

# Perceived Health Problems, Safety Practices and Performance Level among Workers of cement industries in Niger Delta

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Submitted: 15-04-2021

Revised: 28-04-2021

Accepted: 30-04-2021

**ABSTRACT:** This paper examined perceived health problems, safety practices and performance level among workers of cement industries in Niger Delta of Nigeria. A descriptive cross-sectional research design with analytical correspondent was adopted for this study. A structured questionnaire was designed and administered to two hundred (200) workers of workers in cement industries in Niger Delta of Nigeria. The study revealed that the occurrence level of occupational hazards had a significant influence on workers performance; a significant difference exist between performance levels of healthy workers to unhealthy workers; and that workers that comply with safety attitude had high propensities of performing on the job than workers who were unsafe at work in the cement industry. The study established the relevance of workers wellness and safety to workers commitment to duties as predictors of workers' performance. The paper advocates the promotion of global standard occupational health and safety practices in Nigeria's cement industry. Specifically, the study emphasizes the importance of a healthy workforce and work system, and suggestions were presented for improved occupational health and safety systems.

**Keywords:** Cement Industry, Hazard, Health Problems, Safety Attitude and Workers' Performance.

## I. INTRODUCTION

Workers play a crucial role in the performance and achievement of organizational goals and objectives. This essential role is hampered irrespective of workers' knowledge, skills, experience and competence, when the workplace is either unhealthy or unsafe for workers' to discharge specified tasks. This implies that workers health and safety are significant factors to organizational performance. It is a healthy worker that can be productive and it is only a safe worker that can be comfortable to discharge

his/her assigned responsibilities. Workers are vulnerable to occupational hazards which often result to numbers of health hazards and ailments. This is evident in the cement manufacturing activities such as quarrying, crushing, blending, and kiln burning. Emissions of pollutants such as noise, dust, gases and vibration when operating machinery are also common occurrences. According to Tetrick (2011) potentially, hazards in cement industries causes changes in the respiratory tract and impairs pulmonary functions as well as industrial accidents and injuries. Hence, occupational hazards have an enormous negative impact on the health of workers and their performance. Numerous studies have attempted to analyze occupational hazards to identify the resultant factors such as frequent absenteeism and low workers' commitment, and other counterproductive work behaviour. Health and safety hazards as components of occupational hazards affect workers health and subsequently their levels of performance.

According to Okoye, Odumegwu and Omuku (2012) most workers in Nigeria are unaware of the hazardous nature of their work environment and the consequences of working in unhealthy environment and how relevant safety measures adopted. Ahmed and Newson-Smith (2010) discovered that despite the relatively high knowledge of cement industries workers on adverse health effects of exposure to cement dust, workers use of personal protective equipment (PPE) was poor. According to Asiegle (2012) other factors affecting workers' health and performance in the cement industries include illumination, temperature, noise, and atmospheric conditions with recent studies pointing at other significant factors such as impaired working tools and absence of health insurance scheme (Yusuff, Adegbite, Awotedu, & Akinosho, 2014). According to Akintayo, (2012) aside low levels of knowledge to perform a given task, poor work performance can

be attributed to a combined effect of health and safety hazards which could lead to health challenges or deter workers from exercising the expected level of work commitment. Noah (2018) supported Akintayo (2012) that workers with low level of knowledge about occupational hazards are vulnerable to hazards related to their occupation which in turn affect their health.

Many workers in cement industries are faced with hazards emanated from cement production activities employed in the cement factories and had high prevalence rates of exposure to potentially harmful work organization characteristics and hazardous chemicals. Most of these workers worked long hours and are exposure to different hazards that correlates to health risk (Kanten, 2010). Workplace injuries are very serious and should be avoided by routine safety practices by both the workers and the management of cement industries in Niger Delta. Providing safe working environment for workers is the responsibility of top management of Cement industries. Workers of cement industries also have roles to play by complying with safety measures provided by top management toward safe working condition and wellbeing (Iden E. 2010). Specifically, this study examined the Perceived health problems and safety practices among workers of cement industries in Niger Delta.

