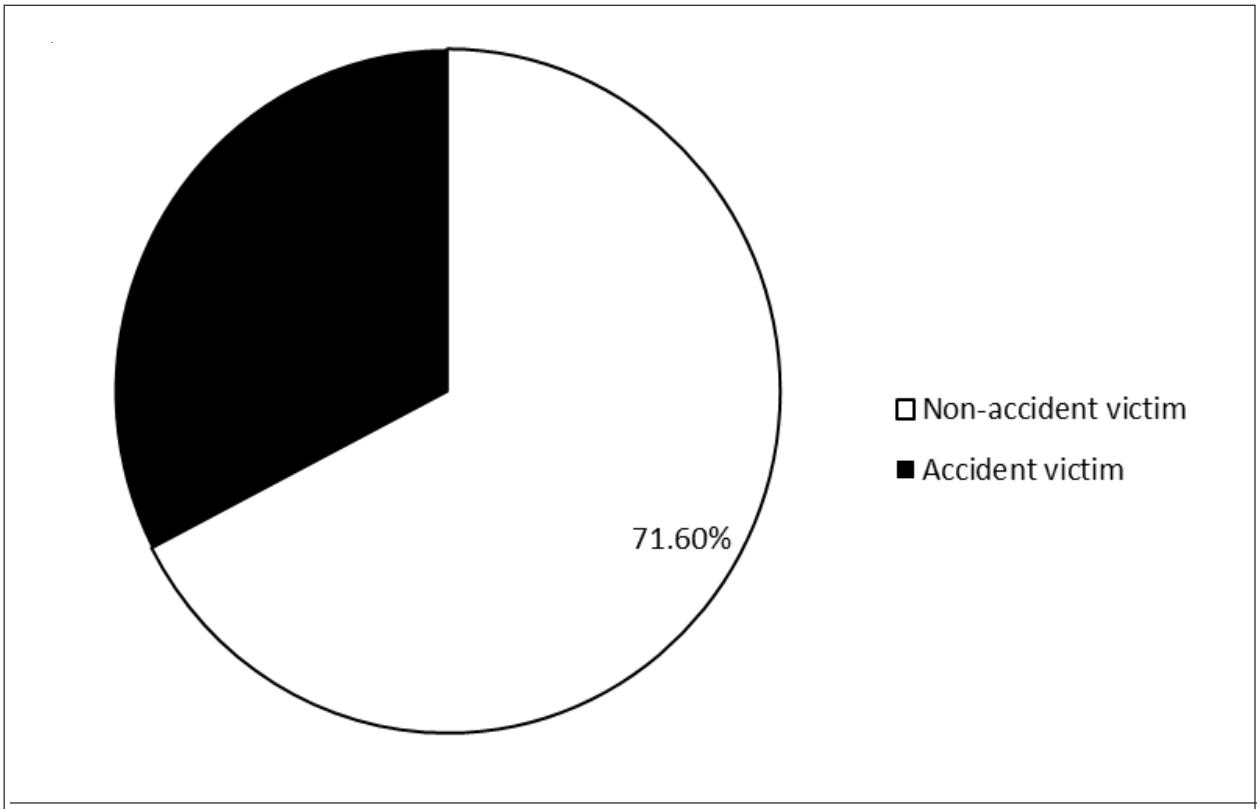

Figure 1: Pie Chart Showing History of Accident Cases Among Employees

The factors were labeled after a careful scrutiny of the items comprising each of the three factors.

1. Employee attitude: complacence in the adherence to routine organizational work procedure.
2. Technical error: Technical/machine inefficiency, servicing and replacement.
3. Administrative lapse: Poor management enforcement of procedures.

Table 1: Socioeconomic Characteristics of Accident Victim Employees in Industrial Workplace

Variable	Minimum	Maximum	Range	Mean	Std. Dev.
Age	25	60	35	49.6	16.39
No. of trainings undertaken on the job	1	5	4	2.11	1.46
Job experience in LNG (years)	3	13	10	8.23	3.74

Some documents as contained in HSA (2007) and Adeyeye *et al*. (2015) have reported how a slight negligence of staff in an organization can crumble the fortunes of a large reputable outfit. In the light of the above, the number of employee (about 46) who were reportedly at one time or another over a period of two (2) years been accident victims is worthy of note. This is a litmus test of the level of enforcement and compliance to standards in public institutions in Africa.

