# Occupational Safety and Health Practices Required by Electrical /Electronics Technology Graduates in North Central Nigeria

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#### **ABSTRACT**

The study was designed to examine occupational safety and health practices required for effective job performance of electrical /electronic technology graduates in North Central Nigeria. The study adopted a descriptive survey research design. The study was carried out in North Central, Nigeria. The study area covered Benue, Plateau, Kogi and Niger States. The study's sample size was 36, which were made up of (20) industrial personnel and (16) Electrical/Electronics Technology lecturers. Two research questions and hypotheses were formulated to guide the study. A five-point scale questionnaire was the instrument used for the collection of data from the respondents which consists of section A and B. The 5-point scale item was rated: Strongly agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) and Undecided (U) for section A with numerical values of 5,4, 3, 2 and 1 and Very Highly Required (VHR), Highly Required (HR), Required (R), Slightly Required (SR) and Not Required (NR) for section B and. The instrument was administered and the data collected were analysed using mean and standard deviations to answer the research questions and one-way ANOVA to test the significant differences in the response of the respondent. Findings revealed the required management safety practices needed for job effectiveness electrical/electronic graduates: it also revealed the workers' safety rules practices needed for job effectiveness of electrical/electronics graduates. Therefore, it was recommended that Management should increase the frequency of the supervision of safety practices and training program to ensure the employees are aware of the safety rules.

### INTRODUCTION

Work has its positive health-promoting effects, as the financial dividend which provides the worker with the basic necessities of life (Snyder, Lopez & Pedrotti, 2011). The abovementioned translates into healthy wellbeing, job satisfaction, and ultimately, higher productivity. There is, however, a reciprocal and interactive relationship between the workers and the work environment. The knowledge of these interactions between work and health is fundamental in understanding and practicing occupational health and safety, but the importance of safety at the workplace is often overlooked. Work environment consisting of a triad of environment, man and machine has its associated risk factors or hazards, which are directly or

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indirectly operative, having the potential to harm the health, safety and welfare of workers. Occupational hazard is the risk, harm, or danger that an individual is exposed to at the workplace, whereas occupational diseases result from such exposures to the individual. Although these occupational diseases appear to occur less frequently than other major debilitating diseases, there is evidence that they affect a considerable number of people, particularly in rapidly industrializing countries like Nigeria, hence indirectly impacting the economy. During work periods, workers are faced with a variety of hazards almost as numerous as the different types of work, including chemicals, biological agents, physical factors, and adverse ergonomic



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conditions. These are responsible for a variety of health consequences (Aliyu & Shehu, 2006).

The current global workforce stands at about 2.8 billion with workers spending about one third of their lifetime at workplace. Workers expect safe working environment as their fundamental human right. However, there are still poor working conditions especially in developing countries. Workers all over the world, face dual occupational hazards, the traditional as well as novel in the complex work settings due to industrialization, technological advancement and globalization, over the last few years. This has resulted into injuries, accidents, illnesses, disabilities and death. Occupational health issues affect individuals, families as well as the communities, hence the need for occupational health. Alli (2008) defined Occupational Safety and Health (OSH) as the science that take into consideration the possibility of hazards from the workplace and its anticipation impact on workers' health and general well-being. In agreement to this, Ahmad, Igbal, Rashid, Igbal and Roomi (2016) opined that safety focus on curbing accidents at work and its negative effect on workers in all manner. It studies all factors influencing the health of workers at their workplaces as well as at home, thereby anticipating, recognizing, evaluation and control of hazards. The standard of Occupational health and safety available at any work place is the main determinant of workers' health (Mostafa & Momen, 2014).

