

## Analytical Study of Carpenters Attitude Towards Safety and Occupational Health Practice in Oyo State of Nigeria

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**ABSTRACT** This study investigated the attitude of carpenters towards safety and occupational health practices in Oyo State, Nigeria. The specific objectives include, to describe the carpenters in the study area and to analyse their attitude towards safety and occupational health practices. Also to identify the safety gears they are fond of using and to establish the relationships between the demographic characteristics and their attitudes towards occupational health and safety. Data for the study was collected from seventy-eight respondents selected randomly from carpenters in Oyo town of Oyo State, Nigeria. The data was analysed using descriptive and correlation analyses. The result showed that the most popular hazard in the study area was cuts and stepping on sharp objects. About 16.7% has favorable attitudes towards safety and occupational health while 16.7% had unfavorable attitude. Only 66.6% had indifferent attitude. The known reasons for non-use of safety gears include high cost of procurement (82.01%) and non-compulsion of use (83.33%). The variables that significantly correlates with attitude towards safety included age ( $r = 0.242$ ); years of training ( $r = 0.264$ ) years of formal education ( $r = 0.266$ ), willingness to attend training ( $r = 0.243$ ) and knowledge of Hazards ( $r = 0.273$ ) at 0.05 level of significance. That study concluded that the various relevant factors be emphasized in promoting safety education among carpenters. It was recommended that safety gears be produced locally to reduce the cost.

### INTRODUCTION

The use of forest resources especially wood is popularly known and a practice, which is as old as man. Continually woods are being harvested from forest and utilized in various forms. According to Groneman (1982), about half the land area of the earth was once covered by forest. Today only about one-fourth of the land surface is forested. Wood is one of the most unusual and valuable raw materials of industry. It is beautiful, relatively inexpensive, and available in a wide choice of weights, strengths, colours and textures. Its matching characteristics are excellent. Wood can be bent, sliced, planed, sawed and sanded. With glue, nails or screws it can be fastened to another piece of wood or other materials. It can be finished naturally or painted to match other materials. In our industrial society according to Freirer (1979), wood is a most vital and useful product.

Wood industries offer many career opportunities for people with different kinds of interest, aptitudes, abilities, personalities, and education: some professionals in wood making as given by Freirer (1979) include carpenters, cabinet makers, pattern and model makers, painters and finishers, furniture designers, interior designers and decorators, foresters and wood technology and wood products engineers.

All wood making trades involve a lot of hazards, which require that, all workers observe the necessary safety precautions. Safety is the most important aspect of a workshop or site experience. Real safety means safeguarding against damage to machines, tools, and materials as well as preventing personal injury. The furniture and building industries are vitally concerned with safety. Because efficient production and safety go hand in hand, present day industry needs and wants safe as well as efficient workers. A permanent injury such as the loss of a part of the body can seriously impair the usefulness of a worker and have a lasting effect on his life.

Walton (1981) defined safety as a term used when planned measures or precautions are taken to control situations and act in an endeavor to prevent:

- (i) injury to the person concerned, that is the worker or operator,
- (ii) injury to others – helper or those working close by, and
- (iii) damage to the workshop its, equipment; fixtures and materials.

Accidents to person in the workshop could occur when:

- (i) handling and using hand tools
- (ii) handling and using machines and portable power tools;
- (iii) stepping on or striking obstructions left on floors or benches;

- (iv) lifting moving and storing materials and jobs;
- (v) using inflammable or corrosive liquids and gases; and
- (vi) inhaling vapour fumes.

Authors such as Walton (1981) and Ajayi et al. (2000), posited that many workshop and site accidents could be avoided if adequate precautions are taken to provide safe working conditions. Among the highlighted conditions are safe working attire for the workers, un-congested working area, adequate ventilation and lighting and safe storage of tools and materials. Others are proper guarding of moving parts of machines, availability of first aids equipment and fire protection equipment.

In addition safe working techniques require a sound knowledge of:

- (i) the right way to do a job;
- (ii) using the right tool for the job;
- (iii) the correct use of tools and machines;
- (iv) the limitation of tool or machine – this is important when using portable machine tools; and
- (v) care and maintenance of tools and machines.