Industrial accident occurrence spans between wide age brackets involving both youths and the aged. Again, irrespective of the length of experience on the job (maximum 41 years), accident occurrence rate among employee is reportedly inevitable even in large organization. There must have been a missing link/disconnect in progress marking on industrial safety regulation and compliance among different categories of staff in Nigerian workplace.

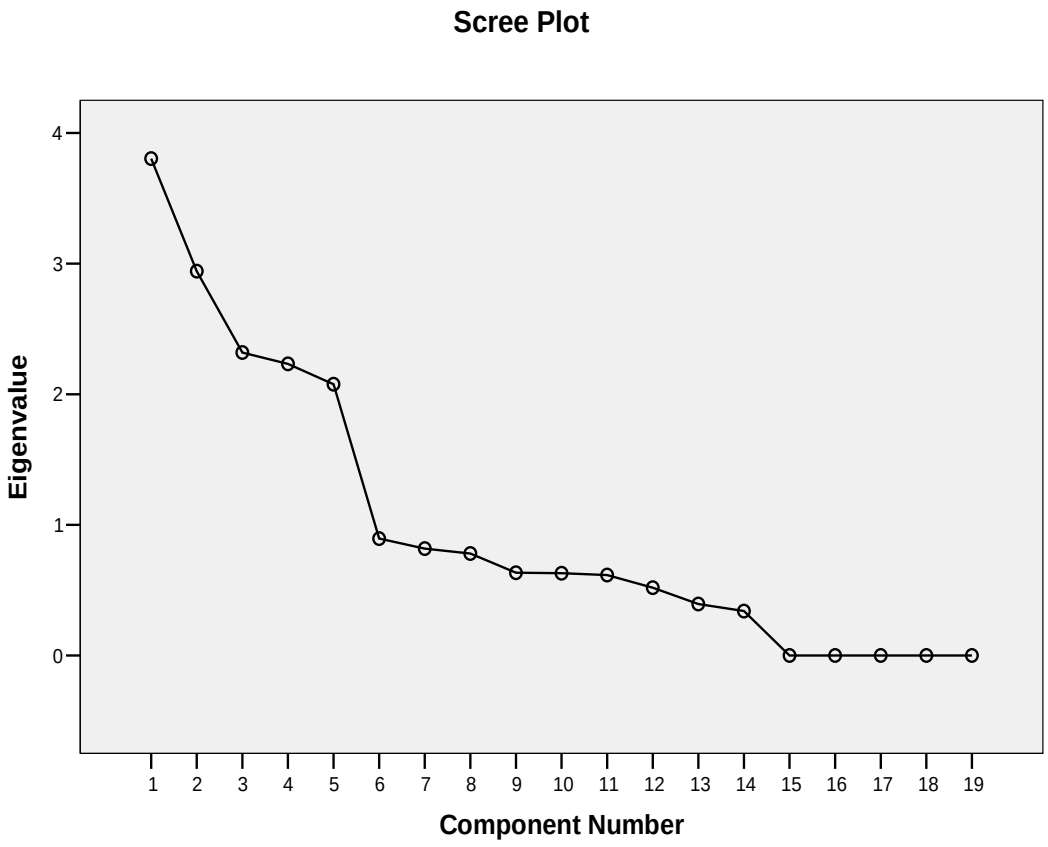

Figure 2: Curve Showing the Screen Plot of Eigenvalues on the Number of Components (Principal Component Numbers) of the Identified Accident Factors

Table 2: Eigenvalue and Statistical Details of the Factors of Principal Component

Factors	No. of Items	Mean	Eigenvalue	Std. Dev.	Variance
1.	71	29.4	2.58	16.39	21.99
2.	40	11.05	1.83	4.06	16.25
3.	16	19.98	1.28	10.67	9.96

Note: 1 = Employee Attitude 2 = Technical Error 3 = Administrative lapse.

Table 2 gives details of the principal components in industrial accident evaluation. Technical error, attitude of the employee to work as well as some observed lapses in administratively enforcing safety regulation were major identified causes of accidents in the workplace. Their levels of occurrence and influence however varied. Highest mean value (29.4) was recorded for employee's attitude to work followed by administrative lapses (Mean= 20) and technical errors (Mean=11.1). The coefficients of association (r) obtained among pairs of the above three identified principal factors are shown in Table 3.