Safety in the workplace is job number one for employer and employee alike. It is especially important for those who install and service electrical systems. Electrical hazards which is an occupational hazard have always been recognized, yet serious injuries, deaths, and property damage occur daily. There are four main types of electrical injuries: electrocution (death due to electrical shock), electrical shock, burns, and falls According to National Fire Protection Association (NFPA) 70 & 70E, 97% of all electricians have been shocked or injured on the job; approximately 30,000 workers receive electrical shocks vearly: over 3600 disabling electrical contact injuries occur annually and electrocutions are the 4th leading cause of traumatic occupational fatalities. In view of the above, it is safe to say that electrical safety is not an option but it is absolutely necessary for workers and employers alike. Most electrical accidents result from unsafe equipment or installation, unsafe environment or unsafe work practices. Since electrical accidents are largely preventable through safe work practices, organizations industries as well as construction sites, should be exposed to Occupational Safety and Health Practices (OSHP).

Occupational Safety and Practices are the strategies, policies, activities and procedures that are implemented by the organization targeting safety of their employees (Vinodkumar, 2010). Occupational Safety and Health Practices are encompassed many safeties related components. They are management commitment. safety training. involvement, safety rules and procedures and safety promotion policies. All levels inside the management should commit inside and demonstrate their support of the safety and health program to make the safety management effective (Shekh, 2015). It is necessary that when forming of a company, the goals of safety, safety programs, policies, plans and procedures should be documented. Employers must have fully committed into the safety training program to teach their employees to handle risks (Hussain, 2009). A company's management is responsible for most of safety issues in the organization because they have control over of the available resources. Company should provide the training to all levels of employees. Through training, employee can improve their knowledge, behaviour and skills. Training must be followed by a program based on a goal-setting and performance feedback.

The training programs should include the topics such as promotion of safety, accident prevention, safety practices and compliance, personal protective equipment, accident and emergency response, equipment and machinery chemical, workplace hazards and worker involvement (Hamid, 2015). All the worker need to be given appropriate types and adequate amount of the safety training in order to improve safety awareness to face daily hazards, risk and danger in their workplace. Employees inside the workplace are most qualified personal to make the



suggestion for making improvement and they are reliable to discuss about safety and health issues which can affect the workers in the organization. In addition, employees should be encouraged to give their feedback and recommendations on the safety-related matters and also can suggest the ways to improve the work processes and activities that can be more safety (Taufek, 2016).

Vinodkumar (2010) describes the safety rules and procedures that are well established by organization can improve the safety behaviour of employees at workplace. Safety rules and procedures related matters such as regular safety inspection, supervisor enforcing safety rules and effective safety and health rules, procedures in workplace to prevent accident. The safety rules and procedures can set up the standards of behaviour of the employees, and establish safety system to correct workers' safety behaviours in order to help employees understand the safety rules and procedures (Said, 2015). By the ways, the management has to make an effort about the communicating the rules and procedures in a language that can easily understand by the employees (Shamsudinb, 2016). Also safety promotion policies of management include recreational activities, rewards, and incentives to motivate employees to be perform safety in the workplace. In addition, safety promotion policies can encourage employees about the hazard control programme and motivate them to take selfprotection action towards the safety management (Othman, 2012)

The implementation of OSHP has been shown to significantly reduce the incidence of accidents, illness, injuries and fatalities (Hussian, 2013). In addition, OSHP helps the business to demonstrate to all stakeholders that their business is socially responsible, improvements in the image, brand value and wider organization's reputation of the firm (Warner, 2013). It also helps to maintain and enhance confidence of investor and also help to develop positive stakeholder engagement at all levels enables company to meet customers' expectations, and encourages workers to stay longer (Federation, 2016).

Over the decades, construction firms, industries and various businesses have made several efforts toward improving its safety performance. Meanwhile, focus have been

diverted from monitoring safety performance to proactive measures of improving safety practices. Hughes (2010) stressed that a paradigm shift in thinking, values addition and change of believes will boost healthy and sustainable society. Neale (2013); Kolawole (2014) opined that adequate training of students on occupational safety and health via cognitive education will be a good channel in helping the students to improve safety practices and also help foster effective job performance. Job performance is a function of personal performance of individuals as regards the tasks included in standard of job descriptions. Work performance is also influenced by such variables as establishing good interpersonal relations, withdrawal behaviours such as absenteeism, substance abuse, and behaviours that increase hazards at workplace (Murphy, 2011). Therefore, it can be said that for effective job performance of workers, OSHP becomes inevitable.

