Research Article

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Investigating the Level of Awareness of Local Automobile Artisans on The Usage of Protective Equipment in Siwdu, Cape Coast South Metropolis in The Central Region of Ghana

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Abstract

The main aim of this study was to investigating the level of awareness of local automobile artisans on the usage of protective equipment in Siwdu, Cape Coast South Metropolis, in the Central Region of Ghana. In the field of work, especially where materials used can cause harm, the necessary precaution should be adhered to. The local artisans in the automobile industry at Siwdu however do not take the necessary precautions at their workshops. Preventable accidents that ought not have occurred may happen at the shops to destroy human life and properties. The irony is that these artisans were aware of the relevance and use of protective clothing. As a result, it is recommended that master craftsmen and union of the artisans should instill in their apprentices the use of protective clothing while working. This measure would make the use of protective clothing while working part and parcel of them so that when they become masters it would easy and comfortable for them to use.

Key words: Automobile, Artisans

Introduction

The auto mobile mechanic's profession involves repairing, overhauling of cars and other automotive vehicles, or their systems and parts. It also entails examining them, making necessary repairs, replacements, adjustments, and presenting the repaired vehicle to his/her superior or to the customer [1]. The evolution of Occupational Health and Safety services led to implementation of laws and regulations in 1833 among the English. They put to a halt the belief that accidents were inevitable and predestined to happen and they argued that these accidents could be controlled [2]. According to Occupational Safety and Health Council OSHC, Personal protective equipment (PPE) is an important means of preventing work injuries and should only be relied upon as a last line of defense in places where it is not practicable to control the hazards at source [3, 4].

Protective clothing refers to garments and other fabric-related items intended to protect the wearer from harsh environmental effects that may result in injuries or death [5]. Personal protective equipment (PPE) refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or harm. The purpose of personal protective equipment is to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective to reduce these risks to acceptable levels [6]. The automobile mechanics' work place contains many hazards which can lead to accidents resulting in burns, punctures cuts, and electrocution. Too many people are injured while working in automotive workshops or carrying out off-site service calls. Manual handling injuries are the most common type of injury occurring in automotive workshops [7]. Personal protective equipment should provide effective protection and be selected according to recognized standards. If a worker wears different protective pieces at once, they should be compatible and effective. The availability of Protective clothing encourages its use by the automobile artisans however, Protective clothing must be maintained in good working order at all times [8].

In the automobile industry, protective clothing is important in the workplace. It provides safety and reduces workers exposure to hazards, when administrative and engineering controls cannot reduce the risks to acceptable levels. The practice of using protective work wear has a hierarchy of control that provides a framework that ranks the type of hazard for risk reduction. The type of hazard, area of body protected and type of accessory or garment categorize protective work wear [8]. The automobile mechanics' work place contains many hazards which can lead to

accidents resulting in burns, punctures cuts, and electrocution. Too many people are injured while working in automotive workshops or carrying out off-site service calls. Manual handling injuries are the most common type of injury occurring in automotive workshops [7].

Statement of the Problem

Researches and initiatives from all sides of the automobile industry have produced a long-term reduction in the number of injuries and fatalities; but recently their effects have diminished and numbers of deaths have even risen [9]. Occupational injuries have higher mortality, longer disability, and higher treatment costs than non-occupational injuries [10]. In Ghana, garages are spread all over with the most popular in Cape Coast Metro known as Siwdu. Workers in the local garages (Siwdu) are involved in various tasks such as vehicle servicing, spraying, auto electrical works and welding, etc. These tasks involve processes which expose workers to physical and chemical agents that pose serious hazards to their health [4]. The health status of the workforce in every country has an immediate and direct impact on national and world economies. Total economic losses due to occupational illnesses and injuries are enormous (WHO, 1999). Furthermore, protective clothing plays a very important role in ensuring that artisans are healthy and safe in automotive workshops. It has been observed that protective clothing is often not worn by workers in the informal sector in Ghana, and this undermines the general health and safety of these artisans leading to different types of injuries [4]. These injuries occur from using their bare hand in handling heavy or awkward objects, heavy lifting, prolonged or sustained work in awkward posture, and other faulty garage equipment such as jacks or lifts, by pushing and pulling vehicles, heavy parts falling on their head/feet or by bursting tires [4, 7]. It is in light of these that the study seeks to investigate the local automobile artisans on the usage of protective equipment in Cape Coast (Siwdu).