Table 3: The Reliability Table Showing the Correlation Coefficient of Pairs of Identified Accident Causative Factors by Different Categories of Employee

Parameters		Correlation Coefficients				
		Factors	Between Pairs	Spearman	Guttman Split-half	Alpha Cronbach
Sample	Factor 1	FI(71)	0.9218	0.9593	0.9579	0.9862
	Factor 2	F2(40)	0.828	0.9059	0.9045	0.97
	Factor 3	F3(16)	0.7678	0.8686	0.8681	0.9445
Accident Victims	Accident-proneness for a given factor	F1(67)	0.9247	0.9609	0.9595	0.9858
	Involved	F2(42)	0.8157	0.8985	0.897	0.9703
	Sample	F3(23)	0.8047	0.892	0.8914	0.9566
Non-Accident Victims	Non-Accident proneness for a given factor	F1(73)	0.9223	0.9594	0.9594	0.9865
	Involved	F2(34)	0.842	0.9142	0.9131	0.967
	Sample	F3(9)	0.7796	0.8773	0.8709	0.904

In the result, it can be observed that the two categories/groups of industrial employee (those with past history of industrial accident and those without past history of industrial accidents) tend to have expressed almost parallel views given the values observed from the above top three factors. The remaining items in each of the three factors along with their loading factors, mean and standard deviation for the sample of 162 showed items with loading factors less than 1.00 have been divulged from each of the three factors. Hence, Factors 1, 2 and 3 and their respective coefficients above have values which are above the earlier cut-off values of 1.30.

Two identified factors: employees' attitude (complacence in adherence to routine organizational work schedule) and administrative lapses (poor management enforcement of procedures) are largely human factors which are in harmony with the findings of other researchers such as Rajendran and Raduan (2005) and Muafi (2011). The identified factors show that a major part of industrial accidents are traceable to human errors, actions and inactions. This is in line with the views of Hansen (1989) and Stellman (1998). On technical/machine errors, non-standard tools, machines and equipment,

shortages of safety and protective tools/equipment were some of the specified causes reposed by the respondents during the field study.

Jones (1991) described how human industrial accident occurrence and phenomenon can be psycho-somatic linked. If such becomes the case as can be linked to some particular group/category of employee, such a situation could become mind-bugging especially to temperamental organizational manager with regards to the future of their enterprise. To another manager, this could be translated in terms of absent-mindedness and/or mental distraction as well as lack of concentration on the job which affect employee performance on the work. From the reports on the interview of some senior management staff of the organization, highlights were submitted on difficulties of manpower management in organizations which stemmed from three major sources:

In the matrix as contained in Table 4, major results for each extracted component (Factors 1, 2 and 3) are respectively poor training (0.698), family and psychological stress (0.704 and 0.680) and fatigue (0.554).

(a) The first category of factors (which is attitudinal) is related to the personal and individual characteristics as well as psychological and/or physical movements of the employees in relation to his/her job. This implies that of about 71% of industrial employees of an organization, there is possibility of their not having the needed potential, ability and acumen such as rhythm and harmony of the eyes, hand/foot or enough flexibility of the limbs involved in doing a given productive job. Hence, that a given employee has not been involved in industrial accidents does not negate that he/she cannot be a potential victim tomorrow from the result of the above. If this is true, further involvement of manpower in accidents in such and/or similar organization is inevitable. Hence, an employee needs some requisite/ fundamental knowledge, experience and skill either before employment or granted on the job. Playing down on this essential consideration would possibly heighten the risk of accident involvement for the employee pose potential risk for other employee on duty and can truncate the realization of the vision of an organization.

Table 4: Summary of Component Matrix of Some Major Observed Causes of Accident as Reposed by Respondents

	Components				
	1	2	3	4	5
Poor training	0.698				
Financial	0.631				-0.309
Technical Malfunction	0.622				
Stress	0.572				
Complacence	0.519		0.326		-0.333
Low supervision	0.486		-0.471		0.333
Family issues		0.704			
Psychological		0.680		-0.306	
Inherent personal attitude		0.606			-0.404
Organisational		0.399	0.357	-0.331	
No life insurance package	0.531		-0.627		
Fatigue			0.554		
Much work schedule	0.366				
No motivation		0.413		0.515	

Extraction Method: Principal Component Analysis.