Abdullah and Wern (2011) stated that the role of academia in creating necessary awareness, knowledge, skills and values in electrical/electronics students during their training is vital in developing safety culture. In view of this, Akinwale and Olusanya (2016) stated that high level of awareness on the importance of occupational health and safety and practices, training on how to identify and manage risk among workers will optimize safety. It is therefore important that electrical/electronics technology graduates are aware and understand the various workplace hazard and a sound knowledge of safety guidelines and practices needed at the workplace. The researcher seeks its importance to examine the occupational safety and health practices required for effective job performance of electrical /electronics technology graduates in North Central Nigeria.

### THEORETICAL FRAMEWORK

In 1931, the late H.W. Heinrich (Heinrich, Peterson and Ross, 1980) presented a set of theorems known as 'the axioms of industrial safety'. The first axiom dealt with accident causation, stating that 'the occurrence of an injury invariably results from a complicated sequence of factors, the last one of which being the accident itself.' Alongside, he presented a model known as



the 'domino theory' as this accident sequence was likened to a row of dominoes knocking each other down in a row. The sequence is:-Injury, caused by an; Accident, due to an; Unsafe act and/or mechanical or physical hazard, due to the; Fault of the Person, caused by their; Ancestry and Social Environment. Henrich's Domino Theory Heinrich highlighted the third domino of unsafe acts or conditions as Key domino. As unsafe acts are 88% responsible for accidents/injuries. Human Resource (management) practices such as training, rules and regulation, awareness, rewards, employee participation, programs, and inspections play key role. The technological solutions improve working conditions contributes only 10%. Henrich propounded accident proportion as, "Out of 330 accidents due to unsafe actions and conditions, 300 are no injury accidents, 29 are minor injury accidents and one is lost time accident."

This theory tries to explain the overall role of causative factors leading to workplace accidents/injuries. OHS management is appropriate application of theories of management for controlling workplace accident/injuries, health hazards, diseases and unfavourable working conditions. It involves assigning roles and responsibilities, enhancing workers' awareness, auditing, compliance, recording and informing about situation to the stakeholders.

#### Research Questions

The following research questions were formulated for this study:

- 1. What are the management safety practices required for effective job performance of electrical/electronics technology graduates?
- 2. What are the workers' safety rules practices required for effective job performance of electrical /electronics technology graduates?

#### Research Hypothesis

The following null hypothesis was formulated to guide the study and tested at 0.05 level of

Significance:

H0<sub>1</sub>: There is no significant difference in the mean responses of electrical/electronics lecturers and

industrial personnel on management safety practices required for effective job performance of electrical/electronics technology graduates.

H0<sub>2</sub>: There is no significant difference in the mean responses of electrical/electronics lecturers and industrial personnel on workers' safety rules practices required for effective job performance of electrical/electronics technology graduates.

#### **METHODOLOGY**

The design adopted for this study was a descriptive survey research design. A descriptive survey design was selected because of its high degree of representativeness and the ease in which a researcher could obtain the participants' opinion. The study was carried out in North Central, Nigeria. The study area covered Benue, Plateau, Kogi and Niger States. The choice of this study area was because these states have accessible target population for this study which were made up of Industrial personnel in industries and related organisations as well as lecturers in Electrical/Electronics Technology Departments in North Central. The sample size of the study was 36, which were made up (20) industrial personnel and (16) Electrical/Electronics Technology lecturers. They were selected using simple random sampling technique. A five-point scale questionnaire was the instrument used for collection of data from the respondents which consists of section A and B. The 5-point scale item was rated: Strongly agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) and Undecided (U) for section B with numerical values of 5,4, 3, 2 and 1 for section A and Very Highly Required (VHR), Highly Required (HR), Required (R), Slightly Required (SR) and Not Required (NR) for section B. The instrument was face validated by three experts in Electrical Electronicss in Federal University of Technology, Minna and their comments and suggestions were considered in preparing the final draft of the instrument. The reliability of the instrument was established by trial usina industrial personnel Electrical/Electronics Technology lecturers in Niger State. Cronbach Alpha was used to determine the internal consistency of the items in the instrument. A reliability coefficient of 0.89 was obtained. The instrument was administered and the data collected were analysed using mean and