Research Question

The study was guided by the following research question.

1. What is the level of awareness of local automobile artisans on the usage of protective equipment in Siwdu?

Research Hypotheses

H_0: There is no statistically significant difference in the use of protective clothing between master crafts men and apprentices in Siwdu.

H_1: There is statistically significant difference in the use of protective clothing between master crafts men and apprentice.

H_0: There is no statistically significant difference in the usage of protective clothing among the categories Auto mechanics, Sprayers, Auto electrician, Welders and Vulcanizers of local Automobile artisans in Siwdu.

H_1: There is statistically significant difference between the usages of protective clothing among the categories (auto mechanic, sprayers, auto electrician, welders and vulcanizers) of local auto mobile artisans.

Significance of the Study

It is believed that the findings of this study will help bring to light the importance of protective clothing and help prevent fatal accidents that may lead to death among local automobile artisans. This will in turn improve working conditions, productivity and income of the local automobile workers. The findings can also serve as the basis for education on usage of protective clothing not only to the local artisans but to the general public through organization of workshops and through the media. Furthermore, the study will give informed decisions to local entrepreneurs to venture into production of protective clothing which will create employment for the youth and generate funds for the government through taxes.

Delimitation and Limitations of the Study

The study focused mainly on local automobile artisans at Siwdu, since there are several ranges of automobile artisans such as, welders, electrician's sprayers, and mechanics among others and thus have a wider workforce capacity as compared to any other designated locality in the Metropolis. Protective clothing in this study covered only overalls, helmets and other Protective clothing used only in the automobile Industry. Despite the strengths of questionnaire, the weaknesses were that, the respondents may not complete the questionnaire resulting in low response rates. Also, the respondents did not understand some items on the questionnaire therefore to resolve this the researcher explained the purpose of the questionnaire clearly to the respondents and gave the respondents further clarifications.

Literature Review

The chapter presents a summary of the related theoretical, conceptual and empirical literature reviewed underpinning to the current study.

Bittel's 3Es of Accident Prevention Model

In understanding the attitude and behavior of artisans towards protective clothing and safety in their workshop and measures they put in place for accident reduction and prevention, framework for accident prevention was used [11]. According to Bittle, accident education and prevention depend on the three E's– Engineering, Education and Enforcement; jobs should be engineered for safety; workers should be educated in safe procedures and safety rules should be enforced [11].

Firstly, engineering a job for safety is very crucial in ensuring safety and health at the workplace. This is because where the work and its environment are not well structured, the chances are that, accidents and injuries are more likely to occur. In many workplaces, a major occupational health and safety concerns the nature in which the work environment and conditions are structured and organized. In many instances, the manner in which the job and its environment and conditions are engineered and organized among workers in the informal sector is a leading cause of the numerous preventable occupational injuries and accidents.

According to Theuri, a characteristic feature of informal small-scale enterprises includes a poor work environment, unplanned and poorly constructed premises with very unsatisfactory health, safety and welfare facilities as well as practically non-protective clothing usage [12]. This situation burdens the productivity, impairs health and general wellbeing, and is detrimental to the quality of life of informal sector workers. Education is another key element in occupational health and safety promotions and accident reduction at the workplace. A job or workplace well engineered for safety and health is a necessary but not a sufficient condition for ensuring safety and health at the workplace. In many instances, workers in both the formal and informal small-scale sector are not well educated on the need to use personal protective equipment as well as follow established and laid down procedures for work. Educating workers on safety mechanisms and procedures is the responsibility of the entire social partners at the workplace namely employers, workers and their unions and state agencies. Artisans' knowledge on safety mechanisms and procedures is not only low but also such preventive measures do not exist at the first place.