Note: [a] 3 components extracted.

(b) The second reason meriting concern as reported by the respondents (accident victims and non-accident victims) is connected within or away from work place. Emotionally and psychologically as presented by most interviewers as well as family conditions in some ways are maladies which feelings such workers tend to carry through from and into work situation. These can be in forms of insurmountable thoughts about a family problem, job dissatisfaction, feeling of injustice and discrimination, arguments with supervisors, colleagues and employees all of which predispose the employee to not only low productivity but incessant accidents. This has been identified among public and private outfits in most developing countries (Vinodkumar and Bhasi, 2009).

© Next in the outlined issues raised is negative attitude to safety and absence of motives to safety regulations. This is often borne out of the risk of negative attitude sprawling in an organization and an employee showing inclination towards an unprofessional, suspicious or risk-cloned outlook, behavior or manifestation. Resultantly, there is a preconception of declined motivation first to work ethics and associated safety codes in accordance with rules and regulations.

Close study of the key results and inferences obtained from the study informs the inclusion of the following actionable points below.

- Provision of routine (possibly fortnight) training by certified safety experts for different categories of personnel in organizational work. This will include vocational, middle class as well as professional level manpower.
- Periodic psychological test of employees. This will involve giving periodic talks aimed at relieving tension-prone/ frightful employee from fear of threats and existence of stress problems at work places. Most management staff under-value the role of clinical psychologists in their manpower training, organizational growth and development.
- Providing job satisfaction and motivation for employees. This can involve formalization and documentation of welfare packages after retirement, provision of incentives and free health checks at work for the employee and their dependents.
- Management insistence on fairness and equal opportunities for all employees especially in terms of training and promotions. This should be without bias and devoid of any form of sectionalism and selectivity.
- Assigning each employee to an active, experienced and dependable superior who oversees that the former learns in even less formal and closer arrangement after the general organizational training. Such superior supervising officers will be directly responsible for the employee and ought to provide day-to-day reports on progress or otherwise made by such employees in terms of safety records.
- Minimizing to the barest minimum unrewarded overtimes by employees. This brews dissatisfaction.
- Providing suggestion channels to receive employees' suggestions and timely attending to each one of them no matter how irrelevant.
- Enforcing compliance of employees to use safety/protective facilities always especially at workplace.
- Regular servicing and maintenance, control and inspection of machines, tools and equipment by accredited companies.
- Providing medical facilities on site of work/operation with high accident risks.
- Improving and/or redesigning standard distance and space between machines and equipment in all units and cases.

5. Conclusion

Industrial accidents occur in Nigeria even in large public organization. Like it is the case globally, the incidence is at different scales and in response to the degree of attention and interest placed on management, productivity and development. A variety of reasons accounts for the type and scale of industrial accidents in Africa. This, as it directly involves middle and low class manpower in large organizations, is categorically tied to attitudinal, technical and administrative reasons. This development though unpalatable are not altogether insurmountable because most industrialized nations have overcome same problems and have become lessons for stepping up industrial growth and productivity in African workplace. Trainings, better management of employee psychology, provision of incentives and relationship-based labor deals rather than boss-servant or command and control method are advocated. Nigeria can proudly set at least within the West African sub-region the pace for safe and productive industrial growth at high efficiency and at minimal loss.

References

Adeyeye, J.O., Adeniji, A.A., Osinbanjo, A.O. and Oludayo, O.A. (2015). Effects of workplace ethics on employees and organizational productivity in Nigeria. *International Conference on African Development Issues* (CU-ICADI). Social and Economic Models for Development Track. 267-273.

Asanga, P.M. (1988). Availability and Safety Study of an Oil Refinery. The Availability and Safety Behaviour Since Commissioning in 1980 of the Kaduna Refinery: Importance and Effects of Human Factor. University of Brandford.

Battaglia, M., Frey, M. and Passetti, E. (2014). Accidents at Work and Cost Analysis: A Field Study in a Large Italian Company. *Industrial Health*, 52(4), 354-366.

Christian, M.S., Bradley, J.C., Craig, J. and Michael, J. (2009). Workplace safety: a meta-analysis of the roles of persons and situation factors. *Journal of Applied Psychology*, 94(5), 1103-1127.

Geller, E.I.S. (2001). *The Psychology of Safety Handbook*, Boca Raten, FLI Lewis Publishers.