Further to the above, it is obvious that hand tools do not usually cause accidents if in good working order, used correctly, carried carefully and stored safely. Machine tools and portable power tools accidents are generally caused by electrical faults, mechanical faults and careless or incorrect working techniques. Mechanical faults which can be dangerous and are usually the result of poor machine maintenance and lubrication, worn or damaged machine parts. Overloading the machine; incorrect setting up of the machine and careless or incorrect working practices. Using the wrong cutting tools and using blunt or damaged cutting tools. Safety rules for hand tools and power tools and machinery should be carefully mastered and displayed at all times. Bolaji et al. (2002) submit that well arranged workshop environment and safety precautions taken will prevent most of the accidents that occur in the wood workshops and the like if the planner and users considered the guiding advice given by experts.

Despite the state of knowledge relating to safety narrated above, it is still obvious that there are people in the wood related work who do not observe the precautions required to prevent accidents and make the work safe.

Although the International Labour Organization had specified the needed minimum safety precautions that are essential, most developing countries have not been able to implement the policy. The main reasons identified by Baloyi (1991) include lack of political will, outdated legislation administration; lack of effective enforcement machinery/system and non-compliance with the legal requirements. Other reasons adduced include lack of exposure standard or limits, non existence of expert advisory services and a universal scarcity of trained manpower; lack of information and accurate records of accidents, inventory or registry; lack of basic professional training in occupational safety and health poor organizational structures and lack of regional organization cooperation Baloyi (1991). While some of these authors stressed the importance of policy and policy implementation, emphasis was not placed on the workers' attitude towards safety and occupational health. This study is therefore set to analyze and investigate the attitude of wood workers especially carpenters towards occupational health and safety practices in Oyo State Nigeria. The specific objectives are:

- (i) to describe the carpenters in the study area
- (ii) to analyze the attitude of carpenters towards safety and occupational health practices
- (iii) to identify the safety gears which they are fond of using
- (iv) to establish the relationship between the demographic characteristics and their attitudes towards occupational health and safety.

## METHODOLOGY

This study was conducted in the ancient city of Oyo in Oyo State. The town was purposively sampled because it is an ancient town with many woodwork activities in progress. The town has an estimated population of 222, 691 in 1991 population census. There are well over three thousand wood workers in the town. Out of the wood workers, selected few are carpenters. Seventy-eight carpenters were randomly selected. Because of the presumed low level of literacy, the researcher visited the workshops and ask the questions directly. For reason of adequacy, research assistants were trained on the use of the interviews guide. The study was conducted in the month of November in the year 2003.

Validated interview schedule, which was

subjected to adequate reliability test using test-re-test method, was used to collect the data. The variables were measured directly in the case of some demographic characteristics. While attitude towards occupational health and safety was measured on the responses to standardized attitudinal statements on a five-point Likert scale.

The data collected was analysed and subjected to frequency and percentage distribution and correlation analyses using the statistical package for social sciences. The result is presented and interpreted accordingly.

## RESULTS AND DISCUSSION

Selected demographic characteristics of the responses on demographic characteristics were presented in table 1. Emerging evidence from the data analysis showed that respondents whose ages was less 25 years accounts for 60.3% while those between 26 and 30 years were 20.5% of the respondents. The remaining 19.2% were more than thirty years old. The average age of the respondents was 26.33 years, while the standard deviation was 5.5798.

The information collected on years of training in carpentry revealed that the mean years of training was 3.97 years while the standard deviation was 2.91. However, majority (73.1%) had five or less years of training while 2.6% had more than ten years of training. The various vocations in the study area could either be inherited from parents through socialization process or learnt out of interest.

On whether or not the respondents had formal education and the number of years invested into same, the information collected revealed that the average years of formal education of the respondent was 2 years with a standard deviation of 1.27. It was noted that 1.3% did not have any form of formal education. Majority of the respondents did not complete primary education, which required six years to complete. In the study area, it is a common thing for parents to watch their wards performance and determine whether or not they could continue to follow the track of formal education. Along the line those whose ability to pursue formal education are doubted are usually sent to relatives or popular artisan for any form of training desired as in this case carpentry.

Data on income showed that the average income calculated was ₦14, 538:50 with a

standard deviation of ₦3, 148:70. Majority of the respondents (82%) earned between twelve and eighteen thousand Naira per annum from carpentry. Although other sources of income such as farming were known among the respondents.

In addition, the average household size was 5.15 persons with a standard deviation of 2.09. The result shows that respondents whose household size were five or less was 39.7% while those with household size more than five were 60.3% of the respondents.