Enforcement is another key aspect of accident prevention and reduction in Bittel's model since safety rules and mechanisms should be enforced to ensure workplace safety. Enforcement of safety rules and regulation is the responsibility of workers, employers/management and state regulatory and inspection agencies. Workers at their own levels with the help of their unions have a responsibility in ensuring that safety rules are enforced. Management/ employers through function supervisors also ensure that workers follow established procedures and mechanisms at the workplace. State regulatory and enforcement agencies are also expected to inspect and check for safety practices and conformity to safety procedures at the workplace. In summary, taking the 3Es-Engineering, Education and Enforcement together as a framework for understanding attitude and behaviour of the artisans towards OHS in general and accident prevention in particular, the condition at Siwdu is problematic. In effect, the 3Es are mutually interrelated to bring about workplace safety or otherwise. This is because; a well-engineered workplace must have mechanisms of educating workers to use protective clothing as well as enforcing safety rules.

Theories on Occurrence of Workplace Accidents

Workers differ in respect of the number of accidents they are involved in without protective clothing. Four theories therefore have been advanced to account for individual differences in susceptibility to accident [13]. These are the Theory of Chance, Unequal Differences in Susceptibility, Increased Susceptibility and Decreased Susceptibility. According to (The Theory of Chance), all persons are equally able to suffer accident whether protected or not and it is simply a matter of luck that it happens. One person is just as likely as any other person to have a moment of carelessness resulting in an accident [13]. Unequal Differences in Susceptibility theory: seeks to explain the distribution of accidents in terms of unequal liabilities. It `holds that some individuals are more likely to be involved in accidents than others [13].

Increased Susceptibility: This theory argues that at the beginning of a given job, all persons are equally susceptible to accidents. The first accident that happen is purely determined by chance. However, those who suffer them are thereby predisposed to have more accidents. It is suggested that an accident may make an individual more apprehensive and nervous and less sure of himself so that his later actions are not accurately controlled by protective clothing [13]. Decreased Susceptibility: This theory argues that particularly in certain hazardous occupations, it is sometimes said that the best way to avoid future accidents is to have one. This is based on the old notion that 'a burnt child never plays with fire' [13].

Conceptual Review

Knowledge of Workforce on Occupational Safety Legislations in Ghana

Ghana's occupational safety, health and employee's welfare legislation started with the industries Ordinance of 1950 which was subsequently replaced twenty years later by the industries, Offices and Shops Act, 1970 (FOSA) (ACT 328). The FOSA has not seen any significant change ever since its promulgation about forty years ago [14]. The non-enforcement of the FOSA has contributed to government's inability to recognize the worldwide rapid changes in OHS legislation that takes into cognizance current technological advancement and the challenges of Globalization. In Ghana, the first safety legislation was enacted in 1965 with the passage of the Industrial Relations Act (Act 299, 1965). This was followed by the Factories Act (328) in 1970.

In 1987, the Workmen's Compensation Law (PNDC L 187) was also passed to enable workers receive Compensation for injuries sustained on the job. In 2003, the Labour Act of 1965 was amended and replaced with Industrial Relation Act of 2003 (Act 651). Section 118 of the Labour Act of 2003 provides a guideline on general health and safety conditions [15]. In Ghana, two main employee safety legislations in place for promoting OHS are the industries, Offices and Shops Act of 1970 (Act 328), and the Labour Act of 2003 (Act 651). These two Acts are primarily responsible for protecting the employee from any hazards at the workplace. The enforcement of these acts is the sole responsibility of the Department of industries Inspectorate of the Ministry of Manpower and Labour [10].

Another important Act which provides some form of safety legislation in Ghana is the Labour Act of 2003 also known as Act 657. Part XV of the Labour Act 651, covers Occupational Safety, Health and Environment. This is based on the tenets of ILO Conventions Nos. 155 and 161.This part has sections on general health and safety conditions (118), Exposure to imminent hazards (119), Employer to report occupational accidents and diseases (120). Section 118 on General health and safety conditions states among other things the duty of the employer to ensure the safety of all persons employed at the workplace. It also indicates the responsibility on the part of the employer to provide the necessary information, instructions, training and supervision regarding

health and safety at work. Additionally, the employer must provide adequate safety appliances, suitable fire-fighting equipment, and personal protective equipment and instructs the workers in the use of the appliance or equipment [10].