## II. STATEMENT OF PROBLEMS

Worker of cement industries recently become more endangered and prone to hazards emanated from cement production activities. Such hazards are very dangerous to health and wellbeing of workers in the cement industries in Niger Delta. These accidents ranges from minor to fatal and some have lost their lives in the course of their duty, while some have lost vital organs, therefore rendered them permanently incapacitated.

The issue of safety and health at workplace which once occupied a major place in the programme and plan of employers is now treated with levity. In the manufacturing sector, the frequency of fatal industrial accidents is alarming.

Some of the victims who have suffered major injuries like loss of their hands or legs are often dismissed after receiving tokens that the companies give out on compassionate ground, because the Workman Compensation Act that is supposed to address issues of industrial accidents is as good as nothing.

A report by Douglas, K. K., and Alasia D. D. (2012) showed that knowledge and effective use of Personal Protective Equipment (PPE) contributed to low occupational hazards and health

problems at the workplace most cement industries are not adhered to effective use of personal protective equipment (P.P.E) which led to various hazards and health problems to the workers. None or improper use of P.P.E in the factory exposed workers to health problem such as eye irritation, heart attack, high blood, high blood pressure, irregular heartbeat etc. most cement factory do not provide PPE to their workers. In most factory P.P.E are not replaced when necessary, most workers are not attending safety training regularly to update their safety exercise. Safety practice of workers in cement industries in Niger Delta is poor. Most workers do not adhere to safety practices which further lead to prevalence of health problem among them. In most cases, they refuse to use their personal protective equipment (PPE). This is the gap the study intends to fill.

### Objectives of the study

The main objective of the study is to assess Perceived health problems and safety practices among workers of cement industries in Niger Delta. Specifically, this study intends to:

1. Find out perceived health problems among workers in cement industry in Niger Delta;
2. Evaluate safety practices of works in cement industry.
3. Examine the significance of workers' health on performance level in cement industry

### Research Questions

The following research questions were postulated to guide the study.

1. What are the perceived health problems among workers in cement industries in Niger Delta?
2. What are safety practices of workers to mitigate occupational hazards in cement industries in Niger Delta?
3. What are the significances of workers' health status on performance level in cement industry in Niger Delta?

### Research Hypotheses

The following hypotheses are formulated to guide the study:

1. There is no significant relationship between performance level of healthy workers and unhealthy workers in cement industries in Niger Delta of Nigeria.
2. There is no significant relationship between the safety practices of workers and work performance among workers in cement industries in Niger Delta of Nigeria

## III. LITERATURE REVIEW

### Occupational Hazards

Occupational Hazard is a condition, object, activity or event with the potential of causing injuries to people, damage to equipment or structures, loss of material, or reduction of ability to perform a prescribed function (Ilias, Stephen, Michel, Dave, Carmela, Michel, & Clément, 2019). Ahmed, Dosoki, and Nasr (2012) defined hazard as the presence of materials or conditions that have the potential of causing loss or harm or a combination of the severity of consequences and likelihood of occurrence of undesired outcomes. As clarified by Meenesh (2014), hazards in cement production processes can be classified into three (3) categories namely: (a) Routine and general hazards, (b) Special hazards during the cement production and (c) Special hazards as a result of the work environment.

Classification of Hazards in Cement Production Processes according to Meenesh, 2014) include:

#### Routine and general hazards

- Safe behavior
- Environment
- Work equipment
- Safety labeling
- Personal Protective Equipment (PPE)
- Manual Load Handling

#### Special hazards during cement production

- Quarrying
- Crushing
- Clinker production
- Milling processes at raw mill, cement milling and coal milling
- Material transport
- Filtering
- Storage
- Loading and delivery of final products
- Fuel storage activities
- Use of hazardous material
- Generating units