standard deviations to answer the research questions. For section A, the cut-off point to accept or reject an item was fixed at 2.50. Therefore, any item that has a mean score of 2.50 and above was regarded as agreed while any item below 2.50 was regarded as disagreed. The decision rule for section B was based on real limit of values, items with mean responses within the range of the real limit of values: 4.50 to 5.00, 3.50 to 4.49, 2.50 to

3.49, 1.50 to 2.49 and 1.00 to 1.49 and were remarked as VHR, HR, R, SR and NR respectively. While for testing the hypothesis, One-Way Analysis of Variance (ANOVA) was used. The value of the calculated F ratio was compared with F critical and null hypothesis was accepted if the value of F ratio calculated is less or equal to F ratio and otherwise the null hypothesis rejected.

**Research Question 1:** What are the management safety practices required for effective job performance of electrical/electronics technology graduates?

**Table 1:** Mean and Standard Deviation of Management Safety Practices Required for Effective Job Performance of Electrical/Electronics Technology Graduates

S/N	Items	Mean	SD	Decision
Super	visory Responsibilities			
1.	Being current with and implementing health and safety policies, practices and programs	2.98	0.61	Agree
2.	Ensuring that workplaces, including laboratories, and equipment are safe and well maintained	3.02	1.04	Agree
3.	Ensuring that workplaces or laboratories are in compliance with OSH policies, programs and practices	2.91	0.55	Agree
4.	Ensuring that employees, interns and visitors under their supervision or within their work areas have been provided with appropriate safety training and information, and adhere to established safety practices and requirements.	2.67	0.78	Agree
Manag	erial Responsibilities			
5.	Individuals under their management should have the authority to implement appropriate health and safety policies, practices and programs	2.78	0.82	Agree
6.	Areas under their management have should adequate resources for health and safety programs, practices, and equipment	3.33	1.010	Agree
7.	Areas under their management are in compliance with OSH policies, practices and programs.	3.11	1.01	Agree
Enviro	nmental Health and Safety Responsibilities			
8.	Reviewing legislation, recommending policies, and monitoring compliance with environmental and health and safety statutes and regulations	2.96	1.19	Agree
9.	Developing organisational safety and compliance programs and assisting departments and workers with implementation	2.66	0.89	Agree
10.	Providing guidance and technical assistance to supervisors and managers in various departments, and other work units in identifying, evaluating, and correcting health and safety hazards	3.24	0.94	Agree

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S/N	Items	Mean	SD	Decision
11.	Developing programs for the safe use of	3.40	0.85	Agree
	hazardous radiological, biological, and			
	chemical substances and lasers			
12.	Providing training materials, assistance, and programs	2.92	0.99	Agree
	in safe work practices			
13.	Providing guidance on effective emergency	2.83	1.14	Agree
	management and providing emergency response			
	services for incidents involving hazardous materials			
14.	Providing fire prevention, inspection, engineering and	2.77	0.52	Agree
	systems maintenance services			
15.	Hazardous waste management and disposal services.	2.76	0.52	Agree

Analysis of mean responses of the respondents revealed that all items in Table 1 were adjudged as agreed with the mean values ranging from 2.66 to 3.40. From the analysis, it implies reveals that supervisory, managerial as well as environmental health and safety responsibilities skills are the required management safety practices needed for effective

job performance of electrical/electronics technology graduates.

Research Question 2: What are the workers' safety rules practices required for effective job performance of electrical /electronics technology graduates?

