

Management of Designed Safety Adherence Model for the Nigerian Work Environment

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ABSTRACT Studies on management of the designed safety adherence model in Nigerian workplace environment revealed that there is an inter-relationship between adherence to safety rules and regulations and good work environment which invariably affect performance positively. Steps taken to develop the model putting into consideration the variables of safety environment and activities that will help achieve adherence were brought to the fore. The study population was two hundred and twenty-four (224) manufacturing firms in the south-east zone of Nigeria. From this, a sample size of one hundred and eleven (111) firms was drawn, using the Taro Yamane Formula for random sampling. The five points scale Likert questionnaire was the primary data collection instrument. The secondary data was obtained from the review of relevant literatures on the subject matter. Effective numbers of respondents for the study in each of the firms were twelve (12). Questionnaires were administered on the top management, middle and lower management staff of each of the sampled firm. The research design adopted was the descriptive survey research using averages, percentages and the Z-test statistics, for one tailed test, with a level of significance $\alpha = 0.05$ and Z (critical value) of 1.645. Findings reveal that investment in safety and environmental programmes is a sound business strategy, for any organization regardless of size, and will lead to a positive impact on the financial bottom line.

INTRODUCTION

Today, the matter of work-force safety at work is receiving worldwide attention. There is a high rate of industrial accidents and large-scale absenteeism occasioned by ill health (Kohn and Mark 1996: 88). Some jobs are very hazardous and the common law requires every employer of labour to ensure that the work-force is safe and that employees doing hazardous work are protected adequately. In that case, safety at work should be vigorously pursued as a clear means of enhancing efficiency and quality of performance (Eze 2006: 304). Providing working conditions that promote the safety of employees is therefore becoming a major management concern. Barriers are introduced in the form of guards, clothing, protected areas and the like. Perhaps, equally important, reducing the accident potential of a work environment tends to increase the feelings of security and reducing anxiety levels. This in itself makes people less likely to have accidents because they are no longer distracted by their anxieties. Companies also use publicity campaigns, involving various personnel communication media and contests to promote safety (Cole 1993: 27). Contests typically provide financial reward to members of

groups with low accident rates. The focus of these contests and the measures employed can vary considerably, but the essential ingredient is the idea that it pays to be safe. The result, as in many other incentive type programs, is positive.

However, the labyrinth of safety laws and regulations has also risen in response to the historical pattern of corporate resistance in adopting comprehensive, proactive safety policies and in providing adequate compensation once an injury has occurred. There is a marked tendency for businesses to do as little as possible in these areas until prodded by laws or organized labour (Handula 1997: 98). Historically, many of the important developments in promoting industrial safety were initially implemented at the state level. Massachusetts, then the leading textile production centre in the United States, was the first state to introduce industrial safety measures. It introduced factory inspection in 1867, established the Bureau of labour statistics in 1869 to study factory accidents, and enacted the first legislation requiring protective guards over dangerous machinery in 1877.

In the modern context, corporate management increasingly has viewed industrial safety measures as an investment, one that may save

money in the long run by way of reducing disability pay, improving on quality performance and avoiding lawsuits. This approach lends itself to greater professionalization of safety management, instead of rote compliance, and to more proactive policies. Rather than viewing an injury as a fluke or a random mistake, management today is more likely to work for systemic problems such as ways by which equipment is designed or used, the way workflow is configured, how workers are trained, whether unsafe behaviours are tacitly encouraged by other corporate practices or goals, and whether there is a gap between official policies and employee practices.

Whenever accidents occur in the work place, conscious efforts should be made to see that they are promptly investigated and evaluated in order to establish why they occurred, where and when they occurred, and persons who are involved. The reported case of recent massive fire disaster in a rubber manufacturing plant in Ikorodu, Lagos State (Ahiane and Nwabuwe 2002: 1) is a good case in point. The State Government quickly set up a probe to enquire into the disaster. If factory inspectors were doing a good job, the plant would not have been in as poor sanitary condition as was discovered by the team of investigators. About 2.2 million people die of work-related accidents and diseases annually worldwide (Somavia 2008: 74). An estimated number of 270 million people also suffer from non-fatal, work-related accidents which results in at least three day absence from work (Somavia 2008: 79). The international labour organization in a report to mark world day for safety and Health in the year 2008, stated that an additional 160 million new people suffer from work-related illness. Millions of work-related accidents, injury and disease annually take their toll on human lives, business performance, economy and the environment (ILO 2002: 1).