On years of experience in carpentry work, the data collected revealed that the average years of experience of the respondents was 4.5 years with a standard deviation of 2.72. Those with five or less years of experience were 65.4% of

**Table 1: Demographic characteristics of respondents**

Variable	Frequency	%	Statistics
<i>Age (years)</i>			
<25	47	60.3	$\bar{x} = 26.33$ $\delta = 5.58x$
26 – 30	16	20.5	
31+	15	19.2	
<i>Years of Training</i>			
<5	57	73.1	$\bar{x} = 3.97$ $\delta = 2.91x$
5 -10	19	24.3	
10+	2	2.6	
<i>Years of Formal Education</i>			
<5	75	96.2	$\bar{x} = 2.00$ $\delta = 1.23x$
6	3	3.8	
<i>Income (₦'000)</i>			
<12	10	12.8	$\bar{x} = 14.54$ $\delta = 3.15x$
12 – 18	60	76.9	
>18	8	10.3	
<i>Years of Working Experience</i>			
<5	51	65.4	$\bar{x} = 4.5$ $\delta = 2.72$
5 -10	25	32.0	
>10	2	2.65	
<i>Willingness to Attend Training</i>			
Yes	46	9.0	41.0
No	32	41.0	
<i>Willingness to Pay for Training</i>			
Yes	50	35.9	64.1
No	28	64.1	
<i>Knowledge of Hazards (No. Mentioned)</i>			
1 -5	26	33.3	8.3
6 – 10	45	58.4	
11+	7	8.3	
<i>Number of Reason for Non-Use of Safety Gears</i>			
1	39	50.0	16.7
2	19	24.4	
3	13	16.7	
4	6	7.7	
5	1	1.3	
<i>Attitude towards Occupational Health and Safety</i>			
Favorable (41)	13	16.7	66.6
Indifferent (30 – 40)	52	66.6	
Unfavorable (1 - 29)	13	16.7	

where  $\bar{x}$  = mean and  $\delta$  = standard deviation.

the respondents while 32.1% had between six and ten years of experience. Only 2.6% had over ten years of experience.

Majority of the respondents (59%) were willing to attend training on occupational health and safety while 41% indicated that they are not willing to be trained on same. In addition, 64.1% of the respondents are willing to pay for training in occupational health and safety while 35.9% are not willing to pay. This translates to mean that majority are willing to be trained in occupational health and safety.

On knowledge of hazard associated with woodwork, 33.3% were aware of at least five hazards while 57.6% mentioned between six and ten hazards. Only 9% mentioned more than ten hazards. Detailed analysis showed that 23.1% had low knowledge, 61.5% had moderate knowledge while 15.4% had high level of knowledge. It is therefore obvious that a very small proportion had low level of knowledge of hazards.

The most popularly mentioned hazards were: cuts (80.77%), stepping on Nails (79.49%) wood chips/dust in eyes (69.23%) and electric shock (69.23%). However, the least mentioned hazards were fire burns (20.51%) sun burns (23.08%) and chemical related accidents (33.33%) as presented in table 2.

On reasons for non-use of safety gears, 50% mentioned only one reason, 24.4% mentioned two, 16.7% mentioned three reasons while 7.7% mentioned four reasons. Only 1.3% mentioned five reasons. The reason mostly mentioned were high cost of procurement of the gears (82.05%) and non-compulsion of its use (83.33%). The least mentioned reason was its not being commonly used in the various communities (28.21%) as presented in table 3.

**Table 2: Hazards mentioned as common**

Hazard mentioned	Frequency	%
Cuts	63	80.77
Stepping on Nails	62	79.49
Falling Materials from Height	44	56.41
Fell from a height	48	61.54
Wood chips/dusts in eye	54	69.23
Dust in Nose	44	56.41
Injury from implements	36	46.15
Chemical related Accidents	26	33.33
Sun burn	18	23.08
Bites from Insects	27	34.62
Electric shock	54	69.23
Fire burns	16	20.51

The attitudes of respondents to occupational health and safety were studied using the respondents' reaction on five point Likert scale to standardized attitudinal statement. The responses showed that after considering the mean and standard deviation, which are 34.27 and 5.23 respectively, detailed analysis as presented showed that 16.7% of the respondents had negative attitude while 16.7% had positive attitude. The rest 66.6% had indifferent attitudes towards occupational health and safety.

**Table 3: Reasons for non-use of safety gears**

Reason Given	Frequency	%
No Commonly used in this community	22	28.21
Cost of Procurement is high	64	82.05
Not Convenient	60	76.92
Not Compulsory	65	83.33
Not Available	41	52.56
No laws binding me	46	58.97

## RESULT OF HYPOTHESIS TESTING

The hypothesis on whether or not the personal and socio-economic characteristics of respondents have any relationships with attitude of respondents towards occupational health and safety was carried out using correlation and regression analysis.