**Table 2:** Mean and Standard Deviation of Workers' Safety Rules Practices Required for Effective Job Performance of Electrical /Electronics Technology Graduates

S/N	Items	Mean	SD	Decision
SAFE	TY RULES			
Identi	fication Of Electrical Hazards			
1.	Inadequate wiring	4.13	0.69	HR
2.	Exposed electrical parts	3.62	0.76	HR
3.	Overhead power lines	4.22 3.41	0.41	HR HR
4.	Wires with bad insulation		0.55	
5.	Make sure electrical systems and tools that are not grounded or double-insulated	4.21	0.57	HR
6.	Overloaded circuits	3.91	0.56	HR
7.	Damaged power tools and equipment	3.88	0.61	HR
8.	Using the wrong PPE is dangerous	4.16	0.65	HR
9.	Using the wrong tool	4.08	0.66	HR
10.	Some on-site chemicals	3.91	0.51	HR
11.	Defective or improperly set up ladders and scaffolding	4.22	0.55	HR
12.	Ladders that conduct electricity	4.51	0.62	VHR
13.	Wet working conditions	4.13	0.69	HR
SAFE	TY PRACTICES			
Plan Y	our Work And Plan For Safety			
14.	Work with a "partner"—Do not work alone.	4.72	0.63	VHR
15.	Know how to shut off and de-energize circuits	3.99	0.57	HR
16.	Plan to lock out and tag out circuits and equipment	4.31	0.56	HR
17.	Remove jewellery and metal objects	3.79	0.81	HR
18.	Plan to avoid falls	3.93	0.84	HR

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S/N	Items	Mean	SD	Decision
	Wet Working Conditions And Other Dangers			
19.	Do not work wet—Do not work on circuits or use	3.84	0.79	HR
	electrical equipment in damp or wet areas.			
20.	Use a GFCI—Always use a GFCI when using portable	4.13	0.69	HR
	tools and extension cords.	-		
Use P	roper Wiring And Connectors			
21.	Avoid overloads, do not overload circuits.	3.73	0.26	HR
22.	Test GFCIs monthly using the "test" button	3.88	0.60	HR
23.	Check switches and insulation	3.97	0.78	HR
24.	Use three-prong plugs, never use a three-prong	3.84	0.79	HR
	grounding plug with the ground prong broken-off.		· <b>·</b>	
25.	Use extension cords properly, if an extension cord	4.51	0.61	VHR
	must be used, choose one with sufficient ampacity for			*****
	the tool being used.			
26.	Check power cords and extensions, electrical cords	4.72	0.63	VHR
	should be inspected regularly	<b>-</b>		*****
27.	Do not pull on cords, always disconnect a cord by the	3.99	0.57	HR
	plug.			
28.	Use correct connectors, use electrical plugs and	4.31	0.56	HR
	receptacles that are right for your current and voltage	•		
	needs			
29.	Use locking connectors	4.85	0.38	VHR
	nd Maintain Tools Properly			
30.	Inspect tools before using them	3.82	0.68	HR
31.	Use the right tool correctly	4.25	0.54	HR
32.	Protect your tools	3.91	0.56	HR
33.	Use double-insulated tools	3.88	0.61	HR
34.	Use multiple safe practices	4.16	0.65	HR
	Correct Personal Protective Equipment (PPE)			• • • •
35.	Wear safety glasses	4.82	0.36	VHR
36.	Wear proper clothing	4.84	0.37	VHR
37.	Contain and secure loose hair	4.69	0.47	VHR
38.	Wear proper foot protection	4.51	0.62	VHR
39.	Wear a hard hat	4.52	0.61	VHR
40.	Wear hearing protectors	4.64	0.71	VHR
41.	Follow the manufacturer's directions for cleaning and	3.82	0.68	HR
	maintaining PPE.	<b></b>		
Ladde	r Safety			
42.	Position the ladder at a safe angle to prevent slipping	3.70	0.63	HR
43.	Make sure the base of the ladder has firm support and	4.10	0.65	HR
	the ground or floor is level.		3.50	
44.	Check the condition of the ladder before using	4.09	0.48	HR
45.	When using a stepladder, make sure it is level and	3.63	0.26	HR
	fully open	5.50	3.20	
46.	Follow the manufacturer's recommendations for proper	3.88	0.60	HR
. • •	use	5.50	2.50	