Understandably, Nigeria usually trails after British arrangements. In Britain, an employer has a common law duty to provide a safe place of work for his employees and is liable at common law, for accidents suffered by his employees as a result of negligence. The key statutory duties of employers arise from the Factories Act of 1961, Office, Shop and Railway premises Act of 1963, and Health and Safety at work Act of 1974. Recently, an occupational health and safety management standard (OHSAS) of 2007 was devel-

oped by the OHSAS Project Group, a consortium of 43 organizations from 28 countries. This consortium includes national standards bodies, registrars (certification bodies), organizational health and safety institutes and consultants. This new OHSAS 2007 standard was officially published in July 2007. It replaces OHSAS, of 1999. Since it was first published in 1999, OHSAS has rapidly become the most widely used international Occupational Health and Safety Management standards. OHSAS applies to all types of organization. It does not matter what size they are or what they do. The purpose of OHSAS is to help organizations to manage and control their Occupational health and safety risks and to improve their performance. They can achieve this purpose by developing an occupational health and safety Management standard system that complied with OHSAS.

Problem Statement

In today's workplace, whether it is on a plantation, in an office, factory, institutions, etc. every worker across the globe is faced with a multitude of health hazards such as dusts, gases, noise, vibration and extreme temperatures. This invariably affects performance owing to absenteeism triggered by ill-health. Unfortunately some employers assume little responsibility for the protection of workers' health and safety. Our attempt at modeling industrial safety management is to use it at a fore, against which to compare and understand the status and problems of adhering to safety management rules and regulations in the Nigerian manufacturing sector, in order to proffer solutions.

Research Questions

The above statement led to the following research questions:

- ♦ What impact does environmental management exert on safety programmes implementation as a guide to increase performance?
- ♦ To what extent do training and orientation influence the implementation of safety programmes in manufacturing firms thereby raising the performance level?
- ♦ To what extent does adoption of safety management adherence model influence the implementation of safety programmes in manufacturing firms?

Objectives of the Study

The comparison of the firms with one another in order to access and ensure the applicability of safety programmes as a tool of quality performance is an aspect of the study. To this end, the objectives of the study are:

- ♦ To examine the link between environmental management and applicability of safety programmes in manufacturing firms.
- ♦ To ascertain the extent to which training and orientation influence safety programmes implementation in manufacturing firms.
- ♦ To ascertain the extent to which the adoption of safety management adherence model influence safety programmes implementation in manufacturing firms.

Theoretical Framework and Model Development

According to Ouchi (1981: 57-58), a model is an abstraction from reality. It is a bare-bone attempt to layout the important and distinctive feature of a thing, so that we can readily appreciate its uniqueness. Though often criticized as an "Oversimplification" of a complex scenario, a model describes the distinctiveness and uniqueness inherent in a complex phenomenon.

Industrial Safety Management Models Across Countries and International Best Practices

The key to safety in the workplace is to get everyone involved from the top level to the lowest employee (Cooper 1997: 167). Getting senior management involved has 12 and 17 percent direct impact on safety performance, which is vital to organizational success. "There is no such thing as rank when it comes to safety. It is not us and them, it is partnership. You need to set a specific target for each work group and give weekly feedback to everyone involved" (Cooper 1997).

Cooper (1997: 215) in comparing workplace safety around the world, observed that Europe is way ahead of the United States. They take industrial safety much more seriously in Europe, where workplace accidents are less acceptable. They are even considering a law that a Chief Executive Officer can go to jail for 10 years if a worker is killed due to a mismanagement of the system. This implies that CEO's cannot turn a

blind eye to safety. Cooper has received national awards for developing safety programs in Great Britain. By using his methods, one industrial company previously experiencing 319 accidents in a year, were able to reduce the level of accident by more than 50% in nine months. Two years later, there were 26 such accidents. In some cases his consulting advice has resulted in a reduction of the accident rate to zero within 12 to 18 months. In America, Employee safety and health are important concerns in their organization. For example, the National Safety Council estimates that 11,100 deaths and 1.8 million disabling injuries resulted from occupational accidents in 1987; the associated total work accident cost was estimated to be over \$42 billion.