Section 119 which focus on exposure to imminent hazards and the role of the employee in reporting health and safety hazards to the immediate supervisor. This section also prohibits the employer from dismissing or terminating the employment of a worker who refuses to work in hazardous work situation. Section 120 (which deals with the need for an employer to report occupational accidents and diseases) indicates that, an employer is required to report as soon as practicable and, not later than seven days from the date of occurrence to the appropriate government agency, occupational accidents and diseases which occur in the workplace. By Section 121, the Minister may by legislative instrument make Regulations providing for specific measures to be taken by employers to safeguard the health and safety of workers employed by them [15].

Use of Protective Clothing

According to Elnour and Laz Employers are required to train each employee to use personal protective equipment (PPE) [16]. Employees must be trained to know at least the following: when PPE is necessary; what PPE is necessary; how to properly put on, take off, adjust and wear the PPE; the limitations of the PPE; proper care, maintenance, useful life and disposal of PPE.

Employers should make sure that each employee demon¬strates an understanding of the PPE training as well as the ability to properly wear and use PPE before they are allowed to perform work requiring the use of the PPE. If an employer believes that a previously trained employee is not demonstrating the proper understanding and skill level in the use of PPE, that employee should receive retraining. Other situations that require additional or retraining of employees include the following circumstances: changes in the workplace or in the type of required PPE that make prior training obsolete.

The employer must document the training of each employee required to wear or use PPE by preparing a certification containing the name of each employee trained, the date of training and a clear identification of the subject of the certification [7]. The Automobile Mechanics at Siwdu must have protective clothing for specific task in their shops. Thus, the protective clothing for specific task must show assignable task of work, equipment and tools, work benches, lifts, hoists, offices and restricted storage rooms. The floors must be marked with coloured paint lines indicating dangerous areas, emergency areas among others. Also, there must be instructional as well as special signs for warnings and operations of specialized trained equipment. These signs and markings must show the protection of all types of existing fire extinguishers and their usage, telephones, first aid kits among others [7]. There must also be warning signs on walls for avoidable hazards and no horse plays. The following are the protective equipment for specific task:

Empirical Review

Level of Awareness in Using Protective Equipment by Artisans

Factors influencing the use of protective clothing among automobile artisans in Kigandaini have revealed some misconceptions that taking milk does eliminate effect of exposure to sanding dust and spray fumes [17]. This finding portrays that the use of protective clothing is not even necessary. The artisans would not be thinking about the use of protective clothing at all.

Available literature suggests that factors influencing the use of personal protective clothing could positively or negatively impact personal protective equipment related behaviour, use and compliance. The factors are put into three categories. The first category consists of individual factors such as knowledge of hazards and personal protective equipment, beliefs and attitudes towards personal protective equipment use, perception of risks posed by work, history of injury experience, and socio demographic factors. The second category consists of work environment factors, including availability of equipment and negative or positive pressure. The final category consists of organizational factors such as performance feedback, workplace policies, and training and education programmes [18, 19].

A study sample of 400 in automobile industry was studied and 56% had awareness on occupational hazard and 44.3% of artisans were using the personal protective equipment [20]. Being educated, having job duration ≥6 years and having pre-service training for work were significantly associated with the awareness of occupational hazards. Notably, we found that those who were aware of occupational hazard (OR = 3.01, 95% CI: 1.98–4.57) were three times more likely to use the safety measures when compared to those who were unaware.

A study done in Ifo, Nigeria has shown that sickness and unawareness of protective clothing usage cause a lot of occupational and discomfort to artisans. The study has therefore recommended that safety awareness through training and campaign be provided in addition to effective labour laws to protect workers from exposure to hazards. The use of personal protective equipment among workers should be encouraged [21].

Knowledge and use of protective clothing and equipment among auto technicians in Uyo, Nigeria was studied into in 2016 by Johnson and Motilewa to determine what situation exists in the field of work [22]. The result indicated that the most commonly known PPE among respondents were overalls 146(96.7%), while the least was cream 54 (35.8%). Mechanics were significantly more knowledgeable about overalls and boots than other groups of auto technicians ($p<0.05$). A total of 122 (80.8%) respondents had good knowledge of PPE. This was significantly higher among mechanics ($p<0.03$). However, only 42 (27.8%) respondents' level of utilization of PPE could be classified as good. The most utilized PPE were overalls, 119 (78.8%). No respondent reported receiving any form of training on workplace safety [22].

