

UNIVERSITY OF EDUCATION, WINNEBA
COLLEGE OF TECHNOLOGY EDUCATION, KUMASI

ASSESSING THE AWARENESS AND WILLINGNESS TO USE HEALTH AND
SAFETY PRACTICES AMONG WOODWORKERS IN GHANA – A CASE
STUDY OF WEST GONJA DISTRICT OF GHANA



KWAKU KUMATEY

DECEMBER, 2016

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A Dissertation in the Department of CONSTRUCTION AND WOOD
TECHNOLOGY EDUCATION, Faculty of TECHNICAL EDUCATION, submitted
to the School of Graduate Studies, University of Education, Winneba in partial
fulfilment of the requirements for award of the Master of Technology Education
(Wood Technology) degree.

DECEMBER, 2016

DECLARATION

STUDENT'S DECLARATION

I, Kwaku Kumatey, hereby declare that this dissertation, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged is entirely my own original work and it has not been submitted either in part or whole, for another degree in this university or another university.

SIGNATURE.....

DATE.....



SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this dissertation were supervised by me, in accordance with the guidelines for supervision of dissertations laid down by the School of Research and Graduate Studies, University of Education, Winneba.

NAME OF SUPERVISOR: DR. FRANCIS BIH

SIGNATURE.....

DATE.....

ACKNOWLEDGEMENTS

I am full of thanks to God for giving my able supervisor the health, wisdom and strength to take me through this project, I also appreciate all efforts from my family, friends, and to my colleague students and staff of department of the construction wood technology.



DEDICATION

The work is dedicated to my wife, Iddrisu Rumasi and my Son Kenneth K. Kumatey.



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ABSTRACT

The wood industry contributes about 11% of the Gross Domestic Products (GDP) in most developing countries. However, woodworkers suffer from predictable but preventable health problems as a result of their work. This study therefore assessed the willingness and awareness to use health and safety practices among small scale woodworkers. The study adopted descriptive survey design involving the administration of questionnaire to 50 small scale woodworkers. Data collected was analysed using SPSS and presented with descriptive statistics. The findings of the study indicated that the woodworkers were ignorant of the basic working environment safety practices. The respondents were unaware of obligatory use of personal protective equipment. Management of the various woodworkshops failed to provide vital safety and health equipment. There were lack of adequate supervision at various woodworkshops hence there were no strict adherence to health and safety rules at the workshop. However, the respondents were willing to adopt health and safety practices. The study recommended measures that may be adopted to create awareness and encourage woodworkers to willingly use health and safety equipment to ensure good health in the West Gonja district.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The wood industry plays an important role in the development of every nation especially in the developing countries. Typically, Giang and Pheng (2010) indicated that construction industry contributes to 11% of gross domestic products (GDP) in most developing countries. They espoused that many construction activities have inherent health and safety risks such as working at height, working underground, working in confined spaces and close proximity to falling materials, handling load manually, handling hazardous substances, noises, dusts, using plant and equipment, fire, exposure to live cables, poor housekeeping and ergonomics.

According to Muiruri and Mulinge (2014), health and safety accidents are relatively higher in the urban centres due to the fact that high rise buildings remain predominant with the fast-growing complexities of domain-wide construction projects to cope with modernizing cities arena and high demand for housing, offices, services and other infrastructures due to the high urbanisation. Despite its importance the wood work industry is considered as being risky with frequent and high accidents rate and ill-health problems to workers, practitioners and end user (Hudges and Ferrett, 2008).

It is commonly acclaimed that dust and noise are most at times accepted as just part of the job, as a result, many wood workers across the world suffer from predictable and preventable health problems caused by their work. Typically, skin and respiratory problems, long term aches and pain and deafness. The wood work industry relies on the skills of machine operators, rather than the use of proper physical safeguards to prevent accidents and ill health. Hudges and Ferrett (2008) posit that there are

however countless employers who put profits before people and who routinely abuse workers' rights. However, many laws exist in many countries to protect workers' health and safety. The International Labour Organisation also has a number of International Standards, such as Conventions, Recommendations, Codes of Practice and Guidelines that may help.

According to Muiruri and Mulinge (2014), it is important to focus on the following as these risks are involved in about 90% of all fatal and major injuries reported in the woodworking industry: machinery safety; manual handling; falls from a height; slips and trips; stacking of timber and transport. The authors further posit that in woodworking there is a wide range of health risks causing a variety of illnesses. In many cases the problems go unnoticed, slowly getting worse until they become permanent, often disabling or even fatal.

Smallwood et al(2008) labels wood work industry as very hazardous. The author further asserts that wood workers are two to three times more likely to die on the job than workers in other industries while the risk of serious injury is almost three times higher. Health and safety therefore is an economic as well as humanitarian concern that requires proper management control. Giang and Pheng (2010) are of the view that one of the most common myths that have plagued this industry is that health and safety comes at a cost. The authors argue that wood work managerstend to believe that introducing and executing measures that ensure health and safety in wood work sectorwill lead to higher cost, and hence lower profitability. However, Mohammed (2003) argues that it has been proved that investment in health and safety actually increases the profitability by increasing productivity rates, boosting employee morale and decreasing attrition. Muiruri and Mulinge (2014) argued that the use of

hazardous chemicals is common in the woodworking industry, typically, timber preservatives; solvents in paints, glues, varnishes and lacquers; and paint stripping chemicals. The authors are of the opinion that these chemicals can cause skin problems, brain damage, organ damage (such as liver and kidneys) reproductive problems, such as reduced fertility, damage to the unborn child, and miscarriages. These include well known as cancer causing chemicals, such as formaldehyde, which is commonly used in the manufacture of plywood, Medium Density Fibreboard (MDF) and chipboards. Mohammed further explained that wood worksafety and health management deals with actions that managers at all levels can take to create an organizational setting in which workers will be trained and motivated to perform safe and productive construction work. Tami and Fung (2008) has indicated that, compared with other personal protective equipment (PPE), like safety helmets or safety shoes, awareness of wearing respirators is low. Workers who did not wear safety helmets or safety shoes can receive immediate accidents, but the respirators are for health hazards. The workers would think that wearing the PPE give them inconvenience and discomfort during the operations.

In view of the above, this workinvestigates the real contemporary health and safety issues of workers in the small scale wood industry. These issues merit attention and action by, all those who share responsibility in the arena of safety and health. The focus of this study therefore lies in the health and safety of work environment during the wood processing and is concerned with the management of health and safety particularly the measures that are put in place, the challenges encountered in the health and safety management and the adequacy of the enforcement mechanisms on health and safety in the small scale woodworkindustry.

1.2 Statement of the Problem

Mohammed (2003) argues that the woodwork industry is concurrently recognized as a major economic force and one of the most hazardous industries. The author further maintained that accidents not only result in considerable pain and suffering but marginalize productivity, quality and time and negatively affect the environment and consequently add to the cost of construction. Considering the adverse impacts of accidents, wood work health and safety management is of genuine concern to all stakeholders in the wood industry. In spite of wood work health and safety management being genuine concern to stakeholders in the industry, small scale wood workers in the West Gonja district in the Northern region seems not to have anything to do with health and safety practices in their various workshops. Most workers are seen at their workshops with anything they call clothing “working jeer”. They seem not be aware of health and safety measures which they need to comply for self-protection and convenient working environment. The small scale wood workers do not in any way protect themselves while working neither do they show any willingness to adopt any health and safety precautions. A personal and close observations made indicates that, the rate at which both minor and major accidents are occurring at the various wood work sites are very alarming. Almost everyday workers report of an injury been minor or major. These injuries are treated in the work shop with any lubricant they lay hands on when the injury is considered a minor one. On the other hand, the victim is sent to a nearby chemical shop for first aid when the injury is a major one. This increased in workshop accidents and the informal way of treatment has prompted the researcher to investigate wood workers awareness of health and safety measures needed in place to solve these unforeseen events. Hence the study to assess the willingness and awareness to the use health and safety

practices among small scale woodworkers in the west Gonja district.

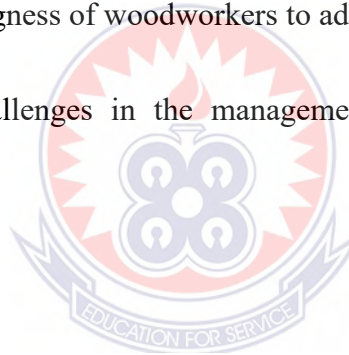
1.3 Purpose of the Study

The purpose of this study was to assess the awareness and willingness to the use health and safety practices among small scale woodworkers in the WestGonja District of Ghana.

1.4 Objective of the Study

To accomplish the purpose, the following specific objectives are sought.

1. To assess the level of awareness of small scale woodworkers on health and safety practices related to their job.
2. To evaluate the willingness of woodworkers to adopt health and safety measures.
3. To examine the challenges in the management of health and safety issues in woodwork industry.



1.5 Research Questions

To achieve the objectives of the study, the following research questions are put forward to guide the study.

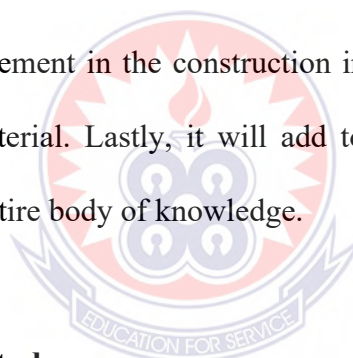
1. What are the health and safety measures used by woodworkers in West Gonja District of Ghana.
2. How do woodworkers rate their willingness to adopt health and safety measures in their work?
3. What are the challenges in the management of health and safety in wood construction firms?

1.6 Significance of the Study

The study will provide useful information for the various stakeholders in the wood construction industry in Ghana. It will bring to the notice of the workers the various health and safety hazards associated with their work. This will enable the workers to adopt the good health and safety measures to improve their health.

The study will also bring to the known the attitude and perception of woodworkers on health and safety. This will help the various stakeholders to come out with policies and laws to regulate the activities of the work construction industry.

The study will also assist researchers who shall conduct further/similar studies in health and safety management in the construction industry. Researchers will use the work as a reference material. Lastly, it will add to the existing knowledge on the subject matter and the entire body of knowledge.



1.7 Limitations of the Study

The researcher was restricted by a lot of factors such as time. The researcher was still attending lectures and working whilst the work was being done. This limited the researcher's ability to include a large sample size for the study. The results might have been different had a large sample size been taken. Financial constraint also had an effect on the research. Some of the respondents were reluctant to give certain vital information needed by the researcher. Some too collected the questionnaires with the view of returning them at the right time and yet never returned.

The research was also limited in the sense that a section of the population was used for the study. This is common with most research projects as it is impossible to

engage the whole population for a study. However, greater efforts were made to gather sufficient and relevant data for the study. Services of research assistants in the department were obtained to identify respondents.

1.8 Scope of the Study

This study is focused on examining the willingness and awareness to the use health and safety practices among small scale woodworkers in the Gonja West District of Ghana. Moreover, the study is theoretically and empirically limited in scope to the following objectives:

1. To examine the perception of health and safety hazards used by woodworkers.
2. To evaluate the perception, attitude and willingness of woodworkers to adopt health and safety measures.
3. To examine the challenges in the management of health and safety issues in wood construction firms.