Analysis of mean responses of the respondents revealed that all items in Table 2

were adjudged as required with the mean values ranging from 3.63 to 4.85. From the analysis, it

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implies reveals safety rules such as easy identification of electrical hazards and safety practices such as planning your work and plan for safety; avoiding wet working conditions and other dangers; use of proper wiring and connectors; use and maintain of tools properly.; wearing correct

personal protective equipment (PPE) and adhering to ladder safety procedures are the required workers' safety rules practices needed for effective job performance of electrical/electronics technology graduates.

**Table 3: One** Way Analysis of Variance (ANOVA) For Mean Responses of Electrical/Electronics Lecturers and Industrial Personnel on Management Safety Practices Required for Effective Job Performance of Electrical/Electronics Technology Graduates

Source of	Sum of	df	Mean	f-ratio	f-value	Decision
Variance	Square		Square			
Between	6.564	1	6. 564	1.56	4.13	Accept
Within	143.112	34	4.209			
Total	149.676	35				

P < 0.05.

The above table revealed that F-ratio (1.56) is greater the F-value (4.13), therefore, the hypothesis which states that there is no significant difference in the mean responses of electrical/electronics lecturers and industrial personnel on management safety practices required for effective job performance of

electrical/electronics technology graduates was accepted. This further implies that both electrical/electronics lecturers and industrial personnel agreed on mean responses on the management safety practices required for effective job performance of electrical/electronics technology graduates.

**Table 4:** One Way Analysis of Variance (ANOVA) For Mean Responses of Electrical/Electronics Lecturers and Industrial Personnel on Management Practices Required for Effective Job Performance of Electrical/Electronics Technology Graduates

Source of Variance	Sum of Square	df	Mean Square	f-ratio	f-value	Decision
Between	8.114	1	8. 114	2.43	4.13	Accept
Within	113.342	34	3.334			
Total	121.456	35				

P < 0.05

The above table revealed that F-ratio (2.43) is greater the F-value (4.13), therefore, the hypothesis which states that there is no significant difference in the mean responses of electrical/electronics lecturers and industrial personnel on workers' safety rules practices required for effective job performance of electrical/electronics technology graduates was accepted. This further implies that both electrical/electronics lecturers and industrial personnel agreed on mean responses on the workers' safety rules practices required for effective job performance of electrical/electronics technology graduates.

### **DISCUSSION**

This study revealed that supervisory, managerial as well as environmental health and safety responsibilities skills are the required management safety practices needed for effective job performance of electrical/electronics technology graduates. This is in agreement with the findings of Boustras, Hadjimanolis, Economides, Yiannaki and Nicolaides (2015) where they stated that management practices in health and safety showed that safety at work in a small scale firm's needs improvement on training, supervisory and managerial responsibilities, and safety policy formulation. Awwad, El Souki, and Jabbour (2016) further revealed that construction

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safety practices and challenges in a developing country, found availability of construction labour safety law but lacks necessary awareness, absence of monitoring supervision inadequate managerial support from all the participants concerned with implementations of safety practices on sites. Wachter and Yorio (2014) suggested that when organizations invested in a safety management practices they approached towards improving the performance of accident reduction/prevention and the occupational safety. Such organizations stated that they also cared for winning the hearts and minds of their workers thanks to management practices systems in order to develop and improve organizational commitment in workers. As safety performance decreases the accident rate, personnel injuries and material damage decrease and working conditions enhance simultaneously resulting with higher job effectiveness. This finding reveals the management safety practices required job effective performance for electrical/electronics technology graduates which imply that if these management safety practices are put in place at the work place, there will be less hazards such as accidents and injuries which will increase the iob performance electrical/electronics technology graduates.