The use of PPE has also been reported to be very low by several other studies. Workers in informal small-scale industries including those involved in welding, spray painting and metalwork in Dar es Salaam, Tanzania showed low reported use of personal protective equipment [23].

Research Methods

The research design for the study is a descriptive design specifically employing cross-sectional survey to gather information from informal automobile industry Cross-sectional surveys gather information on a particular population at a distinct time [24]. Descriptive research (Cross-sectional survey) was deemed most appropriate for the study because it involved the collection of data in order to answer questions concerning current status of the subject matter under study. Also, this survey provided insight into the research problem that described how available protective clothing are used among the automobile artisans.

The study was conducted at the Siwdu Garage, Cape Coast, Ghana. The Siwdu garage is located close to the Fosu Lagoon in Cape Coast Metropolis. The area shares a common boundary with Adisadel Estates and the Robert Mensah Sports Stadium on the Pedu to Kotokuraba road. The target population for the study was all local automobile artisans in Siwdu which comprised master craftsmen and their apprentices who are mostly males. The total population was 558 which comprised 193 master craftsmen and 365 apprentices. The sampling procedure used was multistage and it included purposive, stratified and simple random lotto sampling techniques with replacement was used to select the required sampling size for the study. A sample size of 112 respondents were selected for the study.

Table 1: Table for Determining 20% Sample Size

	Accessible Population		Sample Size		
Kinds of Job	Master	Appren.	Master	Appren.	Total Sample Size
Auto Mechanics	40	75	8	15	23
Auto Electricians	25	70	5	14	19
Welders	70	80	14	16	30
Sprayers	30	70	6	14	20
Vulcanizers	28	70	6	14	20
Total	193	365	39	73	112

Source: Field Data Mark-Aaba (2019)

Questionnaire was the main data collection instrument. The questionnaires were in two forms. One set of the questionnaire was for the master craftsmen while the other one was for the apprentices. A pilot study with a convenience sample of 35 artisans which were made of master craftsmen and apprentices (9 welders, 8 mechanics, 6 sprayers, 5 Vulcanizers & 7 auto electricians) was conducted in garage outside the study area using the artisans at Kokompe in Takoradi in the Western Region of Ghana with the same set of questions. The reason for pre-testing the instruments was to ascertain the validity and reliability of the instruments. It also gave the advance warnings about where the main research project could fail, where research protocols might not be followed, or whether proposed methods or instruments were inappropriate or too complicated. Finally, it was pre-tested mainly to improve the internal validity of the instruments. The reliability of the instrument was ensured by performing a test retest to determine the stability of the responses of the respondents. This was done in an informal manner to afford the researcher the opportunity to correct the instrument for the main study and also enable the researchers to determine the reliability of the instrument. An introductory letter was collected from the Department of VOTEC to seek permission from the president of the local artisan's association at Siwdu in Cape Coast. Also, artisans' consent was sought for their support and collaboration. The questionnaires were personally administered by the researcher to the teachers. The respondents were assured of confidentiality, anonymity of information given and guaranteed that information provided would only be used for academic purpose. Artisans were then made to answer the questionnaire independently with occasional guidance.

Inclusion Criteria

1. The participant must be 18 years and above. Such age and above at least have the experience and can give me the needed information.
2. The participant must be either a master craftsman or an apprentice.

Exclusion Criteria

1. The participant's age must not be less than 18 years.
2. Dealers and buyers of spare parts only are excluded.

The data collected was edited to ensure that responses were suitable and analyzed using quantitative method according to the research questions. The descriptive statistics was used to analyze research question 1 whiles inferential statistics (independent sample t-test) was used to analyze hypothesis one and means plot and One- way ANOVA were used to present the pictorial view of the result and testing of hypothesis two.

Results and Discussion

This chapter covers the analysis, presentation and interpretation of the findings resulting from this study. The analyses and interpretation of data were carried out based on the results of the research question and hypothesis set for the study. The demographic data includes the respondent's profession and years of working experience. The result has been presented under the sub-headings 'Profession of sampled respondent' and 'Work experience of automobile artisans' to make the reading of the report clearer. The biographical data was analyzed with frequencies, percentages and bar chart.

Profession of Sampled Respondents

The profession of the respondents has been presented in Figure 1. Bar charts are used to show the data collected from 112 respondents.