Hansen, C.P. (1988). Personality Characteristics of the Accident Involved Employee. *Journal of Business and Psychology*, 2(4), 346-365.

Hansen, C.P. (1989). A Causal Model of the Relationship Among Accidents, Biodata, Personality and Cognitive Factors. *Journal of Applied Psychology*, 74(1), 81-90.

Hough, P. (2014). The Tending and Use of Agrochemicals. In Sustainable Food Production: Includes Human Health and Environmental Health. Campbell, B. and S. Lopez-Ortiz (Eds). *Issues in Agroecology: Present Status and Future Prospects*, 1-41, Middlesex University Research Repository. ISBN 9789400774537, Springer.

HSA (2007). The Costs and Effects of Workplace Accidents: Twenty Case Studies from Ireland. Health and Safety Authority (HSA) Research Services 02/2007. 130.

HSE (2013). Reporting Accidents and Incidents at Work. A Brief Guide to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR). *Health and Safety Executive*, 1-5.

ILO (1991). Prevention of Major Industrial Accidents. International Labour Organisation Office, Geneva. 76.

Jones, J.W. and M.W (1992). Job Stress and Employee Counterproductivity. In: JC Quick, L.R. Murphy and J. J. Burrell, Jr (Eds). Stress and Well-being at Work. Assessments and Interventions for Occupational Mental Health. American Psychological Association, Washington DC, 239-251.

Lechat, M.F. (1991). The International Decade for Natural Disaster Reduction: Background and Objectives. *Disasters*, 14, 1-6.

Mack, J.A. (2005). The Law of Bullying: Of the Playground and into the Workplace. *Bench and Bar of Minnesota*, 62(8), 20-24.

McDonald, N., Corrigan, S., Daly, C. and Cromie, S. (2000). Safety Management Systems and Safety Culture in Aircraft Maintainance Organizations. *Safety Science*, 34, 151-176.

Mills, C.W. (2002). *White Collar: The American Middle Classes*, Oxford University Press. p. 416.

Muafi, J. (2011). Causes and Consequences of Deviant Workplace Behavior. *International Journal of Innovation, Management and Technology*, 2(2), 123-126.

Rajendran, M. and Raduan, C.R. (2005). Typology of Organizational Commitment. *American Journal of Applied Sciences*, 26(17), 1078-1081.

Riggin, R.E. (1990). *Introduction to Industrial/Organizational Psychology*. Illinois, Scot, Foreman and Company.

Rikhardsson, P.M. and Impgaard, M. (2004). Corporate Cost of Occupational Accidents: An Activity-based Analysis. *Accident Analysis and Prevention*, 36(2), 173-182.

Saari, J. (1994), *Accident Prevention*, 4th Edition, Chapter 56. Encyclopedia of Occupational Health and Safety. International Labour Office (ILO).

Sanders, M.S. and McCormick, E.J. (1993). *Human Factors in Engineering and Design*, (7th ed.). New York, NY: McGraw Hill.

Sinha, S., Singh, A.K., Gupta, N. and Rajul, D. (2010). Impact of Work Culture on Motivation Level of Employees in Selected Public Sector Companies in India. *Business Review*, 11(1), 43-54.

Stellman, J.M. (1998). *Encyclopedia of Health and Safety* (4th Edition). Geneva: International Labour Organization.

Technical (1991). Lessons Learnt from Emergencies After Accidents in the United Kingdom Involving Dangerous Chemical Substances. London. Technical.

Uduakobong, F.U., Edidiong, E.U. and Asuquo, C.F. (2016). Effect of Lack of Adequate Attention to Safety Measures on Construction Sites in Akwa Ibom State, Nigeria. *Journal of Earth Sciences and Geotechnical Engineering* 6(1), 113-121.

Vinodkumar, M.N. and Bhasi, M. (2009). Safety Climate Factors and Its Relationship with Accidents and Personal Attributes in the Chemical Industry. *Safety Science*, 47(5), 659-667.

Cite this article as: M.C. Onyema, N.C. Osuagwu, A.N. Okeke and I.K. Gideon (2021). The African Employee and Industrial Accidents: Thematic Evaluation and Projections for Safer Workplace in Nigeria. *International Journal of Agricultural Sciences and Technology.* 2(1), 40-49. doi: 10.51483/IJAGST.2.1.2022.40-49.