As early as 1970, new cases of occupational diseases were estimated to exceed 300,000 each year. As reflected by these figures, the costs associated with workplace injuries or illnesses are high. Other indirect costs include employers' costs for health insurance and workers' compensation. For example, employee health care costs represented 9.7% of total payroll costs in 1987. These costs vividly illustrated an incentive for organizations to reduce work-related injuries and illnesses and to improve overall employee health.

Applicability of Safety Management in Manufacturing Firms in Nigeria

In Nigeria, in order to ensure the growth of a culture of safety among workers, Nigeria Breweries PLC, launched its own safety health and environment policies handbook. The Chief Executive Officer (CEO) of the company, Michael Herkemij, explained that it is important for the organization to ensure the safety of the employees and also improve the condition of their work environment (cited in UNEP 2007).

According to Herkemij, achieving environmental sustainability requires carefully balancing human development activities while maintaining a stable environment that predictably and regularly provides natural resources (cited in UNEP 2007). This, he noted, is the high point of article seven of the United Nations Millennium Development Goals (MDGS). The safety policy of the company addressed the issue of accidents at work arising from production pressure and noise pollution, which poses a threat not only to factory workers but also to other

people in surrounding areas. He stated that companies should not only treat safety as a priority but as a core value. Whereas priorities change with time, core values remain static. Safety he said is not a cost centre but a profit centre. Safety reduces cost while maintaining the same revenue (cited in UNEP 2007). According to him, Nigerian Breweries believe that "good health and safety management improves their performance and shareholders profits".

World Health Organization (WHO) according to Olusanya (2007: 35) reports that 278 million people in the world have hearing problems. Developing countries, according to her, account for 75 percent of this figure. She regretted that many Nigerians are exposed to occupational noise and are unaware that it can damage their hearing organs. She noted that good hearing is essential to meaningful verbal communication. Recounting the history of industrial revolution of 18th century as it concerns safety and quality performance, Olusanya asserts that the introduction of safety system has improved performance further by providing assurance that technology and standards were applied consistently.

Unilever as a company, places a premium on a healthy workplace. It is in this light that it ensures and sustains healthy environments in all its areas of operation. A full fledged industrial Clinic providing 24-hours medical services to all employee's is operated in each factory location of the Company. Reputable private clinics are also retained throughout the country to attend to the medical needs of their staff. Safety and good housekeeping are taken seriously in Unilever, with everyone involved.

Training

The company takes training very seriously and it is one of the annual performance indicators. In 2006, about 45 million naira was spent in training their managers and staff. Apart from on-the-job training which is an on-going feature, in-house courses are organized by their Training/Learning Department in line with the training needs analysis of individual employees. Well-trained managers organize in-plant process training courses in all the factories across the business. Employees are sent for external courses run by Unilever International and reputable training providers to supplement the in-house

programmes. Overseas training also, enjoys a pride of place in the scheme of things. This embraces internationalization, which enables' our employees to work in some sister companies abroad for a period of time in exchange with theirs.

Larfarge WAPCO Cement Nigeria Plc recently for three days, June 23, 25 and 27, 2008 had cause to celebrate safety conscientious. According to Lourandos (2008: 24), "Safety for Larfarge staff is safety for its immediate family and the nation". He told his staff that there is a need to change their behaviour while carrying out their task. He emphasized that the company would continue to improve and ensure that zero per cent accident fatality rate is achieved, as safety is everybody's job and concern. Akinola, the chairman of the company posits that there comes a time when the state of affairs of any nation or company has to be laid bare, the past evaluated, the present analysed and the future re-strategized, and strategic decisions taken for better performance and happier people. The celebration was what the company required to exhibit its safety consciousness against eventualities. The safety consciousness campaign took the company to align with its employees in its plants in Ewekoro and Sargamu all in Ogun state to showcase the need for consciousness to safety and improve performance.