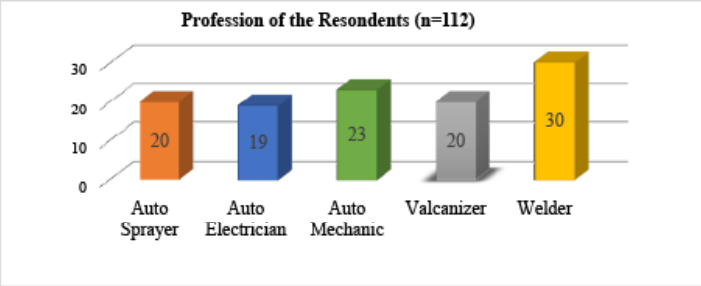

Figure 1: A Bar Chart Showing the Profession of the Respondents.

Source: Field Data Mark-Aaba (2019)

The result in Figure 1 has shown that the Auto Sprayer were 20 (17.8%), Auto Electrician were 19 (16.9%), Auto Mechanics were 23 (20.5%), Vulcanizers were 20 (17.8%) and most of them were Welders30 (26.7%).

Table 2: Work Experience of Automobile Artisans in Siwdu

Work experience	Frequency	Percentage
1-5 years	52	46.4
6 -10 years	33	29.5
11- 15 years	22	19.6
16 years and above	5	4.5
Total	112	100.0

Source: Field Data Mark-Aaba (2019)

Working experience counts a lot in the field of work especially in the artisans' profession. The working experience of the automibile artisans in Siwdu ranged from 1 to 16years and above. The least number of workers in Siwdu who have been working for 16years or more while most workers have been on the field for at most 5years as shown in Table 2. Artsians having about 10 years of work experience happened to be the majority 55 (49.1%) of the workers. The asumption is that the more experienced a worker is in a particular discipline could suggests that the person had handled similar or same problem over the years. Therefore, it is assumed that this could tranlate into quality of work. The working experience of the artisans may guarantee the automobile that one has sent to such people be service well. The irony however, is that due to advancement in teechnology there has been a drastical change in design, mechanism, operations and function of automobiles. This may imply that the older people with more working experience may be out of business.The evolution of computer may have place the young artisans with few years of working experience at an advantage over the 'older' artisans. The reason being that most young artisans of youth in the automobile industry have interest in technological issues. Hence, they would be engaging more in the automobile industry.

Research Question 1 - What is the level of awareness of local automobile artisans on the usage of protective equipment in Siwdu?

In determining the level of awareness of local automobile artisans on the use of protective clothing, descriptive statistics (means and standard deviation) were used to analyze the data and the results is presented in Table 2 for discussion. Table 2 illustrates inclusive results on the level of awareness of local automobile artisans on the use of protective clothing at Siwdu in Cape Coast.

Table 3: Level of Awareness of Local Automobile Artisans on the Use of Protective Clothing

Level of awareness of local automobile artisans on the use of protective clothing	Auto Sprayer		Auto Electrician		Auto Mechanic		Vulcanizers		Welder		Total	
	Mean	±SD	Mean	±SD	Mean	±SD	Mean	±SD	Mean	±SD	Mean	±SD
Safety over coat are used any time I am at work	3.00	.670	3.00	.630	3.00	.087	3.00	.567	2.00	.455	2.00	.546
Welding goggles are used any time I am at work	3.00	.455	3.00	.685	3.00	.656	3.00	.987	2.00	.655	2.00	.654
Sunglasses instead of the goggles are use when working.	4.00	.345	3.00	.512	3.00	.867	3.00	.345	2.00	.884	2.00	.465
Welding helmet are used any time I am at work	3.00	.740	3.00	.987	3.00	.987	3.00	.834	3.00	.083	2.00	.956
Ear muffs are used any time I am at work	3.00	.546	3.00	.758	3.00	.871	3.00	.667	4.00	.673	3.00	.784
Face mask are used any time I am at work	3.00	.873	3.00	.867	3.00	.853	3.00	.565	3.00	.838	3.00	.937
The type of PC I use is dependent on the specific work	3.00	.766	3.00	.872	3.00	.677	3.00	.874	3.00	.678	3.00	.637
Training to use PPE at work is very important.	3.00	.676	3.00	2.78	2.00	.873	3.00	.754	3.00	.745	3.00	.783
Total Means and Standard Deviations	3.00	.603	3.00	.734	3.00	.722	3.00	.678	3.00	.645	3.00	.763