Furthermore, findings revealed workers' safety practices required for effective job performance of electrical/electronics technology graduates, it reveals that safety rules such as easy identification of electrical hazards and safety practices such as planning your work and plan for safety; avoiding wet working conditions and other dangers; use of proper wiring and connectors; use and maintain of tools properly; wearing correct personal protective equipment (PPE) and adhering to ladder safety procedures are the required workers' safety rules practices needed performance for effective job electrical/electronics technology graduates. This is in agreement with the findings of Shamsuddin, Ani, Ismail, Ibrahim (2015) workers' knowledge and understanding of safety practices at work setting remained vital in promoting safety among themselves on construction site.. This can be achieved according to Pisaniello et al., (2013) by standardizing students' training using case studies approach in teaching and learning occupational safety in tertiary institutions, because this will involve student's participation in Safety practices and any lesson learnt will greatly impact their understanding. Therefore, the Safety practices for effective job performance of electrical/electronics graduates starts from the learning OSH in schools.

#### **CONCLUSION**

Safety as a fundamental human right is a primary demand of the majority of governments and citizens. Furthermore, survival of the organizations in exceptional circumstances such as economic crisis, natural disaster so on depends organizational commitment and the contribution to the organization of well trained and experienced employees. The benefit of OSHP is to maximize the organization performance which increased the productivity because the accident had been prevented. The most common hazard in the interviewed industry is airborne hazard and the most common injury or accident is slips and trips. By applying the Occupational Safety and Health Practices, the accident and injury happen in the workplace will relatively reduce. Many research results support that Occupational health and safety practices influence employees' attitude and behaviour remarkably, which in turn relation with job satisfaction, organizational commitment, job performance, intention to leave are taken into Sustaining qualified consideration. resources to compete in today's competitive working life is very important. According to the principle of reciprocity, Occupational health and safety practices as perceived organizational support will yield work from electrical/electronics graduates for the benefit of the organization.

#### **RECOMMENDATIONS**

Based on the findings of this study, the following recommendations were made:

- Management should increase the frequency of the supervision of safety practices and training program to ensure the employees are aware of the safety rules.
- Moreover, the employers should tighten the control over for the employee to wearing the PPE in the workplace and give the warnings or even penalties for



- the worker who was not wearing the PPF
- The management also can improve the workplace ergonomic which is design the workplace to make it fits to the worker to provide them a comfortable working environment, it can maximum the productivity and reduced the hazard in the workplace.

#### **REFERENCES**

- Ahmad I, Qadir S, Muhammad, Yasir, Irfanullah M, Khan MA, et al. (2014). Knowledge, Attitude and Practice related to occupational health and safety among textile mills workers in Dera Ismail khan. Gomal J Med Sci; 10:1-5
- Akinwale A. A. and Olusanya O. A. (2016). "Implications of occupational health and safety intelligence in Nigeria," Journal of Global Health Care Systems, 6(1), pp.1-13, 2016. www.jghcs.inf
- Aliyu A. A. & Shehu A. U. (2006). Occupational hazards and safety measures among stone quarry workers in Northern Nigeria. Nigerian Med Pract; 50:42e7.
- Alli, B.O. (2008). Fundamentals principles of occupational health and safety.

  International Labour Office ILO-Geneva
- Amponsah-Tawiah K, Dartey-Baah K. (2011) Occupational health and safety: key issues and concerns in Ghana. Int J Bus Soc Sci 2011; 14:120e6.
- Awwad, R., El Souki, O. & Jabbour, M. (2016).
  Construction safety practices and challenges in a Middle Eastern developing country. Safety science, 83, 1-11.
- Bhagawati B. (2015) Basics of occupational safety and health. IOSR J Environ Sci Toxicol Food Technol; 9:91e4
- Boustras, G., Hadjimanolis, A., Economides, A., Yiannaki, A., & Nicolaides, L. (2015).

