

The Influence of Management Support in the Implementation of Occupational Safety and Health Programmes in the Manufacturing Sector in Kenya

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Abstract

The dynamic business environments in which modern enterprises operate in have compelled them to embrace major changes in the area of occupational safety and health (OSH) in the manufacturing sector in Kenya. The growth in industries and the resultant complex nature of business operations over the last decade have resulted in the increase in work related hazards which have had a long term economic implication to the firms in terms of costs of production and ability to contribute to the country's Gross national product. To counter the destructive economic effects of OSH the employers have a general duty to provide a hazard free workplace. The formulation and implementation of OSH programmes have therefore become a priority to many organizations. It is not lost to this study that the formulation and implementation of such programmes come with added responsibilities that many organizations are not ready to bear. Therefore the question; is management ready to embrace OSH changes dictated by the business environment? To answer this question, this

study was undertaken to establish the influence of management support on implementation of occupational health and safety programmes in the manufacturing sector in Kenya.

The study adopted descriptive research design. The design was found to be appropriate because it aided in ascertaining and describing the characteristics of the subjects and phenomena under study. The respondents of the study were occupational health and safety designates. Since each industry constituted a homogenous unit, the respondents were randomly selected. The main instrument for data collection was a structured self administered questionnaire. Out of 257 questionnaires distributed, 252 were returned. Data analysis was done with the aid of statistical package for social sciences (SPSS) window version 21. Descriptive, correlation and regression statistics were generated and interpreted. The study established that management support influenced implementation of OSH programmes and there was a significant positive relationship between management support and implementation of OSH programmes.

Keywords: Dynamic Business Environments, Occupational Safety and Health Programmes, Manufacturing Industries, Management Support

1. Introduction

Occupational health and safety is a cross-cutting disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment (Oak, 2009; Lowe, 2003; International Labour Organization, 2009). According to Mamoria and Ganker (2008) life of industrial workers is full of risks and hazards; every year lots of employees are injured in factories, offices, mines, ports, construction sites, docks and shopping areas leading to acute ailments or permanent handicaps. The injuries may be caused as a result of any unsafe activity or act or just by mere chance occurrences (like walking past a plate-glass window) or as a result of some unsafe work conditions, or defective plant or shop layout. Employees' health is also affected by work-related diseases such as common ailments, chronic diseases like cancer, heart trouble, ulcers, stress, and strain (Mamoria & Ganker, 2008). According to ILO (2006), 120 million occupational accidents occur annually at workplaces worldwide. Of these, 210,000 are fatal accidents. Every day, more than 500 men or women do not come home because they were killed by accidents at work. These are dramatic numbers which draw fairly little public attention; considering the fact that accidents take a considerable economic toll from nations, companies and individuals, they do not get much publicity.

According to ILO (2005) organizational health and safety focuses on the development of specific measures and Programmes, aimed at protecting employees in the course of performing their duties to maximize productivity and improve the overall organizational performance. The safety programmes deal with the prevention of accidents and with minimizing the resulting loss and damage to persons and property while the occupational healthy programmes deal with the prevention of ill-health arising from working conditions; employees' health both physical and mental could be affected by diseases such as cancer, heart problems, ulcers, job stress, and strain as well as accidents (Armstrong, 2006). A good safety programme is an essential part of efficient management, designed to ensure that the whole of a company's assets remain continuously available for profit making (ROSPA, 2005). The main objective of this research paper is to establish the influence of management support on implementation of occupational health and safety programmes in the manufacturing sector in Kenya. It is predictable that when management is not committed to the formulation and implementation of OSH programmes there are high accident and injury levels, work related sicknesses which lead to loss of man hours, high turnover rates, low productivity and

high costs as a result of insurance compensation and related legal charges. To avoid such eventualities, management must endeavor to support the formulation and implementation of OSH programmes as per OSH ACT 2007 of Kenya in line with ILO standards. The study focused on the variables that affect the willingness of management to support the formulation and implementation of OSH programmes. These variables include; provision of safety tools and equipment, existence of OSH policy, allocation of funds for OSH initiatives, how internal safety audits and inspections are undertaken, and existence of a health and safety advisory committees. It is from these variables that the objectives of the study were formulated.

2.1 General Objectives of the Study

The general objective of the study was to investigate the influence of management support on implementation of occupational health and safety programmes in the manufacturing sector in Kenya.

2.2 Specific Objectives of the Study

The specific objectives of the study were:

- i. To find out how provision of the safety tools and equipment affects implementation of occupational health and safety programmes in manufacturing sector in Kenya.
- ii. To investigate how OSH policy affects implementation of occupational health and safety programmes in manufacturing sector in Kenya.
- iii. To explore how allocation of funds for OSH affects implementation of occupational health and safety programmes in manufacturing sector in Kenya.
- iv. To establish how internal safety audits and inspections affect implementation of occupational health and safety programmes in manufacturing sector in Kenya.
- v. To find out how existence of a health and safety committee affects implementation of occupational health and safety programmes in manufacturing sector in Kenya.