Reference to the topic will reveal focus on Gonja West District of Ghana. Really the intention of this study was to cover a wider scope in Ghana. However, due to especially the financial constraints, the study was restricted to Gonja West District. This should not minimise the importance of the findings because, Gonja West District is an important commercial centre.

1.9 Organization of the Study

This study consists of five chapters, chapter one deals with the background of the study, the statement of the problem, research questions and objectives of the study, significance and organization of the study. In chapter two the researcher reviewed related literature whiles chapter three deals with the research methodology used in the

study. Other aspects of chapter three describes the research design, the population sample and sample procedures, data gathering instruments and data collection procedures of the study, methods of data analysis. Chapter four describes the research findings and the discussion of the main findings and chapter five presents the summary of the findings, conclusions and recommendations and suggestions for further research.



CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter focuses on a review of relevant literature on the subject matter presented by various researchers, scholars and authors. This chapter summarizes literature that has been reviewed for purposes of the study. The literature review covers theoretical framework and empirical evidence. The empirical studies cover previous studies, findings and recommendation showing the research gap to be filled.

2.1 The Informal Economy and Social Protection in Ghana

Ghana is recognised by the World Bank as a low income country with 2007 Gross National Income (GNI) per capita standing at US\$590 (World Development Report, 2009). In 1998/1999, the World Health Organisation (2008) indicated that the incidence of poverty was projected to be 45% at the \$1 a day mark. However, the principle trend throughout the 1990s has indicated an overall improvement in poverty levels. Heintz (2005) reported that the levels of formal employment in Ghana are very low, with an estimated 8.7% of the total labour force formally employed. In a corresponding manner, Heintz (2005) indicated that the informal employment accounts for 91.3% of total employment. Again, 53.9% of the total labour force works in the informal agricultural sector whilst 37.4% works in the non-agricultural informal sector. According to Alferts (2009), it is commonly admitted that informal work is associated with a high level of risk and informal work in Ghana is no exception to this rule. Notwithstanding this fact, and despite the fact that the labour force is clearly dominated by the informal work, informal workers are mostly ignored in the design of national social protection schemes in Ghana (Atim *et al.*, 2009). Alferts (2009) explains that the Social Security and National Insurance Trust (SSNIT) which is the

major Ghanaian retirement insurance body, was for many years accessible only to formal workers and work Medicare schemes in the formal sector tended to be the only large scale health insurance available. Informal workers therefore had to rely solely on informal social protection mechanisms such as susu collection (informal small scale savings schemes) and market trader association networks. However, there seems to be a change of affairs as far as these social protections to the informal sector is concerned. For instance, in 2008, SSNIT introduced a savings and retirement scheme for informal workers, and a new National Health Insurance Scheme (NHIS) was introduced in 2003. As with the SSNIT scheme, the Ghana NHIS has been designed specifically to incorporate informal workers.

Alfers (2009) argues that although the NHIS presents a huge advancement in acknowledging the health needs of informal workers in Ghana with regards to access to curative care. However, the author further maintained that much little attention has been devoted to the preventive health needs of informal workers in the design of social protection schemes or in national policy. This is however, not unexpected looking at the lack of data on work related ill-health and injuries in the country. There seems to be some official government data on formal sector work related injuries, it is however argued that this data is not reliable and does not represent the whole formal workers. However, research studies which have been conducted privately have some data on occupational injuries and disease in Ghana, although few of these appear to have focused explicitly or exclusively on informal workers. Notable among these researches was the study conducted by Mock *et al.* (2005), who carried out a household survey of occupational injuries amongst 21,105 individuals in both urban and rural areas of Ghana. The result of the study showed that occupational injuries had greater fatality rates than non-occupational injuries.

According to Muiruri and Mulinge (2014), the woodworkers are open to hazards of occupational diseases and injuries and the adverse effects of excessively long hours of work. Machines, plants and other sophisticated equipment pose danger to the operators, who in most cases do not have prior skills for operating such machines or plants. The culture of the woodwork industry in developing countries does not promote health and safety. Again, Alferts (2009) argues that a number of factors having a negative impact on health and safety management in developing countries which include poor infrastructure; problems of communication due to low literacy level; non availability of equipment; unregulated practices on construction sites; extreme weather conditions; adherence to traditional methods of working; improper use of equipment and corruption.

2.2 Health and Safety in the Work Place

The International Labour Organization (ILO) (2001) defined occupational health and safety as the prevention and maintenance of the highest level of physical, mental and social well-being, the prevention of ill-health among workers caused by their working conditions. Muiruri and Mulinge (2014) also defined occupational health and safety as the protection of workers from factors that negatively affect their health in their employment, and the placing and maintaining workers in occupational environments adapted to their individual and psychological conditions. According to Hughes and Ferret (2008), safety means a state in which no danger of a damage causing accident exists. The authors further explained that health is the protection of bodies and minds of people from illness resulting from materials, processes or proceeding used in the work place whereas safety is protection of people from physical injury.

Tam and Fung (2008) assert that hazards exist at every job site. The authors further argued that hazards must be controlled if job is going to be completed in a right way. A hazard has the potential to cause harm and risk as a function of the likelihood of the risk event and its consequence should it occurs. Murie (2007) also contends that a hazardous situation exists when someone is at risk of being wounded or is open to a hazardous environment that could affect their health. The author maintained that health and safety hazards may or may not develop prompt symptoms, but it has been gaining wider recognition in working environment.

Hughes and Ferret (2008) posit that among these dangers are heat, radiation, noise, dust, shocks and vibrations, and toxic chemical. Therefore, the hazard is a condition or changing set of circumstances that presents a potential for injury, illness or property damages. In spite of this, conditions at work and in the work environment for many occupations and in many countries still involve a distinct and even severe hazard to health that reduces the well-being, working capacity and even the life span of working individuals. In the opinion of Murie (2007), a high level of occupational health and safety leads to the achievement of material and economic aims and provides high quality and performance in working life.

2.3 Global Situation of Health and Safety Hazard on Construction Sites

Health and safety risks associated with woodwork are always a grave concern for both practitioners and researchers all over the world (Phoya, 2012). ILO (2005) contends that the wood production industry has been regarded as the most hazardous place in which to work with a high level of health and safety risks. By their estimation, ILO asserts that at least 40,000 fatal accidents happen in a year in woodworkshops around the world, which is one in nine of all fatal work related accidents. In the same vein,

occupational health and safety statistics presented by different researchers (Lingard and Rowilson, 2005, Smallwood et al., 2008, Hinze, 2008), revealed that, the injury and fatality rate in is very high in comparison with other sectors of industry in the majority of countries.

Moreover, according to Lingard and Rowilson (2005), it has been documented that 25–40% of fatalities in the world's occupational settings are contributed to by woodworks and construction (ILO, 2005). Based on fatality statistics, different countries indicates that the woodwork industry accounts for 8% of fatal industrial accidents across the European Union (EU), however it employs less than 5% of the working population. In the United States of America (USA) for instance, the sector accounts for 6% of fatal accidents and only 2% of employment, and in Japan woodwork fatalities account for 10-15% of industrial fatal accidents (ILO, 2005).

In the developing world, the risks associated with woodwork are much greater (Hughes & Ferret, 2008). According to Tetteh (2003), data available indicates that they are three to six times greater. In comparison with developed countries, Hämäläinen et al. (2006), argue that construction and woodwork sites in developing countries are ten times more dangerous. Other research projects (ILO, 2001 and Murie, 2007) conducted in developing countries supports evidence of this comparative high proportion of accidents on construction and woodwork. However, ILO (2005) argues that there is a challenge of reporting accidents in developing countries. From this position, health and safety is a global issue which warrants a different approach to solve it. Improving health and safety in the industries therefore remains a priority.

2.4 Health and Safety Hazard in Africa and Developing Countries

Traumatic occupational accidents and diseases in the wood sector represent a significant public health concern. Jerie (2012) argues that work-related accidents induce enormous emotional and financial costs to families and to society. Unfortunately, the author contends that work related accidents and diseases continue to be serious in the world. Subodh and Amit (2000) also argues that the economic and human costs of occupation related accidents and diseases remain high. The ILO (2008) estimates that more than 2 million workers die each year from work related accidents and diseases and this is probably an underestimation.

According to the estimation of the International Labour Organisation [ILO] (2008), workers suffer 270 million accidents and at least 335000 fatal injuries annually. Jerie (2012) also contend that evitable occupational diseases affect about 160 million people every year. Jerie (2012) further argued that international concern and awareness of the problem of occupational diseases and accidents remains modest. On the other hand, Muchemedzi (2007) observed that the global work force stands at 2.8 billion with approximately 300 000 employed in the wood and wood products industry and globally, 2.2 million work related fatalities and 270 million occupational injuries occur annually.

It is reported that the largest number of fatalities is associated with the timber industry with 92.4 deaths per 100,000 workers in 2006, a decrease from 118 in 2002 (Jerie, 2012). The author further reported that in 2008 the number of fatalities increased to 116 deaths per 100,000 workers. An assertion was also made by Tiedemann (1998) that the majority of accidents related to wood processing occurred around 10:45am. This suggests that continuous longer work duration increases the risk of errors and near errors, and decrease the workers vigilance. In 1998 Europe's wood and wood

products industry suffered around 90,000 work accidents involving more than three days off-duty from work. Muiruri and Mulinge (2014) also reported that timber processing accidents and illnesses rose by 5.0% in the period 1996 to 1998. In Italy, Boy (2002) reported that the wood processing industry in general rates as one of the most hazardous occupations. Rotating devices, cutting or shearing blades, in running nip points, and meshing gears are examples of workplace injuries, while crushed hands, severed fingers, amputations and blindness are typical woodworking accidents. Koehn et al. (2000) posit that there are frequently no special provisions for construction workers' safety and the general conditions for workers are often not addressed. WHO (2005) argues that in many countries where safety legislation exists but the regulatory authority is very weak or non-existent, many employers will only 'pay lip service' to the regulations. Again, according to Muiruri and Mulinge (2014), there have been cases reported where first aid kits are provided on site 'for show' and never used by injured workers. Injuries are often not reported and the employer provides some form of cash compensation for an injury to the employee.

Colman *et al.* (2007) also added to the hazardous woodworking, high noise levels from operating machinery, dust conditions and work related muscular-skeletal disorders from repetitive movements that are likely to affect health of employees. Jerie (2012) reports that in Libreville, Gabon, the majority of formal employees are in the wood processing in which logs of wood are transformed into various finished products. The author contends that wood processing in Gabon is a dangerous occupation and it involves more than 30% of the active population. Colman *et al.* (2007) also accounted that during the 2007 and 2008 period accidents involving contacts with equipment exceeded all other events accounting for 64.1% of traumatic occupational accidents in wood processing.