Influence of Environmental Management on Applicability of Safety Programs in Industries

Goetzel (1999: 197) has introduced a method called "Health performance Management", which is aimed to establish links between today's business climate, people, operational challenges and ultimately the performance of an organization. The method is based on the idea that improving worker safety is directly related to how productive and profitable organizations can become. The American Society of Safety Engineers (ASSE 2002: 208) has produced a white paper addressing the return on investment for safety, and environmental management programmes. The white paper argues that the ASSE knows from data and anecdotal information that investment in a safety and environmental programmes is a sound business strategy for any organization regardless of size, and will lead to a positive impact on the financial bottom line. The white paper presents the (hidden) costs of a failed safety system, examples of companies and the

positive outcome of programmes that are aimed at improving safety at work. The programmes presented include the voluntary protection programmes (VPP) and the Agency e-CAT initiative.

At the Monsanto chemical company Pensacola, Florida plant that has 1600 workers, the lost workday case rates steadily declined during the period in which the worksite implemented effective safety programmes and in the four years since approval to the VPP. The rates fell from 2.7 in 1986 to 0.1 in 1994 (ASSE 2002: 205). A coal-mining company in Charleston West Virginia has attained a competitive advantage through investment in safety and environmental programmes. The company claims its worker compensation rate is USD 1.28 per USD 100 in payroll as opposed to its competitor's rate of USD 13.78. Participants in the Agency's voluntary protection programmes has saved one company USD 930,000 per year and company had 450 fewer lost-time injuries than the industry average (Kaplan and Norton 1992: 487). In Britain, a Court (2003: 97) argued that creating better work environments and preventing harm from work are key means of improving performance. The evidence that is presented is based on national data for United Kingdom work-related injuries, diseases and their impact on absenteeism and the costs for society and companies.

Influence of Training and Orientation on Safety Management

Training and human resource development plays a critical role in promoting health and safety awareness among employees. The 1974 Safety Act requires employers to provide instruction and training to ensure the health and safety of their employees. Bratton and Gold (1999: 283) opined that safety training for new employees is particularly beneficial because accidents are highest during the early months on a new job. The costs of ill-health and work-related accidents are not only borne by the victims, families, and their employers, but are also borne by the taxpayer and public sector services. A recent official survey in United Kingdom put the costs to society for deaths and accidents (excluding occupational disease) in British workplaces at £10-15 billion or 1.75 per cent of the Gross Domestic Product (Bain 1997: 177). It was assumed by most employers, the courts and ac-

cident prevention bodies that most of the accidents were due to an employee's failure to take safety seriously or to protect him or herself. The implication of this is that work can be made safe simply by changing the behaviour of employees by poster campaigns and orientation. Cullen (1986: 79) opined that one way to obtain compliance with safety regulations is through enhancing employee's knowledge, understanding and commitment, which can be achieved through safety programmes.

Research Design

This study involves the survey research. It investigates the designed industrial safety management model through the link between environmental management and safety implementation as it affects performance, training and orientation as it affects safety management implementation in manufacturing firms in South Eastern States of Nigeria and the prospects of adopting the adherence model and the benefits derivable. Secondly, it involves the collection and collation of data to facilitate answers to the research questions.

Model Development

This model (Fig.1) gives a qualitative overview of the impact of safety management on quality performance of manufacturing firms. It indicates that safety measures implementation has an influence on company performance. External variables were taken into account while the model was being developed. The model is focusing on the analysis of the relationship between safety measures and company performance. It is designed with activities that will retrain staff and ensure safety management adherence in the sector.