#### Special hazards as a result of the work environment

- Dust
- Noise
- Fire
- Emergency response

Meenesh (2014) described occupational hazards as aspects of one's occupation-specific context that increase the risk of injury. Occupational hazards refer to the potential risks to the health and safety of those who work outside the

home. According to Chandrasekar (2011), unsafe and unhealthy workplace environment, especially in terms of poor ventilation, inappropriate lighting, excessive noise among others, affect workers performance. Generally, the causes of occupational accidents are classified as unsafe conditions and unsafe behaviors (Sadullah & Kanten, 2019). Oketunji (2014) opined that the absence of health and safety system at workplace makes the employees victims of occupational hazards that could depress morale and productivity. In any workplace, the safety of employees should be a priority whether one works in a low- or high-risk job (Oketunji, 2014). Occupational safety aims to prevent the accidents caused by the unsafe behavior of the employees and/or the unsafe work environment, and to create a safe working environment. In this context, safety researches advocate for adaptive employee safety behavior, either directly or indirectly. Violation of safety rules escalates workplace hazards that impede the performance of the worker. Health hazards refer to potential risks to the workers' health occasioned by environmental activities which are capable of exposing workers to various diseases. One's occupational role determines to a large extent what one is expected to do and the hazardous nature of the tasks one must perform, thus highlighting the variations in health hazard exposures (Bureau of Labour Statistics, 2010). Questions have been raised on the importance of ensuring a healthy workforce. Specifically, Bevan (2010) explored the relationship between employee health and employee commitment and found that healthy employees are more committed. Healthy employees – whose physical and psychological wellbeing is good – can demonstrate higher levels of commitment than those who are less healthy. They tend to work harder and are more willing to deploy 'discretionary effort'. In addition, they tend to exhibit lower rates of sickness related absence. Barber, Hayday, and Bevan (2019) found that low levels of employee commitment led to higher levels of absence. Studies on occupational health hazard have indicated that the extent of occupational injuries is severe. Healthy workforce correlates with lower sickness absence rates, which translates to significant cost savings for employers. For instance, Aribigbola, Fatusin and Fagbohunka (2012) reported that health concerns of the work force come to the fore as hazards remained a serious threat to many workers in the discharge of their responsibility in the process of sand blasting, stone crushing, drilling, quarrying and tunneling through the earth crust.

According to Jorma (2014), management is responsible for most of the safety issues within organizations because they control the assignment of resources, establish and implement the methods of work as well as develop the policies. From the view point of Beach (2010), safety practices of an organization is the responsibility of top management, though workers also play an important role in order to achieve the overall objectives of the company which is to achieve positive performance and to mitigate hazards. Beach (2010) also revealed that safety practices among management and workers in cement industries is a major factor affecting the success of safety programmes in cement industries and this parameter is capable of determining high and low accident rate in any organizations.

Safety practices in cement industries remain a key component in mitigating hazards and a determinant factor in ensuring safe working environment (Lees, 2012). According to him, this safety practices can manifest itself through management and workers participation in safety committees, consideration of safety in job design, review of pace of work, accident and near-miss incident investigation and follow up actions, priority assigned for safety, occupational health programmes etc. Investment by organizations in these areas fosters perceptions of the company's commitment and builds worker loyalty in areas such as safety behaviour. Employees' perceptions will reflect how employees believe that safety is valued in the organization (Neal, 2015).

The motivation to perform a job in a safe manner is a function of both the workers safety practices as well as management's expressed concern for safety. Safety practices of any management must result in an observable activity on the part of the management and must be demonstrated in their behaviour as well as their words (Meams, 2013).

#### **Workers' Performance**

Work performance has been one of the important variables that have generated substantial empirical studies (Jankingthong & Rurkkhum, 2012). Byars and Rue (2016) define performance as the extent to which an employee accomplishes the tasks that make up his or her job. It is the extent to which worker is able to accomplish the task assigned to him or her. Workers performance can be defined as the measurement of how well or poorly an employee has accomplished a task (George and Jones, 2012). Workers' performance is the level of individual workers productivity in relations to job expectations (Babin and Bolos,

2018), such performance could be judged excellent, good, average or poor when expectations are compared with actual output. Performance in this sense relate to task performance which is behavioural oriented depending on the attitude of job holder towards the work (Werner, 2014). Individual performance refers to the amount of effort, initiative and absenteeism, maintenance of standards and commitment displayed by individuals while performing the job tasks (Ivancevich and Matteson, 2016).