Bean and Butcher (2006) contend that usually industry owners and managers do not provide sufficient maintenance and funds to buy protective equipment. This means that not much attention is thus given to the safety of processing machines, equipment and tools as well as their link to health requirements in such enterprises. It is expected that this study will assist in ensuring compliance to legal requirements by the woodworking enterprises in guaranteeing safe and healthy working conditions for the workers including an adequate regime for their rest and nutrition. According to Sohail, (2011), current practice in industry has tended to focus knowledge on production processes and profit at the expense of the health and safety of the worker.

2.5 Occupational Health and Safety Management in Ghana

In their study, Anaman and Osei-Asamoah (2007) defined occupational health and safety legislation as a means by which the work environment can be operated to ensure the safety, health and welfare of employees and persons likely to be adversely affected by the work environment are protected. In Ghana, Kheni (2008) noted that occupational health and safety legislation was adopted from the legal and institutional framework of British at the time when Ghana was a British dependency. The author further provided that the health and safety of workers in the mining and wood processing industries of Ghana prior to independence, was protected by the Factories Ordinance 1952. This remained the main occupational health and safety legislation in force until its repeal by the Factories, Offices, and Shops Act 1970.

Regulations made under the Factories Ordinance 1952 which remained enforce include:

- i. The Factories (Woodworking) Regulations, 1959;
- ii. The Food Factories (Welfare) Regulations, 1959; and

iii. The Factories (Docks Safety) Regulations, 1960.

Ghana's occupational health and safety legislation is influenced by the International Labour Organisation (ILO). Principal ILO conventions relating to occupational health and safety which have been ratified by Ghana include:

- i. Underground Work (Women) Convention 1935 (No. 45);
- ii. Radiation Protection Convention 1960 (No. 115);
- iii. Guarding of Machinery Convention 1963 (No. 119);
- iv. Hygiene (Commerce and Offices) Convention 1964;
- v. Working Environment (Air Pollution, Noise and Vibration) Convention, 1977; and,
- vi. Labour Inspection Convention 1947.

According to Alferts (2009), existing occupational health and safety legislation in Ghana is fragmented and limited in coverage. Some key economic sectors are not covered by the country's occupational health and safety laws. Alferts (2009) argued that a famous example is the agricultural sector, although it employs over 50% of the total workforce of the country. However, there is no form of occupational health and safety laws regulating the activities of the sector. Kheni (2008) asserts that this situation can be traced to the colonial rule in Gold Coast (Ghana), where more emphasis on labour relations in sectors of economy was placed on the formal employment relations. Tetteh (2003) commented on the shortcomings of occupational health and safety legislation of Ghana by noting that health and safety statutes evolve without due regard to already available ones, leading to fragmentation, overlapping areas of jurisdiction and inconsistencies in occupational health and safety laws of the country.

Alferts (2009) noted that Ghana lacks a policy that defines the responsibilities of stakeholders, namely; government, employers and employees. Alferts (2009)

maintains that without engaging the various stakeholders in the management of occupational health and safety, the right of workers to a right work environment will be denied in the informal sector of the economy which employs temporary labour. The woodwork industry in Ghana rely on a temporary workforce, invariably, such workers are illiterate who do not belong to any form of labour unions and are not covered by insurance schemes for damages and work related injuries.

2.6 The Factories, Offices and Shops Act and Health and Safety for workers

The Factories, Offices, and Shops Act 1970 takes care of factories, offices, shops, ports, and construction. The Act mandates the minister for manpower, development and labour to make regulations in respect of construction and woodworks to address specific hazards which include imposing duties on persons in respect of the hazards. From the Act, woodworks and construction businesses are required to register their sites (sections 6-8) and to report workplace accidents and dangerous occurrences to the Factory Inspectorate Department.

The Act also requires shops, firms and factories to provide wholesome drinking water on their sites (20), toilet facilities on the sites (19), and personal protective equipment for their workers (25), and to take preventive measures to control or prevent specific hazards on sites. The Act names the hazards as; noise, vibrations, manual handling (26 and 27), and fire (31). The Act also requires medical supervision of the health of employees where necessary.

Section 33 to 35 of the Act also requires businesses to take measures at the workplace in respect of access and exit to the factory (site), the construction and design of structures to ensure the safety of workers, and users of facilities. Section 38 to 40 of the Act also calls for fencing and safeguards to be provided or constructed and maintained for the safety of persons at the factory (site). Records of lifting machines

and appliances are also required to be to be kept and they must be of sound construction, properly maintained and precautionary measures taken during their operation (37 and 43-47). Per the Act (sections 48 and 49), businesses are required to take precautionary measures to prevent injury and explosions because of dust, gas, vapour, present in the work environment.

The Act (36) provides that adequate and proper training should be given to machine operators and persons employed in processes likely to cause injury. Sections 30 and 51 of the Act also indicate that, the Minister may make regulations to protect the health, safety, and welfare of workers. Alferts (2009) however argues that there are a number of concerns regarding the implementation of the Act. First, Alferts (2009) posit that regulations are needed to set standards for specific situations of the act. Without these standards, employers wishing to comply with the requirements of the law will adopt subjective standards. Again, the author further argues that establishing compliance and enforcement networks is not covered by the Factories, Offices, and Shops Act which is the main occupational health and safety law of the country.

Cotton et al. (2005) also noted that the institutional and legal governance frameworks on occupational health and safety in developing countries have little impact. According to the authors, the majority of firms and workshops are small and medium enterprises that operates within their domestic markets where there is a relaxation of enforcement of health and safety standards and labour standards. Thus, the authors assert that enforcement of health and safety regulations remains a problem because of lack of enough resources available to institutions that are responsible for occupational health and safety administration.

Muiruri and Mulinge (2014) also argue that assert that the enforcement mechanism for health and safety can be described as weak and wanting. The authors noted that

the unavailability of pressure which can be brought to bear on occupiers/contractors of construction means some less scrupulous owner/managers normally capitalise on the lack of punitive deterrent measures to place economic gain above other business objectives including health and safety. Proper healthy and safety mechanisms not only contribute to the well-being of the worker but the effectiveness of the entire project.

2.7 Types of Health and Safety Hazards faced by Woodworkers

Various researchers have categorised health and safety hazards into two categories, namely, the physical injury hazards and the Ill-health hazards (Davies & Tomasin, 1996; HSE, 1998; Murie, 2007 and Alfery, 2009). Alfery (2009) posits that hazard of physical injury include death consequences. Murie (2007) also contends that hazard of ill-health can only be notified after a long period and shall cause sickness or death after a certain period of time. According to Alfery (2009), the following are the common hazards that occurs at the woodwork and construction sites irrespective of the physical injury or ill-health problems.

2.7.1 Painting and Spraying

According to Alfery (2009), many paints, varnishes, stains and thinners used in the woodworking industry give off vapours which are easily ignited and are also hazardous to health. The author argues that such hazardous substances are injurious to workers and creates lungs related diseases such as asthma. As a precautionary measure, Alfery (2009), recommends that highly flammable liquids must be stored in a fire-resistant store. The store should be well-ventilated, secure, leak-proof and outside if possible. Small quantities of flammable liquids may be stored inside in a leak-proof, secure and well-ventilated fire-resistant cabinet. It is also argued that all potential ignition sources (for example, naked flames, unprotected light fittings and

powered hand tools) are not used in the spray area and that suitable fire-fighting equipment must be provided. Managers must also make sure that employees wear appropriate personal protective equipment, such as breathing masks, gloves, eye protection and overalls.

2.7.2 Wood Dust

Jerie (2012) argues that wood dust is made up of tiny particles of wood produced when wood, chipboard, hardboard and other forms of boards are processed or handled. The danger with wood dust is that wood dust burns easily if it is set on fire. When this happens, Alferts (2009) argues that it can destroy or seriously damage buildings and machinery if it causes a fire or an explosion. Alferts (2009) contends that fires can be started by badly maintained heating units, overheated electric motors and sparks from cigarettes or open wood burning stoves.

Alferts (2009) further posits that concentrations of small particles of wood dust in the air can form a mixture that will explode if set on fire. Such mixtures are usually found in dust-extraction equipment. This equipment can be destroyed unless you take special measures to prevent an explosion. Again, Jerie (2012) asserts that wood dust on the floor of a workshop can also create a serious risk of slipping. Jerie (2012) further claims that regular contact with wood dust can cause skin problems such as dermatitis and breathing in wood dust can block your nose and can cause rhinitis, asthma and a form of nasal cancer.

According to Alferts (2009), following the simple steps below would help prevent employees' health or building from being damaged by wood dust.

Where possible, use processes or methods of work that produce as little dust as possible;

Make available tools and equipment for activities which produce dust to stop the dust from entering the workroom, for example, local exhaust ventilation (LEV) systems at woodworking machines;

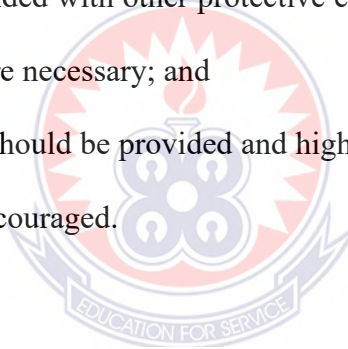
Ensure that machinery and equipment, including local exhaust ventilation systems, are maintained properly;

To prevent dust building up, clean around machines, walls, ceilings, ledges and other surfaces in workrooms. Suitable vacuum-cleaning equipment fitted with a HEPA (high efficiency particle attenuation) filter must be used;

Employees should wear suitable protective breathing equipment where measures taken to control airborne dust are not effective;

Employees must be provided with other protective equipment, such as eye protection, overalls and gloves, where necessary; and

Good washing facilities should be provided and high level of personal hygiene among the workers should be encouraged.



2.7.3 Noise

Jerie (2012) contends that some of the noisiest working environments are found in the woodworking industry. The author argues that over time, very loud noise from machinery in a workshop can seriously impair the hearing of workers. Very loud noise can also make talking to other people difficult and warning noises (for example fire alarms and reversing vehicles) may not be heard by workers.

As a simple guide, managers need to do something about noise levels in the workplace if employees or workers have to raise their voices to carry out a normal conversation when they are about two metres apart.

2.7.4 Working Environment

The International Labour Organisation (1999) reports that chemical substances are a major health hazard in the wood and construction industry. Since there are many chemicals used in the construction industry, which include insecticides, adhesives, cleaning agents, wood preservatives, fungicides, and paints among others. The ILO maintains that many of these chemicals are hazardous, with a potential to cause poisoning. It is argued that toxic substances can cause both acute and chronic effects resulting from exposure for a long period.

Jerie (2012) also submits that dusts from many sources are also a prominent hazard in construction. The author further maintains that silica and asbestos dust can permanently damage the lung tissue, whilst lead in dust is absorbed into lungs and enters the blood stream causing poisoning. According to the author, cement mixes is also a well-known cause of skin disease. Lead is found in electricity cables, pipes gutters and lead sheet roofs. Excessive absorption of lead can also cause constipation, abdominal pain, anaemia, weak muscles and kidney failure.