Data Analysis

The explanation of the empirical data collected reveals the findings, which formed the basis of this work. A total of one thousand, one hundred and thirty-seven (1137) questionnaires administered on members of senior management, middle and lower management staff of each of the one hundred and eleven (111) manufacturing firms studied completed and returned their questionnaire. The researcher and three trained

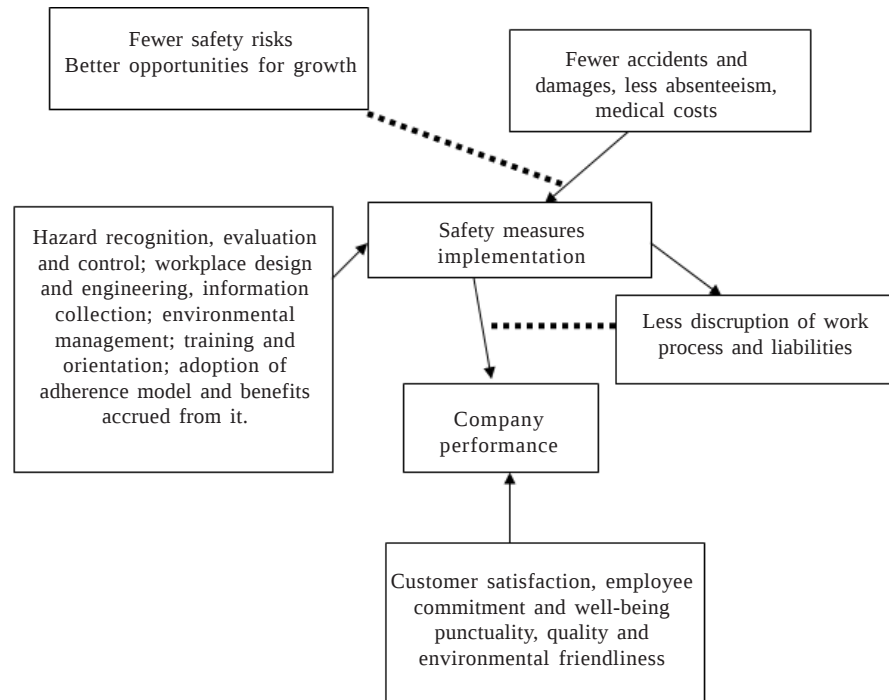


Fig. 1. Designed Safety Management Adherence Model (SMAM) for Nigerian manufacturing firms

research assistants administered the questionnaire. The questionnaire contains a total of twenty-eight (28) questions structured in seven parts.

- (i) This first subsection has seven (7) questions and an expected response frequency of 7959. It examined the extent environmental management can influence safety programme implementation in manufacturing firms to drive quality performance. The completed returned questionnaire contain observed response frequencies of strongly agreed (SA) (3426) 43.04%, Agreed (A) (2610) 32.79%, Neutral (N) (512) 6.43%, 0 (739) 9.28%, strongly disagreed (SD) (671) 8.43% (see Table 1).
- (ii) This subsection x-rays the influence of effective capacity building on safety management implementation. The subsection has seven (7) questions and an expected response frequency of seven thousand, nine hundred and fifty nine (7959). The observed response frequencies were: SA (3457) 43%, A (3364) 42.26%, neutral (527) 6.62%, D (302) 3.79%, SD (306) 3.84% (see Table 2).

These responses actually show that safety management is a tool for the improvement of quality performance in manufacturing firms.

- (iii) This subsection identifies the extent of adoption of safety management adherence model and its influence on implementation of safety programmes in the manufacturing firms to raise performance levels of firms. The subsection has seven (07) questions and an expected response frequency of seven thousand, nine hundred and fifty nine (7959). The observed response frequencies were; SA (3580) 44.98%, A (3582) 45.0%, Neutral (346) 4.34% D (316) 3.9%, SD (316) 3.9%. (See Table 3). These strong positive response shows that adoption of safety management adherence model will influence positively the level of performance in manufacturing sector.

DISCUSSION

In terms of the relationship between environmental management and safety management

Table 1: Responses on: To what extent do you agree/disagree that environmental management does influence safety programmes implementation in manufacturing firms and drive quality performance?