Worker's performance is the degree to which employees accomplish work requirements. Workers effectiveness and efficiency are the two major components that determine level of workers performance. Workers effectiveness is a measure of the degree to which an employee achieves his/her set objectives and goals while worker efficiency has to do with the employee achieving his/her objectives or set goals with proportionally few resources. To achieve the objectives of task performance, workers must be available and committed. Allen (2018) conceptualized work performance from the perspective relevant to this study as they investigated the domains of absenteeism and presenteeism. They opined that absenteeism is counterproductive work behaviour which is capable of undermining expected work performance level. It is thus obligatory for employers to provide a safe workplace for employees to increase their efficiency and productivity, thus contributing to mitigating the incidence of negligence, associated accidents and injuries.

## **IV. THEORETICAL FRAMEWORK**

### **Cognitive Appraisal Theory**

Cognitive appraisal theory was propounded by Richard Lazarus in 2000. It emphasizes the appraisal of information from several sources. Appraisal involves cognition, or the processing of information from the environment, the body, and the memory. Such appraisal could be from individual's interpretation of the events in their lives as harmful, threatening, or challenging and their determination of whether they have the resources to effectively cope with the events. Furthermore, memories of past encounters with similar situations, dispositions to respond in certain ways, and consideration of the consequence of actions that might result from the emotional state are all part of appraisal. In the opinion of Lazarus, such events could be primary or secondary appraisal. In primary appraisal, an individual interprets whether an event involves harm or loss that has already occurred, or the threat of some



future dangers, or even a challenge to be overcome. Case of health or safety hazards is a threat. In secondary appraisal, individuals evaluate whatever resources available to them and determine how effectively they can be used to cope with the event. The secondary appraisal depends on the degree to which the event from the primary appraisal was appraised as harmful threatening, or challenging. Occupational hazards as a challenge during primary appraisal paves the way for such during secondary appraisal but people sometimes do not have the adequate resources for coping with an event that is seen as challenging. As a result, these individuals then find that they are able to reduce the intensity of the disturbing emotional feelings which result in either absenteeism from work or reduction of work commitment level.

### V. METHODOLOGY

A descriptive cross-sectional research design with analytical correspondent was adopted for this study. It is a non-experimental description research method. The study was carried out in cement industries in Niger Delta. The population consists of more Male workers which represent 70% of the total population and few female workers which represent 30% of the total population for the study. A total of 400 questionnaires were distributed to the respondents. Simple random and purposive sampling techniques were used to select 200 participants for this study. The adoption of this sampling technique was to give every person in the population equal chance of being chosen to participate in the study through a

ballot system. The departments in the cement factories are broadly classified into administrative and operational sections. The study focused attention on the operational sections of the cement industries in the study area which are classified into production, manufacturing and maintenance units comprises of workers directly exposed to occupational hazards; these includes workers in the bagging, crushing and packing section; loaders, mechanical engineers, technicians, and other support staffs.

The reliability of the instrument was ascertained through a Pre-Test method. A sample of 20 respondents was administered copies of the instrument within interval of two (2) weeks in a Quarry factory in Port Harcourt, Rivers State. All adjustment and corrections were done on the instrument and the data collected was analyzed using Cronbach Alpha with reliability index of 0.83 was obtained, thus the instrument was reliable for the study. Descriptive statistics was used to obtain answers for research questions while Pearson Correlation statistics method was used to test the null hypotheses which were aided using statistic package for social sciences (SPSS) version 21. Any mean score above the criterion mean of 2.5 was accepted; means score below the criterion mean of 2.5 was rejected.

### VI. RESULTS AND DISCUSSIONS

**Research Questions 1:** What are the perceived health problems among workers in cement industries in Niger Delta?

**Table 1: Perceived health problems among workers in cement industries in Niger Delta**

S/N	Item/Variable	MEAN	SD	DECISION
1	Joint pains and ankle injury	2.99	0.82	Significant
2	Waist pains	3.02	0.83	Significant
3	Back pains	3.06	0.84	Significant
4	Neck and shoulder pains	3.05	0.80	Significant
5	Eye irritation	3.00	0.83	Significant
6	Persistent coughing	3.03	0.85	Significant
7	Wheezing sound	3.04	0.77	Significant
8	Chest pain	3.04	0.81	Significant

Table 1 revealed that respondents agreed that joint pains and ankle injury, waist pains, back pains, neck and shoulder pains, eye irritation, persistent cough, wheezing sound and chest pain are the perceived health problems among workers

in cement industries in Niger Delta of Nigeria. The rated means are greater than the criterion mean of 2.5 indicated the prevalent health problems among workers in cement industries in Niger Delta.