2.7.5 Fire

Fires are one of the most prominent health and safety hazards faced by wood and construction workers in Ghana. While some fires start out small, their severity is often exacerbated by a number of factors to do with the infrastructure, planning and design of the workshop (Jerie, 2012). Many shop are constructed from wood, which makes them highly flammable.

Complaints have been made by the Ghana National Fire Services (GNFS) of lack of access routes to the market and shops which are often blocked by the ad hoc placement of shops which means that it can take a long time for firemen to reach the fire. Once

the shops are on fire, the firemen are faced with the challenge of trying to access water. Accordingly, there are no easily accessible fire hydrants in most of public places and markets. They have either been covered up by rubble, stalls and goods, or they have been sealed off by the private water companies. Despite the fact that Ghana's National Building Regulations require local government to provide these in all official public places; most factories shops also lack fire extinguishers (Jerie, 2012).

2.7.6 Cuts and Accidents from Woodworking Machines

Muchemedzi (2007) observed that there are many accidents that occur at woodworking machines than at any other type of machine. The author maintains that woodworking machines often have high speed cutters which cannot be totally enclosed. Most accidents at woodwork shops happen at circular saws, planing machines, vertical spindle-moulding machines and band saws. Boy (2003) provides that the following simple steps will help to prevent accidents at woodworking machines.

Managers must make sure that employees are fully trained before they are allowed to work unsupervised at any woodworking machine;

Checks should be made that guards and other safety devices are provided and used;

Use a power-feed tool to feed wood into the machine whenever possible. If feeding the wood into the machine by hand, well-designed push-sticks or jigs should be used;

Machine controls are labelled, conveniently positioned and well maintained;

Machines that are not being used must be switched off;

Machines must be isolated from the electrical supply before changing cutters or carrying out maintenance work;

To prevent slips and trips, keep the working area around machines clear of obstructions and floors free from loose materials such as chippings or waste wood.

Keeping the workshop clean will also reduce the risk of fire or explosion;

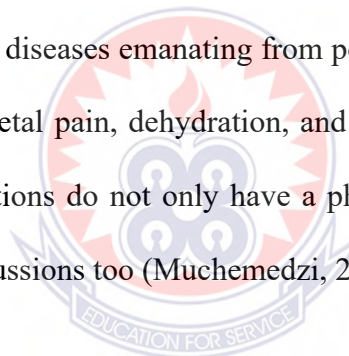
Ensure that there is good lighting and heating;

Suitable system for collecting wood dust should be provided and maintained; and

Employees should be encouraged to report any faults with machines or processes to their supervisor.

2.7.7 Physical and Psychological Effects

From the above discussion on the health and safety hazards faced by woodworkers, a variety of physical effects of unhealthy and unsafe work environments have been identified. These include diseases emanating from poor sanitation, such as malaria and diarrhoea, muscular-skeletal pain, dehydration, and headaches. It is also important to note that working conditions do not only have a physical effect on the traders, there are psychological repercussions too (Mucheemedzi, 2007).



2.8 Health and Safety Management

Muiruri and Mulinge (2014) explain that management of an organization plays a significant role in the implementation of controls for health and safety hazards and getting people in an organization to integrate health and safety into their operations. The authors maintain that health and safety plan, committees, risk management and assessment and health and safety analyses, are requirements of a health and safety management.

Phoya (2012) also posits that good supervision of site and workplaces is one of the requisite elements to maintain health and safe conditions as it can ensure the

implementation and development of health and safety policy. According to Murie (2007), general work supervisor, health and safety officer, health and safety supervision and foreman, on-site management staff, are responsible to plan, direct, help, train, coach and guide workers to perform safely. When these are done, unsafe condition and behaviour can be examined and thus instant remedy and improvement can also be given.

According to Tam and Fung (2008), the education level and health and safety awareness of frontline workers in the woodwork industry are relatively low. Training and guidance from management is therefore essential to modify the unsafe behaviour of workers. In other words, health and safety leadership is particularly important at the level of site supervisor. As such, site supervisors play a key role to ensure that an effective health and safety management system operates. It is also important to indicate that working effectively in supervision requires good communication skills. Phoya (2012) therefore argues that management team, especially senior managers, can communicate about the significance of health and safety objectives powerfully if they lead by example.

Tam and Fung (2008) are of the opinion that workers perceive what their superiors regard as important and act accordingly. Again, a regular health and safety visitations which shows an example of good and bad performance should be arranged. When this is done, it becomes easy for workers to practically understand health and safety issues.

Muiruri and Mulinge (2014) also contend that re-designing, re-specification and revision of construction methods should also be considered because they improve on-site health and safety performance.

2.9 Health and Safety Training

Training is a central unit of an effective health and safety program in every organisation (Tam & Fung, 2008). The authors argue that by providing proper and adequate training, it can identify responsibilities between management team and frontline workers. Murie (2007) also asserts that the main components of health and safety training should consist of a health and safety induction training and green card system.

Tam and Fung (2008) argue that it should be a requirement that every worker employed in a company undertake the health and safety induction training. Tam and Fung (2008) provides that the general and specific health and safety issues should consists of: employees' attitude on health and safety at work; general conditions of construction site; use of PPE; safe working procedure and guidelines; emergency measures and first aids; health and safety regulations and site health and safety rules; company health and safety policy; special aspects of project and potential hazard; and accident reporting and claim procedures.

Among these issues, Tam and Fung (2008) recommend that the training program should be planned to make sure that all employees realise and are aware of health and safety hazards to which they may be exposed and proper methods to be adopted to avoid it. According to Phoya (2012), it is therefore better to explain in details how the irrespirable particles penetrate through the smallest airways in the lung. The author further argues that the green card system is a mandatory basic health and safety training course for all employees. However, usually, it is a one-day course. Thus, Tam and Fung (2008) contend that there should be one compulsory or an individual section for the awareness of health and safety in the existing green card system.

2.10 Health and Safety Hazard Measures and Control

Muiruri and Mulinge (2014) contend that wood dust, resins used in some particle boards, adhesives, paint strippers, two-pack polyurethane paints and varnishes, stains and wood preservatives are examples of substances used in the woodworking industry which may be hazardous to people's health. It is therefore expected that employees can breathe in or swallow these hazardous substances for example if they get onto food or they can be absorbed through the skin through contact with the substance. The main health risks are occupational asthma and dermatitis.

Hazard control measures help to eliminate or reduce the risk of harm to workers is one of the most important activities in occupational health hazard management system. Phoya (2012) argues that this part of occupational health hazard management system requires employers to take all reasonable steps to eliminate or control identified hazards in order to make the workplace safer. Employers should check the legislation to determine if controls have been specifically prescribed for the jobs they do.

Lingard and Rowlison (2005) also indicated that when beginning to implement control methods in the workplace, a consideration must be given to the hierarchy of controls to determine which control methods will be the most effective in reducing the risk of injury or illness. Tam and Fung (2008) assert that there are three categories of hazard control, and control methods are often used in combination to ensure the best level of worker protection possible. These are engineering, administrative and personal protective equipment. Whatever control methods are used, the authors contend that employers must have a system that allows for regular checks to determine whether or not the controls are working as intended.

Engineering, according to Tam and Fung (2008) is the best method of hazard control, and involves engineering out or substitution of the hazard. Where possible, engineering controls should always be the employer's first option. Examples include: building a catwalk with handrails and replacing a portable ladder with a permanent access ladder for maintenance procedures; building a sound-dampening enclosure around a piece of loud equipment to reduce workers' noise exposure; and replacing a harmful chemical with a less hazardous product.

Tam and Fung (2008) further argued that administrative controls are the second most efficient method of hazard control which involves the implementation of practices, processes and rules to cut down the amount of exposure a worker is exposed to the danger. Examples of administrative controls include: providing emergency response training to all workers and conducting regular drills; developing and enforcing the use of practices and procedures for conducting a task safely; job rotation and posting signs to warn of high noise areas.

According to Muiruri and Mulinge (2014) Personal Protective Equipment (PPE) is the method of last resort, and should always be used in addition to other control methods.

Tam and Fung (2008) also argue that personal protective equipment is mostly the easiest to control and implement, however, it is normally the least effective. In some cases, employers supply workers with the needed personal protective equipment and in others, they may require workers to provide it themselves. In all cases, the authors posit that a formal training in the care, use, and maintenance of all PPE should be provided by the employer. Examples of Personal Protective Equipment include: safety glasses to protect the eyes from flying debris; hard hats to protect the head from falling objects and respiratory protective equipment to protect the lungs from harmful dusts and chemical vapours.

Muiruri and Mulinge (2014) also hold the view that a badly planned and untidy site is the underlying cause of many accidents. The result of this is falls of material and collisions between workers and plant or equipment. Space restraints, particularly in urban work sites, are always the biggest limiting factor and a layout which caters best for the safety and health of workers may appear to be difficult to reconcile with productivity. Proper planning by management is an essential part of preparation and budgeting for the safe and efficient running of a construction operation. There are many accidents due to tripping, slipping or falling over materials and equipment which have been left lying around, and stepping on nails which have been left projecting from timber.

In another study, Tam and Fung (2008) recommended that woodwork sites are dangerous places, and first aid and rescue equipment should always be available. The authors argued that what is needed depends on the size of the site and the numbers employed, but at least, a blanket and a stretcher should be available. Muiruri and Mulinge (2014) also contend that safety signs and signals are one of the main means of communicating health and safety information. This includes the use of illuminated signs, hand and acoustic signals (e.g. fire alarms), spoken communication and the marking of pipework containing dangerous substances. The authors maintained that traditional signboards, such as prohibition and warning signs, signs for fire exits, fire action plan notices (fire drills) and fire-fighting equipment are also considered to be safety signs.

Again, with regard to occupational safety and health, training is inevitable if proper control and safety measures are to be implemented. Training consist of instruction in hazard recognition and control measures, learning safe work practices and proper use of personal protective equipment, and acquiring knowledge of emergency procedures

and preventive actions (Gervais, 2006). Bell and Webster (2011) also argue that training also provide workers with ways to obtain added information about potential hazards and their control; they could gain skills to assume a more active role in implementing hazard control programs or to effect organizational changes that would enhance worksite protection. Tyres and Hicks (2012) also recommend that site managers should have a written safety policy for their firms setting out the safety and health standards which the firm aims to achieve.

2.11 The Enforcement of Health and Safety Hazard Controls

Muiruri and Mulinge (2014) argues that it is the duty of the employer to ensure that workers are informed of job-related hazards, trained in the methods used to control these hazards, and made accountable to use the controls in place. According to the authors, management and supervisors should always keep in mind that positive reinforcement also goes a long way in encouraging safe and healthy behaviours at the work site. Jerie (2012) also posits that communication and enforcement of the enforcement policy provides an avenue for management to exhibit their commitment to the health and safety management system and the wellbeing of their employees.

Colman *et al.* (2007) added to proactively avoid hazards caused by the breakdown of equipment, tools and machinery, employers should also develop a preventative maintenance policy and equipment maintenance schedule. Colman *et al.* (2007) maintained that equipment breakdowns can cause injuries, property damage, and costly production delays, all of which can be reduced by the implementation of a preventative maintenance system. Tam and Fung (2008) are also of the view that the standards for the maintenance program should be based on the manufacturer's

recommendations, industry standards, past incidents, and data from company hazard assessments.