Result of correlational analysis was presented in the table 4.

The result showed that age ( $r = 0.242$ ), years of training ( $r = 0.264$ ), years of formal education ( $r = 0.216$ ) years of experience ( $r = 0.266$ ), willingness to attend training ( $r = 0.243$ ) and knowledge of hazards associated with wood working ( $r = 0.273$ ) correlate positively and

**Table 4: Correlation analysis on relationship between attitudes.**

Variables	Correlation coefficient (r)	Coefficient of deter $r^2$
Age	0.242*	0.06
Years of Training	0.264*	0.07
Years of Formal Education	0.216*	0.05
Income	-0.110	0.01
Household size	-0.019	0.00
Years of Experience	-0.266*	0.07
Willingness to attend training	0.243*	0.06
Knowledge of Hazards	0.273*	0.07
Reasons for non-use of years	-0.029	0.00
Willingness to pay	0.100	0.01

significantly with attitude towards occupational health and safety. This might be explained through the fact that age and working experience might have exposed some of the respondents to series of circumstances and experience with hazards thereby knowing and accepting that occupational health safety could be very important.

Result of the regression analysis as presented in table 5 shows that the coefficient (b) of age (b = 0.240), income (b = -0.251); years of experience (b = -0.628) willingness to attend training (b = 1.869), knowledge of hazards (b = 0.226) and reasons for non use of safety gears (b = -0.433) are significant to changes in the

**Table 5: Result of the regression analysis**

Variables	B Co-efficient	Standardized B	t-value
Age	0.240	0.256	1.831
Years of training	2.328E-03	0.001	0.009
Years of formal education	2.448E-03	0.001	0.005
Income	-0.251	-0.151	-1.246
Household size	0.145	0.058	0.471
Years of experience	-0.628	-0.326	-2.313
Willingness to attend training	1.869	0.177	1.286
Willingness to payment for training	-0.194	-0.018	-0.105
Knowledge of hazard	0.226	0.139	0.946
Reasons for non use of safety	-0.433	-0.086	-0.724

R<sup>2</sup> = 0.156 Dependent Variable: Attitude towards safety and Occupational Health  
F = 1.242

attitude of respondents towards occupational health and safety. Its obvious from the analysis that the variables considered could explain only 15.6% of the changes in attitude. However, the F – value of 1.242 was significant which is an indication that the variables are collectively significant to the dependent variable.

### CONCLUSIONS AND RECOMMENDATIONS

This study concludes that wood workers, especially carpenters in the study area generally exhibit mostly indifferent attitude towards

occupational health and safety with only 16.7% having positive attitude. The most ascribed reasons for non-use of safety gears by the carpenters were the cost of procuring them for use. In addition, the fact that it is not commonly used was not a popular reason among the respondents specifically; most of the respondent does not have the least formal education which is primary school. Hence, the educational level was very low.

The variables which had significant correlation at 0.05 level of confidence are years of training, age, years of formal education, years of experience, willingness to attend training and knowledge of hazards. These variables are therefore important and should be taken as relevant whenever any programme on occupational health and safety is to be addressed.

The following are therefore recommended:

- (i) That efforts be directed at popularizing the use of safety gears among the wood workers especially carpenters in order to ensure their good health;
- (ii) Safety should be included in the training of artisans and the importance be emphasized;
- (iii) Government should encourage the establishment of industries that can use local raw materials to produce relevant safety gears at a reduced cost and sell also at reduced and subsidized price.

### REFERENCES

- Ajayi, A.O.; Kolawole, O.D. and Adereti, F.O.: Analysis of safety practices during the application of agrochemicals and their implications for agricultural extension programme planning. *Journal of School Health Education*, **7(2)**: 92 - 103 (2000).
- Baloyi, R.S.: Problems in implementation of international occupational safety and health guidelines in development countries. In: *Proceeding of the Cost of Africa Regional Symposium on National Strategies for presenting*. (1991)
- Bolaji, A.O. et al.: *General Woodworking*. 2<sup>nd</sup> Edn. Odumatt Press and Publishers, Oyo (2002).
- Feirer, John L.: *Woodworking for Industry – Technology and Practice*. 3<sup>rd</sup> Edn. Chas. A. Bennett co Inc., Illinois (1979)
- Groneman, H. Chris: *General Woodworking*. 6<sup>th</sup> Edn. McGraw-Hill Book Company, New York (1982).
- Walton, John A.: *Woodwork in Theory and Practice*. Australasian Publishing Company, London (1981).