Source: Field Data, Mark-Aaba (2019)

Result from Table 3 shows that the overall, the majority of the automobile artisans have some levels of awareness of protective clothing (MM=3.00, ±SD=.763). For level of awareness of specific Protective clothing, that is how Ear muffs are used any time the artisans are at work with the highest mean of 3.00, and the lowest was how Safety over coat are used any time the artisans are at work with a mean of 2.00. Dwelling on the individual artisan, the results show that Auto Sprayer had highest overall mean of 3.20 with Welders having the least with a mean of 2.61. On individual Protective clothing awareness of the artisans (Auto Sprayer), sunglasses instead of the goggles are use when working recorded the highest mean (4.00) and the lowest was in Safety over coat are used at work (3.00). In relation to the Auto Electrician, majority of them indicated to use Welding helmet at work. This recorded a highest mean of 3.00 whilst few indicated that the type of Protective clothing, they use is dependent on the specific work (3.00). The results on the Auto Mechanic were not quite different from the auto electrician. Most of Auto Mechanics confirmed to use Welding helmet at work with the highest mean of (3.00) whilst few indicated that training to use PPE at work is very important. This recorded the lower mean of (3.00).

The findings from the study corroborate with that of Fidler and Johnson (1984) who averred that when automobile industries are knowledgeable in protective clothing, it has a great influence in automobile industry and can help to avoid uncertainty and perceived risk in the work place. According to Hall and Khan (2002), the use of protective clothing in automobile industry has become necessary to address the issue of the numerous accidents and injuries at work and as such when artisans are aware of the protective clothing, it can help them prevent accident. Also, the findings are in line with the work of Ametepeh who also found out that auto artisans are knowledgeable about some safety measures at work place. The findings again lend support to the work of Elnour and Laz who in their work indicated that artisans were aware of the

use of ear plugs, ear muffs are used to prevent possible risks at the work place [10,16]. Earlier studies indicated that awareness of the use of protective clothing borders on feedback, workplace policies, training and education and in this study, the result indicating that the artisans in Swidu having awareness is a step in the right direction [18, 19, 25, 26]. It may not pose much a problem when further training and education need to be done. The finding in this study also confirms that of Marahatta with 56% of the respondents having awareness on the need to use protective clothing in view of its negative effect on occupational hazards [20]. Having the knowledge on awareness of using protective clothing is not enough so it was recommended in the work of Oranusi that its use should be encouraged among automobile artisans to avoid hazards [21].

Research Hypothesis One

H_0: There is no statistically significant difference in the use of protective clothing between master crafts men and apprentices.

H_1: There is statistically significant difference in the use of protective clothing between master crafts men and apprentice.

One of the objectives of the study was to determine whether there is statistically significant difference in the use of protective clothing between master crafts men and apprentices. To achieve this, independent sample t-test was deemed appropriate for the analysis. The results are presented in Table 3.

Table 4: Results of t-test Comparing Crafts Men and Apprentices on the use of Protective Clothing (n=112)

Artisans	Mean	SD	t-value	Df	Sig-Value
Crafts Men	32.82	2.314	-.897	110	.004*
Apprentice	25.95	1.963			

Source: Field Data Mark-Aaba (2019) **Significant at p=0.05 (2-tailed)

Table 4 presents the difference in the use of protective clothing between master crafts men and apprentices. From Table 4, the means and standard deviation showed that master crafts Men use more protective clothing (mean= 32.82, ±SD=2.314, n=112) than apprentices (mean=25.95, ±SD=1.963, n=112). Also, when evaluating the t and sig. value, the results shows that there was a statistically significant difference between master craftsmen and apprentices on the use of protective clothing. That is (t (110) = -.897, p = .004, n=112, 2-tailed). This implies that master crafts men use more protective clothing than apprentices. Therefore, the null stated as "There is no statistically significant difference in the use of protective clothing between master crafts men and apprentice" is therefore rejected in favor of the alternative hypotheses that "There is statistically significant difference in the use of protective clothing between master crafts men and apprentice".