S.No.	Question	SA	A	N	D	SD	Total
1	The Nigeria Society does not comply with the safety program drawn up from time to time by government agencies?	52	47	103	487	448	1137
2	The Nigeria society exhibits poor moral support to safety issues?	609	354	84	38	52	1137
3	Nigeria corporate environment is yet to adopt safety consciousness and awareness in all operations?	451	500	78	64	43	1137
4	National policy on safety and environmental friendly activities should be established and promoted?	660	307	65	57	48	1137
5	Effective legislations/sanctions should drive all industrial activities at all tiers of governance?	584	454	42	27	30	1137
6	Management concern for safety must be attested to carrying out in good time practical measure to promote safety, mechanize and automate processes and jobs that are classed as heavy, harmful and dangerous?	460	543	70	37	27	1137
7	Establishment of all stakeholders forum on safety to articulate and advice on safety procedures, policies strategies?	610	405	70	29	23	1113
Total		3426	2610	512	739	671	7959
Cumulative (SA + A) AND (D + SD)		6036 or 75.83%6.43%1410 or 17.71%					
Average response		489.42	372.85	73.14	105.57	95.85	

Source: Field survey

Table 2: Responses on: To what extent do you agreed/disagree that effective capacity building/training will influence the effective implementation of safety programmes in the manufacturing firms?

S.No.	Question	SA	A	N	D	SD	Total
1	Your firm should organize regular safety training 557 programme for staff?	557	406	68	54	52	1137
2	Your firm should updates safety equipment / 500 technologies regularly?	500	471	78	43	44	1137
3	Your firm should partners/benchmarks other safety organization regularly?	449	504	80	53	51	1137
4	Your firm should adequately make investments in safety technologies etc, that will increase performance, reduce operational costs, accidents, lost 580 of men hour etc?	580	454	46	28	29	1137
5	Competent/capable factory safety inspectors will positively impact on overall corporate safety management/implementation programmes?	409	591	70	35	32	1137
6	Stakeholders updates/ review of safety policies/ implementation strategies will result in safe workplace /design/engineering?	475	493	84	39	46	1137
7	Adequate budgetary provision at governmental, corporate levels will grow effective safety policies/ implementations?	487	445	101	50	52	1113
Total		3457	3364	527	302	306	7959
Cumulative (SA + A) AND (D + SD)		6821 or 85.70%6.62%608 or 7.63%					
Average response		493.85	480.57	75.28	43.14	43.71	

Source: Field survey

Table 3: Response on: To what extent do you agree/disagree that the adoption of safety management adherence model and international best practice will influence positively the implementation of safety programmes to enhance performance of your firm?

S.No.	Question	SA	A	N	D	SD	Total
1	Your firm should organize regular safety training	557	406	68	54	52	1137
2	557 programme for staff?	500	471	78	43	44	1137
3	Your firm should updates safety equipment /	449	504	80	53	51	1137
4	500 technologies regularly?	580	454	46	28	29	1137
5	Your firm should partners/benchmarks other safety organization regularly?	409	591	70	35	32	1137
6	Your firm should adequately make investments in safety technologies etc, that will increase performance, reduce operational costs, accidents, lost 580 of men hour etc?	475	493	84	39	46	1137
7	Competent/capable factory safety inspectors will positively impact on overall corporate safety management/implementation programmes?	487	445	101	50	52	1113
	Stakeholders updates/ review of safety policies/ implementation strategies will result in safe workplace /design/engineering?						
	Adequate budgetary provision at governmental, corporate levels will grow effective safety policies/ implementations?						
Total		3457	3364	527	302	306	7959
Cumulative (SA + A) AND (D + SD)		6821	or 85.70%	6.62%	608	or 7.63%	
Average response		493.85	480.57	75.28	43.14	43.71	

Source: Field survey

implementations to drive quality performance, the strong positive response with the majority (75.83%) of the respondents agreed that there is a strong relationship while the minority (17.71 %) was of a contrary opinion. This finding is not at variance with ASSE (2002) white paper that asserts that from data and anecdotal information, that investment in a safety and environmental programmes is a sound business strategy, for any organization regardless of size, and will lead to a positive impact on the financial bottom line. While Court (2003) argued that creating better work environment and preventing harm from work are key means of improving performance. With regards to the influence of capacity building/training on the effective implementation of safety programmes in the manufacturing firms, no fewer than 85.70% of the respondents agreed that capacity building/training has a positive influence on the effective implementation of safety programmes in manufacturing firms. However, 7.63% of the entire respondents are of a contrary opinion. This finding agrees with the work of Cullen (1986) who asserts that one way to obtain compliance with safety regulations is through enhancing employees' knowledge, understanding and commitment

in a competitive environment. Finding on the effect of the adoption of safety management adherence model on performance of manufacturing firms, majority of the respondents (89.98%) agreed that adopting the adherence model exerted a positive influence on manufacturing firms. While a handful, 7.98 had a different opinion. The finding is not at variance with the work of Mossink (2002) whose model emphasized that the economic approach to safety at company level cannot replace the value of human requirements.