**Research Questions 2:** What are safety hazards in cement industries in Niger Delta? practices of workers to mitigate occupational

**Table 2: Safety Practices of workers to mitigate occupational hazards in cement industries in Niger Delta**

S/N	Item/Variable	MEAN	SD	DECISION
1	Personal protective equipment (PPE) are provided by the cement factory	3.05	0.85	Agree
2	Put on ear cushion during operation	2.06	1.04	Disagree
3	Put on helmet during work	2.27	1.12	Disagree
4	Put on gas mask when working on confine space	2.39	1.05	Disagree
5	Wear hand gloves when installing electrical equipment	3.06	0.83	Agree
6	Put on safety belt when working in great height	3.08	0.79	Agree
7	Put on protective costumes (overall) during work	3.03	0.86	Agree
8	Put on safety shoes during work	3.08	0.83	Agree

Table 2 revealed that respondents declared that personal protective equipment are provided by the cement factory, wear hand gloves when installing electrical equipment, put on safety belt when working in great height, put on protective costumes during work and put on safety shoes during work but disagreed that they put on ear cushion, helmet during operation, put on gas mask when working on confine space. The rated means

were above the criterion mean of 2.5 indicating that there are fair safety practices among workers in selected cement industries in Nigeria.

**Research Questions 3:** What are the significances of workers' health status on performance level in cement industry in Niger Delta?

**Table 3: Significances of workers health on performance level in cement industry in Niger Delta**

S/N	Item/Variable	MEAN	SD	DECISION
1	The health of workers affects commitment to work	3.06	0.83	Agree
2	The health of the workers determine low labour turnover	3.11	0.80	Agree
3	Healthy organization with health employee determine their effectiveness and performance	2.95	0.91	Agree
4	The health status of employees affects their punctuality	3.00	0.86	Agree
5	Health status of workers affects efficiency	3.12	0.75	Agree
6	Healthy working condition result in growth and development of an organization	3.15	0.70	Agree
7	Unhealthy working condition result in low productivity	3.05	0.78	Agree
8	Unfavorable working condition affect workers health which in turn determine the production level of the cement industries	3.09	0.76	Agree

**Hypotheses**

**Hypothesis 1:** There is no significant

relationship between performance level of healthy workers and unhealthy workers in cement

industries in Niger Delta of Nigeria.

**Table 4:** T-test table showing workers health status on work performance level in cement industries in Niger Delta

Health status of workers	N	Mean	S.D	Df	t	p
Healthy workers	114	44.92	8.86			
Unhealthy workers	86	48.61	7.91	198	.386	.000
Total	200					

The result in table 4 shows that there is a significant difference between the performance levels of healthy workers when compared to unhealthy workers. ( $t = -3.86$ ;  $df = 198$ ;  $p < .05$ ). This implies that unhealthy workers had poor performance while healthy workers have high performance in their work. Workers with low performance have a mean value of 48.61 while workers with high performance have a mean value

of 44.92. This shows that workers performance level is significantly determined by workers health status.

**Hypothesis 2:** There is no significant relationship between the safety of workers and work performance among workers in cement industries in Niger Delta of Nigeria.

**Table 5:** T-test table showing safety of workers and work performance among workers in cement industries in Niger Delta

Workers safety	N	Mean	S.D	Df	t	p
Safe attitude of workers	104	47.81	8.76			
Unsafe attitude of workers	96	45.57	8.51	198	.648	.002

The result shows that safe attitude of workers towards occupational hazards have high tendencies of performing on the job than workers who have unsafe attitude at work. ( $t = .648$ ;  $df = 198$ ;  $p < .05$ ). Workers that are exposed to safety have mean score of 47.81 while works practicing unsafe attitude to work have mean value of 45.57. This implies that there is significant relationship between workers with a sense of safety and work performance. The table also affirmed that there is relationship between occupational hazards and workers commitment to work and general workers performance in the cement industries in Niger Delta of Nigeria.