Tam and Fung (2008) further added that a good preventative maintenance program must also include a requirement for workers to inspect their tools and equipment regularly. If a tool or piece of equipment is found to be defective, the authors recommend that it should be taken out of service (either be discarded, or tagged as defective and sent for repair).

Alfers (2009) also argues that an inspection program should clearly outline what needs to be inspected, who will be involved, how often the inspections should be performed, and who is responsible for corrective actions and follow-up. Again, Muiruri and Mulinge (2014) contend that the results of the inspection program will supply information on whether the hazard assessment requires review, preventative maintenance programs are effective, and employer training programs are adequate. When developing an inspection program the authors suggest that the following must be considered:

Specifically identify what needs to be inspected. The results of the formal hazard assessment and hazard control process can be used to determine what equipment and work sites need to be inspected. Also check the occupational health and safety management legislation to determine if there are specific inspection requirements relevant to the nature of your work.

Determine who will be assigned the responsibility to conduct inspections. This varies based on what is being inspected. Generally, worksite inspection tours are performed by a team. Inspections of specific pieces of equipment can be done by an individual, competent worker. The health and safety committee at the site, should be involved in the inspection process if the firm has one in place.

The firm must provide training for employees who are required to participate on inspection teams.

The results of the inspections (both positive and negative findings) must be made available to the workers, and should comprise of the expected timelines for follow-up action.

2.12 Challenges in the Management of Health and Safety

An account of evidence suggests the implementation of health and safety standards in the wood and construction industry is problematic because of their particular characteristics. A study conducted by Baldock et al. (2005) revealed noticed fluctuations in firms' health and safety practices. The external factors found in their study which influenced the businesses' decisions to improve health and safety included; regulatory enforcement activity, use of external assistance on health and safety and membership of trade associations. On the other hand, the size of construction firms (number of employees and turnover), growth performance and management experience were found to correlate with propensity to adopt health and safety improvement measures were the internal factors that affected a firms' health and safety practices.

A study by Subodh and Amit (2000) also suggests that the major challenges in the management of health and safety in the worksites noted by the survey included: inadequate personal and protective equipment; absence of safety and health committees; lack of top management support in the management of health and safety in construction sites; poor maintenance of personal protective gear; inadequate welfare facilities; inadequate enforcement mechanisms; unawareness of health and

safety matters among the workers and lack of equipped first aid kits on the construction sites.

According to Alfors (2009), welfare facilities were also noted as a major to woodworkers' health and safety challenge since they are not adequately provided as well as personal protective equipment. The author argues that some site supervisors indicated that lack of adequate funds, inadequate monitoring and evaluation, unavailability of personal protective equipment implementation programs as some of the factors that give rise to the health and safety management challenges.

According to Roa and Merisalu (2010), areas of operation have also been ascertained to relate to adoption of health and safety management practices. Even where businesses operate in the same industry, there can be visible variation in their health and safety practices depending on the nature of their products or services they render. In the woodwork and construction sector, Birchall and Finlayson (1996) found that, the effectiveness of health and safety management systems varies with organizational size and type of business activity. The authors argued that the huge numbers of woodwork industry in the economy of any country makes it difficult for enforcing agencies to reach them. Additionally, most woodwork firms are "invisible" thus making it difficult for safety inspectors to locate them.

Tam and Fung (2008) conducted a study on the challenges faced by woodwork and construction firms in the implementation of effective health and safety systems. It was suggested by the site supervisory staff and workers that the provision of protective gear, formation of safety committees, inspections by the government, and training and education as measures to mitigate some of the major challenges encountered. It was further realised that due to lack of enforcement mechanisms such as site inspections to check adherence to health and safety requirements on the various measures the

suggestions provided to improve the health and safety standards among small scale wood and construction firms still remain unimplemented.

It has also been identified that ignorance prevents woodwork firms from taking the opportunity to improve their competitive position through better health and safety management (Champoux & Brun, 2002). Woodwork firms have a preference for informal procedures over formal procedures and may therefore find it difficult adopting formal management procedures developed for large businesses. Health and safety management systems and practices successfully applied in large firms will therefore be unsuitable for woodwork firms unless they are modified to take into account, the informal culture of woodwork firms.



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the research methodology used in the study. The chapter reviews the basic research approaches available, which include the quantitative, qualitative and mixed methods approach. The chapter then discusses the method adopted in this study and its justification. The research design is illustrated followed by a discussion of population and sample selection and the methods used for data collection. The chapter ends with a discussion of the validity and reliability issues and data analysis method.

3.1 Research Design

This research design is one of several designs for conducting a social science research. Designs of a research might take the form of a case study, surveys, experiments, histories and archival analysis. This study employed a descriptive survey to collect data. According to Neuman (2000) descriptive surveys are appropriate for situations where the data to be collected are about self-reported beliefs or behaviour. Besides, it enables the researcher to collect data and compare many different variables at the same time without manipulating the study environment. Survey study is mostly employed to assess thoughts, opinions, and feelings. It is further asserted that survey study can be specific and limited. A survey is a splendid way to gather information from wide variety of respondents. This makes surveys relatively cost effective and that survey has the potential for generalized ability. Again, it is argued that, among all the data-collection methods, survey research is the best method to use when the study

aims to gain a representative picture of the attitudes and characteristics of a large group (Creswell, 2003)

3.2 Research Approach

Research approach has been defined as a systematic and logical procedure for solving a problem with the support of facts (Yin, 2003). Creswell (2003) provide that there are three principal approaches to research namely; qualitative, quantitative and mixed method approach. This study adopts the mixed method approach of gathering data.

Creswell and Clark (2007) argue that the mixed research approach is a combination of both quantitative and qualitative approaches to data collection, the analysis of data and other phases of the research process.

The mixed method approach tends to base knowledge claims on pragmatic grounds, whereby research problems can be understood better by employing both methods rather than by using only one method. Creswell and Clark (2007) posit that the mixed method approach involves collecting both numeric and text information, the researcher distributed a well-designed questionnaires alongside focus group discussion to solicit for both quantitative and qualitative data so as to best understand research problems, with the final database representing both quantitative and qualitative information.

3.3 Population

Population refers to the whole group that the study focuses on. The study's population comprised small scale wood firms in the Gonja West District of Ghana totalling up one hundred and fifty – seven (157). The population also is made up of managers/owners, operators and apprentices.

3.4 Sampling Size and Sampling Technique

Francis et al, (2010), defines sample as the number of observations that constitute and represents the population entirely. Mostly denoted by the letter 'n' the sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. In practice, the sample size used in a study is determined based on the expense of data collection, and the need to have sufficient statistical power.

Simple random sampling technique was employed targeting the workers and management of the wood processing enterprises. The samples were drawn from the total employees (owners, operators and apprentice) in each of the thirteen (13) firms under survey. The simple random sampling technique was used in the selection of the participants so as to ensure that each case in the population has an equal chance of being included in the sample to clear any doubts in the minds of respondents. The purpose of the study was made known to the workers. In all the available wood work firm visited, the researcher carried along cards with different colours marked with different inscriptions such as 'YES', 'NO', 'TRY', 'SORT', 'USE' on them. After consultations with the workers available, the cards were placed with the marks hidden. The workers were then asked to pick a card of their choice while in a queue. The researcher at the final firm also picked a card. All those who picked the card with the inscription as the researcher were chosen for the study. In all, sample of fifty (50) was considered for this research consisting of ten (10) owners, twenty (20) apprentice and twenty (20) operators.

3.5 Data Collection Instruments

Data collection instruments are the instruments used to gather applicable data for a study. Data collection instrument therefore comprises a set of tools such as questionnaires, interviews, discussions and observations that researchers use to gather relevant information from chosen respondents. For the study under review the study employed the use of questionnaire.

The questionnaire was aimed at determining the perception of the key participants of the critical risks identified. As the literature pointed out, risk assessment and communication greatly depends on how people involved in the process perceive risk, and so this stage was important to find out how key participants perceive various health and safety risks among small scale woodworkers.

There were four sections in the questionnaire: demographic information of respondents, health and safety measures used by woodworkers, the perception, attitude and willingness of woodworkers to adopt health and safety measures and the challenges in the management of health and safety issues in wood construction firms. To encourage participation in the study, the questionnaire was short, clear and simple and respondents were required to answer items based on closed-ended questions. The respondents were asked to indicate and rank the information needed to be disclosed in annual reports based on a 5-point Likert scale ranging from 1 (low) to 5 (very high). The questionnaire was distributed to fifty (50) respondents.

3.6 Data Validity and Reliability

The study did not take into account the bigwigs and individualities of respondents. This inspired the respondents to give candid, valid and consistent

answers to questions that were asked and thus made the data collection valid and reliable. Analogies of various conclusions made by various studies were carefully examined. Questionnaires designed for collecting data was critically designed in line with the literature review. In order to enhance the degree of validity, various sources of evidence were necessary. To minimize the possibility of the respondents not understanding the terminology and layout of the questions, the questionnaire was piloted on four apprentice respondents, three operator respondents and two manager respondents. Based on their feedback some alterations were carried out. In accomplishing the research, the researcher observed the highest level of ethical consideration. All information's were collected from the respondents out of their own freewill. The confidentiality of the information received and the secrecy of the respondents were protected. The final test was meant to analyse for precise level of measurement. The questions were responded with ease because participants were more familiar with the questions and wording. Then the scores were correlated using Pearson coefficient to determine reliability. A Cronbach's Alpha correlation coefficient of 0.83, 0.87 and 0.85 were obtained for items measuring health and safety issues, the willingness to adopt safety measures and the challenges of managing health and safety issues at the woodwork firms respectively. The correlation coefficient obtained indicates a reliability of the questionnaires used.

3.7 Data Analysis Method

In conducting the research, the researcher observed the highest level of ethical consideration. All information's were collected from the respondents out of their own freewill. Confidentiality of the information received and the anonymity of the respondents were protected. The information obtained from the respondents was used

only for this research. The field data were collated, sifted through and screened in order to address questions that have been answered partially or not answered. After screening, the open-ended questions were coded (i.e., the assignment of numbers or codes to responses to make them computer readable). After editing and coding, the data were entered into the computer using the Statistical package for the Social Sciences (SPSS) version 21 software. Before performing the desired data transformation, the data were cleaned by running consistency checks on every variable. Rectifications were made after verification from the questionnaires and the database was generated. The data were analysed using basically descriptive statistics involving mainly frequency distributions. The descriptive statistics allowed the researcher to use numerical values to represent scores in the sample. It also provides the researcher with data that allow for inferences on the population and direction for answering the research questions. The returned answered questionnaires were scored and coded for analysis and answering of the research questions. The percentage, mean and the standard deviation of the responses for each research question was given. Tables and charts were used for the presentation. A summary of the conclusion and findings were presented, based on the findings and supported literature.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

The project seeks to assess the willingness of woodworkers to use Health and Safety equipment during wood processing. This chapter presents the results and discussion of the data solicited from respondents.