  Management of health and safety in micro-firms in Cyprus–Results from a Nationwide Survey. Safety science, 79, 305-313.
- Federation, N. E. (2016). Proper Attention to Workers' Health and Safety has Extensive Benefits. Retrieved

- September 26, 2016, from Namibia Employers' Federation: http://www.nef.com.na/workBenefits.ph p
- Hamid, H. A. (2015). The Influences of Safety Culture towards Safety Performance: A Case of Convatec, Sungai Petani, Kedah.
- Heinrich HW, Peterson D & Roos N (1980), Industrial Accident Prevention, 5<sup>th</sup> Edition, Mcgraw Hill, New York
- Hughes, W. P. (2010). Built environment education, research and practice: Integrating diverse interests to make an impact In: Laryea, S., Leiringer, R. and Hughes, W. (Eds) Proceedings of West Africa Built Environment Research (WABER) Conference, Accra, Ghana, pp.1-8.
- Hussian, M. Y. (2013). The Relationship Between Safety Climate and Safety Performance. 1-81.
- Kolawole M. J. (2014). Assessment of Safety Measures on Building Sites (A Case Study of Minna, North Central Nigeria): Greener Journal of Environmental Management and Public Safety. 3. 001-00
- Mostafa N. S & Momen M. (2014). Occupational Health and Safety Training: Knowledge, Attitude and Practice among Technical Education Students. Egyptian J Occup Med:38:153-65.
- Munir A, Ashraf MA, Nasir A, Hensel O, Iqbal M (2012). Ergonomics and Occupational Health in Sugar Industry of Pakistan. Pak J of Life and Soc Sci 10:74-9
- Neale, R. (2013). Ten factors to improve occupational safety and health in construction projects. African Newsletter on Occupational Health and Safety, 23, pp. 52–54.
- Othman, M. B. (2012). Middle-Management Support and Safety Training Program towards Employees Safety Behavior. Kedah: University Utara Malaysia.
- Pingle S. (2012). Occupational safety and health in India: now and the future. Ind Health;50:167-71.



Pisaniello, D. L., Stewart, S. K., Jahan, N.,
Pisaniello, S. L., Winefield, H., &
Braunack- Mayer, A. (2013). The role of
high schools in introductory
occupational safety education—
Teacher perspectives on effectiveness.
Safety science, 55, 53-61.

Shamsuddin, K. A., Ani, M. N. C., Ismail, A. K., & Ibrahim, M. R. (2015) Investigation the Safety, Health and Environment (SHE) protection in construction area. International Research Journal of Engineering and Technology, 2(6), 624-636.

Shamsudin, C. S. (2016). Safety Management Practices and Safety Compliance: A Model for SMEs in Malaysia. International Soft Science Conference, 1-7.

Shekh, M. I. (2015). A Study of Health and Safety: A Study of Selected Employess in Innovative Cuisane Private Limited. Maharaja Sayajirao University, 1-73.

Snyder CR, Lopez SJ, Pedrotti JT. (2011).

Positive psychology: the scientific and prac- tical explorations of human strengths. Thousand Oaks (CA): Sage Publications Inc.;

Taufek, F. H. (2016). Safety and Health Practices and Injury Management in Manufacturing Industry. 7th International Economics & Business Management Conference, 705-712.

Vinodkumar, M. N. (2010). Safety Management Practices and Safety Behavior: Assessing the Mediating Role of Safety Knowledge and Motivation. Accident Analysis and Prevention. Accident Analysis & Prevention, 2082-2093.

Wachter, J. K., & Yorio, P. L. (2014). A system of safety management practices and worker engagement for reducing and preventing accidents: An empirical and theoretical investigation. Accident Analysis and Prevention, 68, 117-130. <a href="http://dx.doi.org/10.1016/j.aap.2013.07.029">http://dx.doi.org/10.1016/j.aap.2013.07.029</a>

Warner, D. (2013, May 17). What are the Benefits of Occupational Health and Safety Practices? Retrieved September 26,

2016, from Ready to Manage: http://blog.readytomanage.com/whatare-the-benefits-of-good-occupational /

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