Research Hypothesis Two

H_0: There is no statistically significant difference between the usages of protective clothing among the categories (Auto mechanic, sprayers, auto electrician, welders and vulcanizers) of local auto mobile artisans.

H_1: There is statistically significant difference between the usages of protective clothing among the categories (auto mechanic, sprayers, auto electrician, welders and vulcanizers) of local auto mobile artisans.

To find out the difference between the usages of protective clothing among the categories (auto mechanic, sprayers, auto electrician, welders and vulcanizers) of local automobile artisans, one-way analysis of variance was deemed appropriate for the analysis. However, prior to conducting ANOVA, certain assumptions need to be met. These include test for normality, homogeneity of variance. The results are presented as below.

Table 5: Test of Homogeneity of Variances (n=112)

Protective Clothing- Auto Mobile Artisans			
Levene Statistic	df1	df2	Sig.
.698	4	108	.578

Source: Field Data, Mark-Aaba (2019) * Significant at p=0.05 (2-tailed)

From Table 5, the sig value for the Levene test is .578 which is greater than the alpha value of p = 0.05 means that the homogeneity of variance has not been violated for the sample test. That is, F (4, 108) =.698, p = .578.

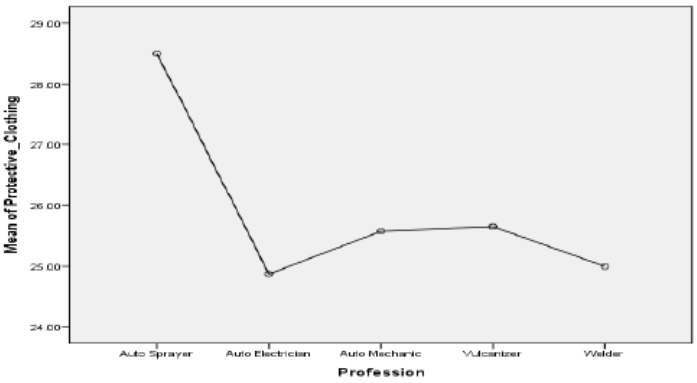

Figure 2: Means plot

Source: Field Data, Mark-Aaba (2019)

Figure 2 shows the easy way to compare the means scores of the local auto mobile artisans. From Figure 2, it clearly shows that Auto Sprayer recorded the highest mean. This was followed by vulcanizers Auto mechanics recorded the third mean scores. The Welder as one of the professions recorded the fourth mean scores. Auto electrician recorded the least scores. Per the means comparisons, one could seem that Auto Sprayers use more protective clothing than all the other local auto mobile artisans. However, in order to conclude, ANOVA was computed to give more statistical evidence.

Table 6: Summary of the ANOVA results (n=112)

Protective Clothing- Auto Mobile Artisans					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	60.543	4	15.136		
				.990	.421
Within Groups	810.561	108	15.294		
Total	871.103	112			

Source: Field Data Mark-Aaba (2019) ** Significant at p=0.05 (2-tailed)

Table 6 presents the results of the ANOVA test. The overall F ratio for the One-way ANOVA is not significant at the Sig value of p = 0.05. It evident from the test that the F-ratio (.990) is not significant (p =.421) at the 0.05 alpha level. This implies that there was no significant difference among the mean scores of local auto mobile artisans. That is F (4, 108) =.990, p>0.05, n=112, p = .421, 2-tailed). From the results, it can be concluded that there was no significant difference among the local auto mobile artisans and as such the researcher fail to reject the null hypotheses that there is no statistically significant difference between the usages of protective clothing among the categories (Auto mechanic, sprayers, auto electrician, welders and vulcanizers) of local auto mobile artisans [27-29].

Conclusions and Recommendations

In the field of work, especially where materials used can cause harm, the necessary precaution should be adhered to. The local artisans in the automobile industry at Siwdu however do not take the necessary precautions at their workshops. Preventable accidents that ought not have occurred may happen at the shops to destroy human life and properties. The irony is that these artisans were aware of the relevance and use of protective clothing. As a result, it is recommended that master craftsmen and union of the artisans should instill in their apprentices the use of protective clothing while working. This measure would make the use of protective clothing while working part and parcel of them so that when they become masters it would easy and comfortable for them to use.

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