## VII. DISCUSSIONS OF FINDINGS

### Workers Health Problems of occupational hazards and Performance of Cement Industries in Niger Delta

The research findings for this study indicated that occupational hazards were bad and need to be well managed in order to ensure workers' performance. The occurrence and frequency of occupational hazards reduces workers' level of performance. The study revealed to a very high extent that there is a significant health problem associated with occupational health hazards among workers in cement industries in Niger Delta. These include Joint pains and ankle injury, waist pains, back pains, neck and shoulder

pains, eye irritation, silicosis, chronic bronchitis, persistent coughing, wheezing sound, chest pain etc.

Finding of the survey also revealed that workers' health status significantly affects work performance level. The stated hypothesis one (1) tested revealed ( $t = -386$ ;  $df = 198$ ;  $p < .05$ ) by implication, workers with low performance are often unhealthy.

This is in consonance with the opinion of Amanze H.E. (2014) which observed the relationship between employee health and employee performance and discovered that healthy workers perform better on the job. The work also affirmed that workers absenteeism is as a result of constant hazards which affect workers performance.

This is in line with the work of (Arshad, Ahmed, Ali, Amjad and Mohammed, 2018) that link absenteeism to workers performance and confirmed that workers absenteeism reduced workers performance level.

### Safety Practices of Workers towards occupational hazards and workers performance in Cement Industry

Another major finding was on workers safety practices and work performance. The study discovered that unsafe act which lead to occupational accidents contribute to low workers performance. The study discovered that there are fair safety practices among workers in selected

cement industries in Nigeria. Also, results revealed that safety practices of workers have high propensity of performing on the job than workers with unsafe attitude towards occupational hazards. This is consistent with the views of (Department of Health, 2015) that unsafe attitude towards occupational hazards affects workers performance level in cement industries in Niger Delta in Nigeria.

This is in line with the work of Noah (2018) on awareness of occupational health hazards and safety education among workers of cement industries in Port Harcourt that non compliance of workers of cement industries to safety practices exposes workers to occupational hazards that can lead to health problems.

### VIII. CONCLUSION

Cement manufacturing industry is known for wide range of hazardous activities compared to other industries, and as such requires special attention towards health and safety to improve workers' performance. From the perspective of this survey, it can be construed that health and safety hazards affect workers commitment to work. Workers wellness plays a significant role on their performance. A healthy and safe worker will desire to report for duty as expected of him/her and put in his/her best at work, but unhealthy and unsafe workers will feel demoralized and record high rate of absenteeism and low commitment which in turn reduces the performance level of worker. From these findings, it suffices to conclude that occupational hazards are an important contributor of workers' absenteeism and low commitment generally when it is perceived as threatening to their wellbeing. Frequency of health problems of workers on occupational hazards was observed to be the main cause of workers absenteeism and low commitment to work and it affects both the health of the workers and their performance level. To make a workplace healthy and safe, management must promote healthy and safety culture among workers.

### IX. RECOMMENDATIONS

The following stated recommendations will be useful in aiding cement industries in Niger Delta of Nigeria.

1. Occupational hazards are not good for workers and should be minimized to improve workers performance, safety practices should be carried by both the workers and the top management of these industries in Niger Delta.
2. In as much as workers' health contributes to performance level, top management should

maintain and improve health system in the organization to improve workers' performance.

3. Management and workers of cement industries in Niger Delta should place high preference on both organization and individual safety. Protective gadgets must be provided by management and the use of those gadgets at all times must be encouraged and enforced on workers.