CONCLUSION

This study, which is based on the conceptual framework of Figure 1, shows that safety management implementation has an influence both on safety and the performance of firms. The designed model gives a qualitative overview of the economic effects of safety measures at company level and its aim was to support the theoretical analysis of field survey. The analysis is a reflection that investing in a safety and environmental programmes is a sound business strategy for any organization regardless of size, and will ultimately lead to a positive impact on the

financial performance of organisations. Put differently, creating a better work environment and preventing harm from occurring at work are key means of improving performance. Capacity building/training has a positive influence on the effective implementation of safety programmes in manufacturing organisations. One way to obtain compliance with safety regulations is through enhancing employees' knowledge, understanding and commitment within a competitive environment. Adoption of the adherence model will have a positive impact on the general performance of manufacturing firms within the Nigerian work environment.

REFERENCES

- Ahiane A, Nwabuwu B 2002. Nigeria: Lagos Factory Inferno: Chinese Managers Hope on God. *This Day*, 4 October, P.1.
- ASSE 2002. *White Paper Addressing the Return on Investment for Safety, Health and Environment Management Programmes*. Des Plaines Illinois: American Society of Safety Engineers
- Bain T 1997. *Health and Safety: Keep it Together*. England: Macmillan
- Bratton J, Gold J 1999. *Human Resource Management Theory and Practice*. 2nd Edition. Avon: Bath Press.
- Bunn W, Pikeiny DB, Slavin TJ, Paralkar S 2001. Health, safety and productivity in a manufacturing environment. *J Occup Environ Med*, 43(1): 47-55.
- Cole A 1993. Flexible benefits are a key to better employee relations. *Personnel Journal*, 63(1): 49-53.
- Cooper WT 1997. *Towards a Safe Working Environment. Engineering for Safety Conference* New York: Oxford University Press.
- Court S 2003. *Work and Enterprise Panel of Enquiry: Links Between the Quality of Working Life and Performance*. London: HSE.
- Cullen J 1986. *Chair of the Health and Safety Commission*, quoted in *workplace Health: A Trade Unionist Guide*. London: Labour Research Department, 1989.
- Eze FC 2006. *Human Resource Management in Nigeria*. 2nd Edition, Enugu. De-verge Agencies Publication.
- Goetzel RZ, Guindon AM, Turshen IJ, Ozminkowski RJ 2001. Health and productivity management: Establishing key performance measures, benchmarks, and best practices. *Journal of Occupational and Environmental Medicine*, 43(1): 10-17.
- Handula 1997. *Office Survival Handbook*. London: BSSRS.
- ILO 2002. *Work-related Fatalities Reach 2 Million Annually*. Geneva: International Labour Organisation.
- Kaplan RS, Norton DP 1992. *Translating Strategy into Action: The Balanced Scorecard*. Boston: HBS Press.
- Kohn JP, Mark AF 1996. *Fundamental of Occupational Safety and Health*. Rockville: MD.
- Lourandos J 2008. "The way forward" in *Nigerian Manufacturing Firms*. Lagos: The Guardian Publisher.
- Ogbo AI 2008. *The Impact of Industrial Safety Management on the Performance of Manufacturing Firms*. Ph.D Thesis, Unpublished. Univeristy of Nsukka.
- Olusanya TO 2007. *Safety Production and Noise Induced Hearing Loss*. WHO Publication, Nigeria.
- Ouchi WG 1981. *Theory Z: How American Business Can Meet the Japanese Challenges*. USA: Addison Wesley Publishing Company,
- Somavia J 2008. *My Life, My Work, My Safe Work: Managing Risk in the Work Environment*. Geneva: TUC.
- UNEP 2007. The Environment in the News. From <www.unep.org/cpi/briefs/2007July24.doc> (Retrieved on 19 July 2012).