4.1 Demographic characteristics of Respondents

In presenting the results and discussion of the data obtained from the field study, the physiognomies of the respondents were assessed. The outcome is presented in Table 4.1

Table 4.1 Demographic characteristics of respondents

Characteristics	Frequency	Percent
	n	(%)
Gender		
Male	42	84.0
Female	8	16.0
Age		
Below 25 years	8	16.0
25 – 35	26	52.0
36 - 40	9	18.0
41 - 50	4	8.0
Above 50 years	3	6.0
Position held		
Manager	3	6.0
Supervisor	3	6.0
Operator	10	20.0
Labourer	34	68.0
Educational level		
No formal education	13	26.0
MSLC/JHS	19	38.0
WASSCE	9	18.0
HND	5	10.0
First Degree	4	8.0
Working experience		
Less than 5 years	16	32.0
5 -10 years	25	50.0
11 – 15 years	4	8.0
16 – 20 years	4	8.0

Above 20 years	1	2.0
n= 50		

Presented in Table 4.1 are the demographic physiognomies of the respondents. The outcome shows that, out of the total fifty respondents who were selected for this study, majority (84%) were males while 16% were female respondents. This confirms the male domination in the woodwork industry. Again it was revealed that, more than half of the respondents (68%) were aged 35 years or younger. However, the remaining 32% were 36 years or older. This suggests that majority of the respondents were in their youthful age and represents the exact people who are on the field working. Considering the position held in various work places, Table 4.1 further reveals that 68% of the respondents were labourers'. The operators constitute 20% whereas managers and supervisor constitutes 3% each. A further assessment of their highest educational background brought to light that majority (64%) were respondents with MSLC/JHS certificates or had no formal education. About 18% also reported to have either HND or WASSCE certificate. A Few, 8% were first degree holders. This suggests that majority of the woodworkers in the small scale wood industry in the West Gonja district were basic educational learners. This was because higher educational certificate was not the bench mark for once acceptance into the industry. Finally, the respondents attested that, they have been working for 10 years or less. However, 18% of the respondents reported that they have been working for 11 years or more. This suggests that the respondents were experience in their work and were most likely to supply the right information needed for this research.

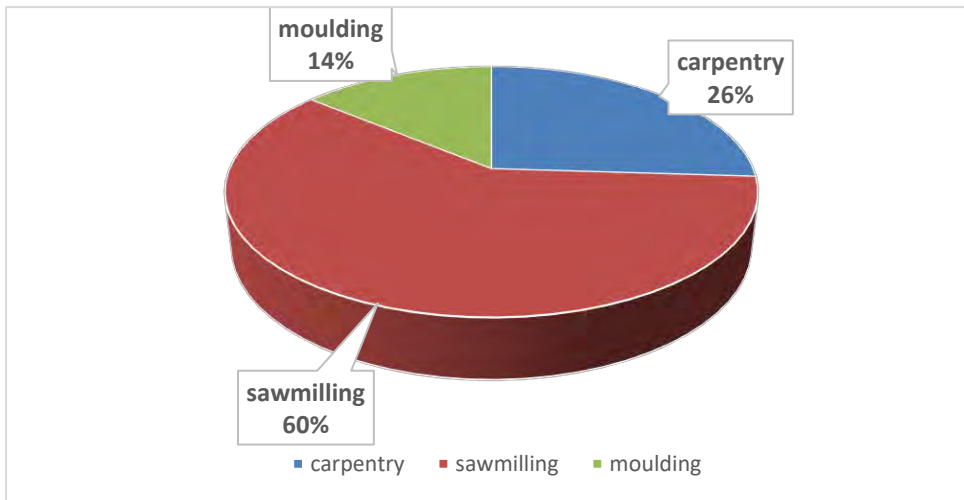


Figure 4.1 Type of Woodworker's Distribution

The type of woodworkers engaged for this study and their employment status was presented in figure 4.1 and 4.2 respectively. The outcome from figure 4.1 shows that exactly 3 out of 5 (60%) were Sawmill workers where as 26% were from the carpentry section. The workers who represent the moulding section constitute 14% of the total respondents.

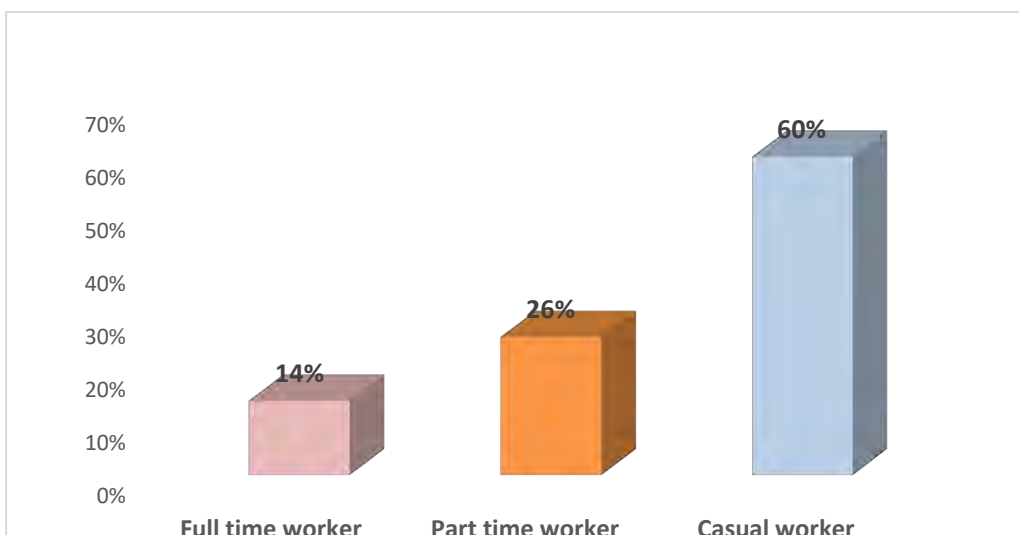
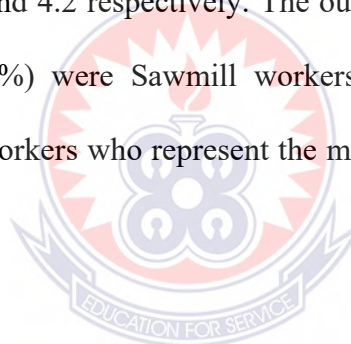


Figure 4.2 Employment status Distributions of Respondents

Figure 4.2 presents the distribution of the employment status of the woodworkers. The outcome shows that the full time workers amounted to 14%. This people were the managers and the supervisors. However, 26% reported to be part time workers whereas majority (60%) was casual workers who at any point in time could leave the work.

4.2 Awareness of safety practices by workers

In assessing the willingness of woodworkers to use safety and health practices, the researcher examined the awareness of safety practices by the woodworkers. The researcher considered safety practices of the working environment, safety practices of personal protective equipment and management safety measures. The results is presented in Table 4.2, Table 4.3 and Table 4.4.

Table 4.2 Awareness of working environment safety practices by woodworkers

Awareness	prerogative scoring of respondents					M	±SD
	SA (%)	A (%)	NS (%)	D (%)	SD (%)		
There should be leak – proof roof	44.0	30.0	0.0	20.0	6.0	3.96	.885
Good lighting system is needed at your work place.	20.0	42.0	14.0	16.0	8.0	3.74	.974
Availability of Fire extinguisher	50.0	10.0	18.0	12.0	10.0	3.60	.753
All Machine should have controls labels	20.0	16.0	38.0	22.0	4.0	3.45	.882
Prohibition and warning signs should be placed	30.0	4.0	22.0	34.0	10.0	3.40	1.214
Fire-resistant cabinet should be well-ventilated	26.0	0.0	10.0	42.0	2.0	3.24	1.545
Safety signs and signals should be displayed boldly at site	22.0	0.0	26.0	12.0	40.0	2.82	1.333
Excessive heat in your work place should be avoided	14.0	20.0	18.0	24.0	24.0	2.76	0.257
Signs for fire exits should be displayed	26.0	6.0	24.0	30.0	14.0	2.55	1.338
Adequate dust harvester is needed at the processing plant	18.0	0.0	40.0	28.0	14.0	2.40	1.112

SA = strongly agree, A = agree, NS = not sure, D = disagree, SD – strongly disagree M = mean, ±SD = standard deviation: source (field survey data 2016)

Table 4.2 present the level of safety practices awareness woodworkers had for their working environment. They are reported to be aware of some safety practices; however, they were ignorant to most of the safety practices. For instance, 74% of the respondents attested they were aware that there should be leak proof roof (M=3.96) at

their work place. This will solve all leakages at the workplace during the rainy season. However 26% objected to be aware of that. Furthermore, more than, three fifth (62%) reported to be aware that Good lighting system is needed at their workplace. They further explained that Good lighting will enhance easy sight. Hence they can work effectively and efficiently with good lightning system. On availability of fire extinguisher at the workplace (M=3.60) exactly 3 out of 5 (60%) of the respondents reported that they were aware there should be fire extinguisher at their workplace. However 40% were either not sure or disagree to that assertion. The respondent's opposition to this assertion was the fact that most of the firms lack fire extinguishers. The few firms that had fire extinguishers were hidden at advantageous places. All machines should have control labels for easy operation Jerie, (2012). However, as 36% of the respondents strongly agree to this notion, more than 3 out 5 (64%) either not sure or disagree. This was because they had operated machines for several years without control labels yet they had no accidents and they efficiently operate the machine. Therefore they were not sure if indeed machines should have control labels or not. Interestingly most of the respondents (52%) and almost half (48%) reported that they were unaware that safety sign (M=2.82) should be displayed boldly at site and excessive heat (M=2.76) should be avoided at the workplace respectively. The respondents claimed that they were familiar with their workplace and also know the machines they operate generate heat. Therefore they thought it as normal for machines they were using to produce heat. Secondly they could not measure the excessiveness of the heat generated by the machines.

Furthermore, majority of the woodworkers (44%) were unaware that signs for fire exists should be displayed (M=2.55). They reported they were aware of entrance and exit points at the work place however; displaying signs were a different thing to them.

This shows that much awareness has not been created at their workplace disputing Alferts(2009) assertion that one of the major awareness created at the wood work place is signs for fire exists.