### REFERENCES

- [1]. Amanze, H. E. (2014). Occupational Health Hazards Experienced by workers of cement Industries in Port-Harcourt, Rivers State. Unpublished Med. Thesis Report, University of Port Harcourt, Port Harcourt.
- [2]. Aribigbola, A., Fastusin, A.F., & Fagbokunka, A. (2012). Assessment of Health and Environmental Challenges of cement factory on Ewekoro community residents, Ogun State, Nigeria American Journal of Human Ecology, Vol. 1, No 2, 2012, 51-57.
- [3]. Arshad, H. R., Ahmed A., Ali Y. B., Amjad A. K. & Mohammed A. A. (2018). Effect of exposure to cement dust among the workers: An evaluation of health Related complications. Open access Macedonian Journal of Medical Sciences 2018. January 30; 6(6): IT59-1162. Retrieved from: <http://www.ncbi.nih.gov/pmc/articles/pmc6026423>
- [4]. Babin, B. J. & Boles, J. S. (2018). Employees behavior in a service environment: A model and test of potential differences between men and women. Journal of Marketing, 62(2), 77 – 91.
- [5]. Barber L., Hayday S. & Bevan S. M. (2019). From People to Profits, IES Report 375.
- [6]. Beach, D. (2010). The Management of people at work (7<sup>th</sup>ed.) New Jersey: Macmillan Publishing Company Ltd.
- [7]. Bevan, S. (2010). The Business Case for Employees Health and Wellbeing: A report prepared for Investors in People UK. London: The Work Foundation.
- [8]. Bureau of Labor Statistics (2014). Retrieved from <http://www.bls.gov/iif/> on November 12, 2014.
- [9]. Byars, A. & Rue, E. (2016). Human resource management: contemporary issues, challenges and opportunities. New Jersey: IAP.
- [10]. Chandrasekar, K. (2011). Workplace environment and its impact on organizational performance in public sector



- organizations. International Journal of Enterprise Computing and Business Systems, 1(1) Retrieved December 20, 2014 from <http://www.ijecbs.com/January2015>
- [11]. Department of Health. (2015) Survey of Occupational Health and Safety: Knowledge of Employees. Executive Yuan, Taiwan, Republic of China.
- [12]. George, J. M. & Jones, G. R. (2012). Understanding and managing organizational behaviour sixth ed. Prentice Hall New Jersey
- [13]. Ilias M., Stephen C., Michel P., Dave P., Carmela T., Michel M., & Clément, A. (2019). Safety management system and safety culture Working Group (SMS WG): Guidance on hazards identification. A publication of European Strategic Safety Initiative.
- [14]. Ivancevich, J. M. & Matteson, M. T. (2016). Organizational behaviour and management. (4th ed). Chicago, IL:Irwin.
- [15]. Jankingthong K. & Rurkkhum, S. (2012). Factors affecting job performance: Literature review. Silpakom University Journal of Social Sciences, Humanities & Arts, 12(2), 115 – 127.
- [16]. Jorma, S. (2014). Health and safety at work. African newsletter on occupational health and safety.
- [17]. Kanten, S. (2013). The relationships among working conditions, safety climate, safe behaviour and occupational accidents: An Empirical research on the marble workers. The Macrotheme Review, A multidisciplinary Journal of Global Macro Trends, 2(4), 173-182.
- [18]. Meenesh, K. T. (2014). Study of occupational health, safety & environmental aspects in major cement manufacturing industry (Ultratech Cement Limited). Journal of Environmental & Earth Science, 6(9), 117-119.
- [19]. Neal J. (2015). The impact of organizational climate on safety climate and individual behavior safety science, 34, 99 – 109.
- [20]. Noah, O.E. (2018). Impact of occupational health hazards and safety practices among workers of cement industries in Port Harcourt. Journal of the Nigerian Association for physical, health education, recreation, sport and dance. Vol. 6 44-55.
- [21]. Noah, O.E. (2018). Awareness of occupational health hazards and safety education among workers of cement industries in Port Harcourt. Educational Journal of Multi-Disciplinary studies, University of Port Harcourt. Vol 7 207-222.
- [22]. Oketunji S. F. (2014). Influence of occupational health and safety information availability and use of job performance of library personnel in Public Universities in South-West Nigeria. European Scientific Journal, 10(14), 337-350
- [23]. Okoye A. C., Odumegwu, C. O. & Omuku, P. E. (2012). Evaluation of the level of safety consciousness in Municipal Waste Management in Anambra State, Nigeria. Journal of Environmental Management and Safety, 3(1), 90 – 96.
- [24]. Sadullah O. and Kanten, S. (2019). A research on the effect of organizational safety climate upon the safe behaviors. Ege Academic Review, 9(3), 923-932.
- [25]. Samet, J. M., Dominici, F., Zeger, S. L., Schwartz, J., & Dockery, D. W. (2000). The national morbidity, mortality, and air pollution study. Health Effects Institute Research Report, 94.
- [26]. Tetrick (2011) Relations among occupational Hazards, attitudes and safety performance. Journal of Occupational Health Psychology, 16(1), 48 – 66.