Table 4.3 Awareness of personal protective equipment safety practices by woodworkers

Awareness	Entitlement scoring of respondents					Mean	±SD
	SA (%)	A (%)	NS (%)	D (%)	SD (%)		
A woodworker needs goggles	20.0	44.0	16.0	10.0	10.0	3.60	1.319
A woodworker needs gloves	44.0	24.0	2.0	20.0	10.0	3.54	1.563
A woodworker needs Breathing masks	36.0	26.0	18.0	12.0	8.0	3.50	1.093
Woodworkers need overall clothing's	20.0	18.0	15.0	15.0	32.0	3.06	1.346
A woodworker needs ear muffs	22.0	18.0	6.0	30.0	24.0	2.69	1.245
A woodworker needs helmet	16.0	12.0	20.0	40.0	12.0	2.59	1.442
Protective boots are supplied to you	20.0	6.0	16.0	12.0	46.0	2.50	1.129
A woodworker needs Fire-fighting equipment	26.0	12.0	0.0	42.0	20.0	2.44	1.248

SA= strongly agree, A =agree, NS – not sure, SD= strongly disagree, D= disagree, ±SD=standard deviation. source (field survey data 2016)

Presented in Table 4.3 is safety practices awareness of personal protective equipment by woodworkers. Similarly the woodworkers reported to be aware of some safety practices but were also ignorant of some. Majority (52%) strongly disagreed that woodworkers needs helmet (M=2.59) at the work place. They reported that Helmet was meant for construction site workers or motor riders. Since there was no heavy equipment that could fall from the roof, there was no need for helmet. This suggested that woodworkers were ignorant of the use of helmet as a protective equipment. This confirms Phoya (2012) views that helmet was one of the major protective equipment which should be at the woodworkshops.

Furthermore, more than half (54%) of the respondents reported to be unaware that wood workers need ear muff when at work (M=2.59). They were of the view that, they were used to communicating among themselves and even listening to radio as well as other electronic appliances and therefore using ear muffs is likely to impair their work in terms of communicating.

Again as 38% were aware that woodworkers need overall clothing's, 47% disputed that notion with 15% not sure. This was because overall is worn by most workers at different workshops. Therefore they were of the view that, it was not compulsory to use at the woodworkshop. Moreover, wearing protective boots at the workshop helps prevent injury of the feet at sites (Adan 2004). However the woodworkers (58%) were unaware that protective boots were to be supplied at the workshop. This was because most of the workers were either part time workers or casual workers. They come ready prepared to work. Hence they were unaware protective boots should be supplied to them. They further explained that if the need be for them to wear protective boots, they need to purchase themselves. In spite of woodworkers unaware of some personal safety practices, more than 3 out of 5 (64%) reported that they were aware woodworkers needs goggles (M=3.60). Furthermore, majority (68%) and (62%) were aware of the need for gloves (M=3.54) and Breathing Masks (M=3.50) at their work shops. This was because they are concerned about the safety of their eyes, palms and issues of breathing.

This however confirms Phoya (2012) finding that woodworkers were much aware and even make it mandatory to have goggles, gloves and breathing masks at their work shops.

Table 4.4 Management measures at woodworkshop

Awareness	percentage scoring of respondents			Mean	±SD
	SA and A	Not sure	SD and D		
Management encourages Personal hygiene among the workers	60.0	26.0	14.0	3.60	1.143
There is regular supervision of site and workplaces,	20.0	14.0	66.0	2.62	.987
First aid and rescue equipment are adequately provided	36.0	28.0	36.0	3.00	1.355
Emergency response training and regular drills are adequate	36.0	2.0	62.0	2.56	1.445
Quick response to faulty machines and equipment	10.0	24.0	66.0	2.20	.926

Regular Training are organized for workers	28.0	14.0	58.0	2.58	1.386
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SA= strongly agree, A =agree SD= strongly disagree, D= disagree (SD)=standard deviation. source (field survey data 2016)

Comparatively the management measures for safety at the woodworkshops were assessed. (Table 4.4) The results in Table 4.4 shows that, exactly 3 out of 5 (60%) reported that management encourages personal hygiene among the workers (M=3.60). however, 66% strongly disagreed that there was regular supervision of site and workplaces by management. This shows there was poor supervision at the woodwork shops similarly to what has been reported by Muchemedzi (2007).

Furthermore, Table 4.4 reveals that, 36% of the woodworkers reported that management provide first aid and rescue equipment adequately. However, 64% were either not sure or disagreed to that notion. Their reason was that, victims of even the slightest minor injuries were sent to the nearest health care centre for treatment. This suggests that first aid box if present were there as mere representation.

Moreover, most of the responses showed that management measures to safety practices are poor. For instance, more than three fifth (62%) reported that management do not organize emergency response training for them. Therefore, accidents such as fire outbreak can destroy a lot of properties before it is put under control. This was because workers rely solely on the National Fire Service in respect to putting out any fire outbreak. Lastly, management response to faulty machine (M=2.20) was inadequate. More than half (66%) disagreed that there was quick response to faculty machine. Machines were attended to only when they break down totally.

4.3 Safety practices at the woodwork place

The earlier discussion revealed that respondents reported to be aware of some safety practices at their various work places. However, most safety practices were not observed. The researcher therefore investigated further to find out if the safety practices were really observed at the site (Table 4.5)

Table 4.5 Woodworkers Adherence to safety practices at woodwork shops

Safety practices	Always	Sometimes	Rarely	Mean
Do you ensure that electrical gadgets are switched off after work	48.0	32.0	20.0	3.52
Do you safeguard worn out chains regularly	46.0	0.0	54.0	3.46
Do you ensure saws are adequately conditioned	50.0	26.0	24.0	3.44
Do you wear ear muffs when working?	36.0	46.0	18.0	3.38
Do you ensure only trained personnel operate machines	24.0	44.0	32.0	3.32
Do you wear gloves when working	38.0	50.0	12.0	3.27
Do you wear goggles when working	36.0	26.0	38.0	3.08
Do you wear nose mask when working	30.0	26.0	44.0	2.86
Do you ensure that faulty machines are repaired and maintained	26.0	32.0	42.0	2.73
Do you wear face shield when working	28.0	26.0	46.0	2.70
Do you wear helmet	10.0	30.0	60.0	1.30

Always = 4, sometimes 3 rarely = 2. source (field survey data 2016)

Presented in Table 4.5 is how safety practices were observed at woodwork site. The respondents (48%) reported that they always ensure that electrical gadgets were switched off after work (M=3.52). However, more than half (52%) sometimes switch the electrical gadget off or they rarely do that. This suggests that there were no strict adherence to switch off electrical gadgets. It is only done when a worker feels like or probably it is the sole responsibility of the securities to ensure that Muiruri and Mulinge (2014) argues that it is the duty of the employer to ensure that workers are informed of job-related hazards, trained in the methods used to control these hazards,

and made accountable to use the controls in place. According to the authors, management and supervisors should always keep in mind that positive reinforcement also goes a long way in encouraging safe and healthy behaviours at the work site. Again, more than half, (54%) rarely safe guard worn out chains regularly. Furthermore, with regards to conditioning saws adequately, half (50%) of respondents reported that they ensure that saws were adequately conditioning. Again more than one-fourth (36%) worn ear muff always when processing wood. However, 46% reported they worn ear muff sometimes during wood processing. They explain that they felt uncomfortably and it look modern hence, their hexapodous attitude towards ear muff.

According to (Mensah 2001) operator of any machine should be trained personnel. However about 44% of managers would sometimes ensure that only trained personnel operate machines. About 32% would rarely ensure machine operators were trained. This was because most managers were result oriented managers and therefore they don't consider it much the negative implication of operating a machine without thorough knowledge. Therefore if any person considered have the experience on the basis of spending many years in the outfit could operate any machine provided they have watched other workers operating and not necessary be trained. This therefore refutes Tam and Fung(2008) instinct that only trained machine operators can ensure highest productivity. On the issue of wearing gloves when working, the respondents (50%) sometimes wear gloves when looking. However 64% reported that they sometimes wear goggles or rarely wear goggles. This suggests that wearing of goggles during wood processing was strange to the woodworkers.

4.4 Willingness of woodworkers to use protective equipment during wood processing

In his quest to unveil the realities, the researcher examined the willingness of a woodworker to use protective equipment during wood processing. (Figure 4.3)

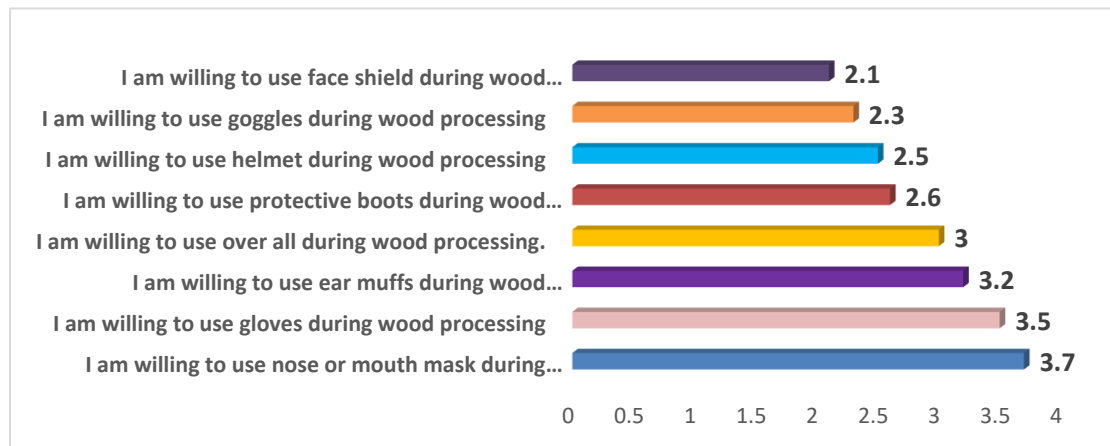


Figure 4.3 Respondents willingness to use protective equipment during wood processing

The outcome divulged that woodworkers attested they were either not sure or unwilling to use the protective equipment during wood processing except for wearing gloves, nose and mouth mask. Woodworkers' unwillingness to wear protective equipment was evident from Figure 4.3 where most of the mean values were 3 and below. The outcome in Figure 4.3 indicates that, the woodworkers were unwilling to use face shield (M=2.1) during wood processing. This was because they were ignorant of the existence of a face shield as protective equipment in the woodwork shop.

Again, the use of goggles (M=2.3) and helmet (M=2.5) were also among the protective materials, respondents showed their unwillingness to use during wood processing. They were of the view that, though they were aware of goggle as a protective material, it looks dark when they wear them which makes their work uncomfortable. Moreover, they reported that goggles were meant for electric welders rather than the woodworkers. Similarly, their unwillingness to use helmet was due to

the fact that they were ignorant about using helmet in the wood work shop. They were of the view that helmets were worn at only building construction sites and mining sites. This assertion therefore confirms Bean and Butcher (2006), findings that woodworkers lack basic information communication resulting in their ignorance in some basic safety practices.

Furthermore, the respondents were not sure in wearing protective boots (M=2.6) and overall clothing (M=3.0) during wood processing. Respondents' neutralism was as a result of their unawareness of either wearing a protective boot and overall cloth or not. This was because they had no prescribed cloths and boots for work. They wore any cloth and any footwear they deem fit to work every working day.

In spite of the respondents unwillingness to most personal protective safety practices, they showed high will to use gloves (M=3.5) nose and mouth masks (M=3.7). Respondents high will to use gloves; nose and mouth mask was because they were common and basic personal protective materials every worker can lay hands on. Again the woodworkers were concerned about the risk in direct breathing of sawdust during wood processing hence their high sense of protection to avoid any respiratory complications. This assertion was in line with Mock et.al (2005) who opined that, the most common and basic safety material found in most woodwork firms were gloves, nose and mouth mask. They explained that managers were 80% willing to supply gloves, mouth and nose masks than any other safety material.

Awareness of working environment and personal protective safety practices

A thorough presentation and analysis from Table 4.2 shows that the small scaled woodworks in the West Gonja district of Ghana were either not sure or unaware of most safety practices at their work environment. The woodworker's lack of awareness

of the safety practices was attributed to the fact that higher educational certificate was not a bench mark for employing workers in the small scale wood firms. As a result workers employed were only concerned about the execution of work assigned to them and not safety practices at their work environment.

Furthermore, the daily activities at the workshop were the sole responsibility of the owner and majority of the workers were ignorant about the workshop management.

Again, there was lack of regular in service training for the workers within small scaled woodwork firms. Majority of the workers (75%) therefore lack the technical and technological know-how on the field of work. Their health and safety issues in their work environment was therefore a secondly matter of concern.

Moreover, managers of the small scaled wood working sites hardly provide safety equipment to their workers and for the working environment. As a result conditions of their machines and equipment were normal because that was what they were used to.

More so, there were no proper supervision and monitoring to supervise and monitor the activities of the workers who might point out the health and safety rules required of the workers. Woodworkers in the small scaled firms only wake up just to go to work and carries the individual work duties with little or no intention of health and safety practices in mind.

Comparatively, woodworkers were inadequately aware of personal protective practices. This was because little or no workshop or seminar were organised for these workers on the use of personal protective safety practices. The woodworkers therefore lack the adequate awareness of the personal safety measures. The little knowledge

they know about personal safety practices were based on hearsay and through conversations but not based on factual facts.



Small scaled woodworker's unwillingness to practice safety rules

The descriptive analysis from Figure 4.3 has revealed that the small scale woodworkers in the West Gonja district were unwilling to practice most health and safety rules.

A further assessment by the researcher revealed that, the woodworker's unwillingness to practice safety rules boss to the fact that, the small scaled firms employed unskilful workers of which most of them were casual workers. These casual workers were much interested in the wages earned at end of a working period. As a result, most of the woodworkers were ignorant of most health and safety rules. They normally wear any cloth they deem fit for the work "*working gear*". Since their wages earned were insufficient, they hardly worn protective boots because they could not afford them. This has resulted in their daily slippers and other unprotected boots to work without thinking of what might happen in case of accidents.

Again, the respondents thought wearing of helmet was meant for building construction workers at construction sites. They were therefore unwilling to wear helmet because, they were always in their workshops and do not anticipate any accident.

Furthermore, the researcher foresaw that, the woodworks indisposition to using goggle and ear muffs were due to uncomforted ability. They were of the view that, sometimes the goggles look bit darker which makes sight difficult. Again, since they needed concentration and the slightest form of alert, it was better to listen with their ears rather than any otherhearing aids. However, they showed high will of using gloves because; they could physically see any injuries in their palm and therefore prefer to use gloves as a protective measure.

Finally, the high will of the use of nose and mouth masks was as a result of the saw they inhale during wood processing. They were aware of possible health risk they endanger themselves when they breath directly during wood processing. Hence they were willing to use mouth and nose mask as a protective measure.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

This chapter focus on the summary of the major findings, conclusion and recommendations for the study.

5.1 Summary of the Findings

Health and Safety remains an integral part of the construction process and needs to be planned and organized to ensure workers safety to increase productivity in the woodwork industry. Results from the study revealed that most workers at small scale woodworkfirms studied had no formal education. The few workers who were educated had either JHS or MSLC certificate as their highest level of education.

Moreover, the study revealed that, due to the low level of education, most workers were employed as casual and part time workers. As a result most of the work done were labour work rather than professionally trained operators.

Furthermore, the respondents were ignorant of basic working environment safety practices. They thought issues related to the working environment were the responsibility of the manager or owner of the firm. They were part time and casual workers hence they were there to work.

Again the study revealed that respondents were unaware of the use of personal protective equipment. The respondents were unaware of the use of overall clothing, protective boots, ear muffs and breathing masks during wood processing.

Management also failed to provide the necessary safety equipment for use by workers. Again the study revealed that managers lack regular supervision of workplace to ensure safety at the work place. Since there was lack of adequate

supervision, there were no strict adherence to the safety rules and regulation at the woodwork shop. Therefore to wear any personal protective material was the sole decision of the individual rather than an obligation.

The study revealed that but for ignorance on the part woodworkers, almost all of the respondents would use any personal protective equipment or material.

The study finally revealed that respondents were very much unwilling to use protective boots, goggles, face shield and helmet to protect themselves during wood processing.

5.2 Conclusion

The concept of health or safety awareness among woodworkers needs to be given regular attention by woodwork firms as it plays an important role in the delivery of construction projects. With the findings from the descriptive analysis of the data that was gathered, the researcher arrived at the conclusion that low level of education, workers' ignorance about basic safety rules and regulations and the high level of casual workers in the small scale woodwork firms has resulted in woodworkers' unwillingness to use health and safety equipment when processing wood.

5.3 Recommendation

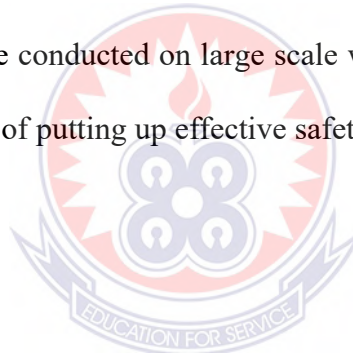
Base on the numerous discussion and analysis, the researcher suggests the following recommendations:

- Managers of small scaled woodwork firms should provide establish a strong information and communication systems to create necessary awareness of safety practices among workers and even visitors.

- Again managers or owners should provide the necessary health and safety equipment for use by any person who works at their shop.
- Regular education should be given to workers by managers stating the health implication of not wearing safety or protective equipment.
- Most full time workers should be employed, so that monies loss on regular seminar for casual workers would be reduced.
- Lastly owners of the wood shops should enforce the adherence of health and safety rules at sites and severe sanctions netted out to workers who go contrary.

5.4 suggestion for further studies

Further research could be conducted on large scale woodworkersto enable woodwork firms accrue the benefits of putting up effective safety measures.



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APPENDIX

UNIVERSITY OF EDUCATION, WINNEBA

COLLEGE OF TECHNOLOGY EDUCATION - KUMASI

QUESTIONNAIRE TO WOOD WORKERS IN THE GONJA WEST DISTRICT

This questionnaire is part of a study aimed at: **assessing the health and safety practices among small scale wood workers in the Gonja West District of Ghana.** Please your time and energy used in responding to this questionnaire are highly appreciated. Please you are assured that any information given shall be treated with confidentiality and anonymity.

You are please entreated to provide objective answers to the questionnaire items. The information provided will be treated with the highest level of confidentiality. Please tick (✓) the appropriate response to each item.

Section A: Background information of Respondents

1. Gender: Male [] Female []
2. Age in years: below 25 [] 25-35 [] 36 – 40 [] 40 – 45 [] 45 and above []
3. Position in the establishment a. manager [] b. supervisor [] c. operator [] d. labourer []
4. Please indicate your level of **Educational**: a. no formal education [] b. MSLC/ JHS [] c. WASSCE/ G.C.E.O level [] d. HND / A level [] e. First degree [] f. masters []
5. Which department do you belong to?
a. Carpentry [] b. sawmilling [] c. moulding [] d. veneering [].
6. Years of working experience of the respondents in the wood industry:
a. Less than 5 years [] b. 5-10 years [] c. 11-15 years []

d. 16-20 years [] e. 20 years and above []

7. What is your employment status?

a. Full time [] b. part time [] c. Casual []

Section B: awareness of safety practices by wood workers

Please indicate your awareness of safety practices by workers on the following health and safety measures and practices in your firm or workshop. **Note: 5 = strongly Agree; 4 = Agree;**

3 = Not Sure; 2 = Strongly Disagree; 1 = Strongly Disagree

Statements	5	4	3	2	1
Working Environment					
There should be leak – proof roof					
Fire-resistant cabinet should be well-ventilated					
Excessive heat in your work place should be avoided					
Good lighting system is needed at your work place.					
All Machine should have controls labels					
Signs for fire exits should be displayed					
Safety signs and signals should be displayed boldly at site					
Prohibition and warning signs should be placed					
Availability of Fire extinguisher					
Adequate dust harvester is needed at the processing plant					
Personal Protective Equipment					
A wood worker needs helmet					
Wood workers need overall					
Protective boots are supplied to you					
A wood worker needs ear muffs					
A wood worker needs goggles					
A wood worker needs Gloves					
A wood worker needs Breathing masks					

A wood worker needs Fire-fighting equipment					
Management Measures					
Management encourages Personal hygiene among the workers					
There is regular supervision of site and workplaces,					
First aid and rescue equipment are adequately provided					
Emergency response training and regular drills are adequate					
Quick response to faulty machines and equipment					
Regular Training are organised for workers					

Section D: the use of health and safety practices at wood work sites

Please indicate your opinion on whether the following practices are carried out at sites. **Note:**

5 = always; 4 = usually; 3 = sometimes; 2 = rarely; 1 = never

Statements	5	4	3	2	1
Do you wear helmet					
Do you wear ear muffs when working?					
Do you wear gloves when working					
Do you wear goggles when working					
Do you wear face shield when working					
Do you wear nose mask when working					
Do you ensure saws are adequately conditioned					
Do you safeguard worn out chains regularly					
Do you ensure only trained personnel operate machines					
Are safety rules adhere to on site?					
Do you ensure that electrical gadgets are switched off before they leave					
Do you ensure that faulty machines are repaired and maintained					

Section D: The perception and willingness of workers to adopt health and safety measures

Please indicate your opinion on the need for the following health and safety measures and practices. **Note: 5 = strongly Agree; 4 = Agree; 3 = Not Sure; 2 = Strongly Disagree;**

1 = Strongly Disagree

Statements	5	4	3	2	1
I am willing to use gloves during wood processing					
I am willing to use over all during wood processing.					
I am willing to use protective boots during wood processing					
I am willing to use goggles during wood processing					
I am willing to use face shield during wood processing					
I am willing to use helmet during wood processing					
I am willing to use nose or mouth mask during wood processing					
I am willing to use ear muffs during wood processing					

Section E: Effects of wood processing and the health repercussions wood site worker

Please indicate your response on the effectiveness of the following recommendations to reduce health and safety hazards on wood site. **Note: 5 = strongly Agree; 4 = Agree; 3 = Not Sure;**

2 = Strongly Disagree; 1 = Strongly Disagree

Statements	5	4	3	2	1
I usually report lack of appetite					
I usually report headaches					
I usually report nausea					
I usually report of eye irritation					
I usually report of respiratory problems					
I usually report of skin irritation					
I usually report of small cuts					
I usually report of neck pains					
I usually report of hearing loss					
I usually report of poor eye sight					
I usually report of back pains					