3.1 Literature Review

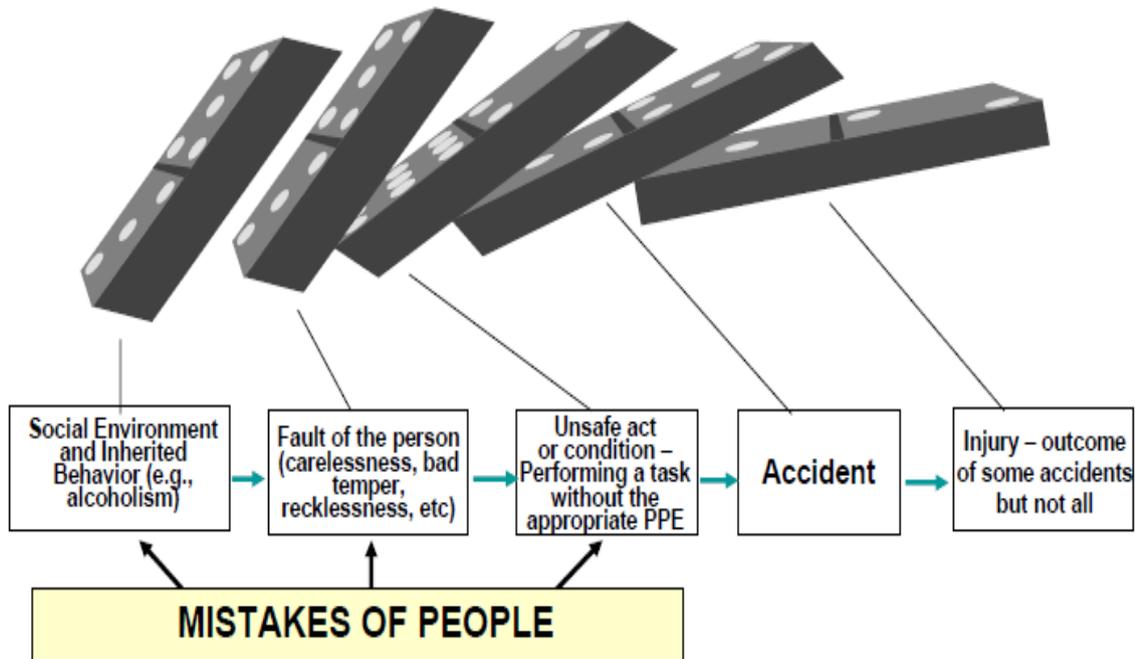
According to Cooper (2006) Management commitment and support is the management's involvement and engagement in actions towards achieving a goal. Management perception of human importance in the organizational setting has been exhibited through deliberate strategic decisions directed at the attraction of desired labor, to the verge of exit. One of such strategic decisions can be epitomized by effort to provide safe work environment to the workforce. This workforce should be available to work uninterrupted if organizational objectives are to be achieved efficiently and effectively. Organizations incur high costs due to poor safety and health programmes and efforts (EU-OSHA, 2009).

As stated by Cole,(2002) ; Cole (2004) ; Wayne (1995) ; Alli (2008) employer has a common law duty to provide a safe place of work for his or her employees and is liable at common law for accidents encountered by his or her employees in the course of their employment. The management must be committed to invest money into OSH activities in order to effectively implement OSH. National safety council (1995); Alan (2007); Rao (2008); Pratt and Bernett (1985) emphasize that management is required whether it wishes or not to give more attention to such H&S matters since from the government to trade unions, insurance companies and the public there is increasing demand that employers provide a safe and health work environment. According to Alan (2007); Rao (2000); Williams, Rodin, Ryan and Grolnick (1998, p. 251) success in safety and health depends on the dedication of all cadres of Management.

As indicated by Cohen (1997); Shannon, Mayr and Haines (1997) one of the factors associated with high safety performance is strong management commitment. This was also emphasized by Shafai-Sahrai (1991); Cohen and Cleveland (2003) who stated that factors prevalent in low injury rate companies were senior management involvement in safety; prioritization of safety in meetings, and in decisions concerning work. Management can also reflect its commitment to OSH by making safety inspections a regular part of a company's operating procedures (national safety council, 1995; Wayne, 1995). This is equally asserted by Gilkey et al. (2003) who found that management support is important in the implementation of OSH. Management commitment is manifested through participating in safety training, facility inspections and incident investigations, empowerment of employees to make decisions, giving rewards and penalizing employees who do not follow safety measures such as the use of personal protective equipments (Akpan, 2011; Holmes, 1999; Shill, Carruthers & Krisjanous, 2006).

3.2 Theoretical Framework

The study was founded on Heinrich's domino accident causation theory. Heinrich's theory and techniques on safety management were supported by research he conducted while employed as an engineer for an insurance company. His major research study concerned the causes of accidents and comprised a subjective assessment of the accident cause in 75,000 accident insurance cases. He concluded that 88 per cent of accidents resulted from 'unsafe acts' and 10 per cent from 'unsafe conditions', making a total of 98 per cent judged to be preventable, with the remaining 2 per cent judged as unpreventable. Heinrich advocated a multi-disciplinary approach to safety which should include management controls (Hale & Glendon, 1987). According to Heinrich, Peterson and Roos (1980) the reasons why people commit unsafe acts can serve as helpful guide in selecting corrective actions. Techniques for safety management proposed by Heinrich include close supervision; safety rules; employee education through training, posters and films; hazard identification through analysis of past experience, survey and inspection; accident investigation; job analysis; methods safety analysis; production of accident analysis sheets; approval processes for new construction, installation of new equipment, and changes in work procedures or processes; establishment of safety committees and arrangements for emergency and first aid. Figure 1 is a reflection of Heinrich's Domino Theory.

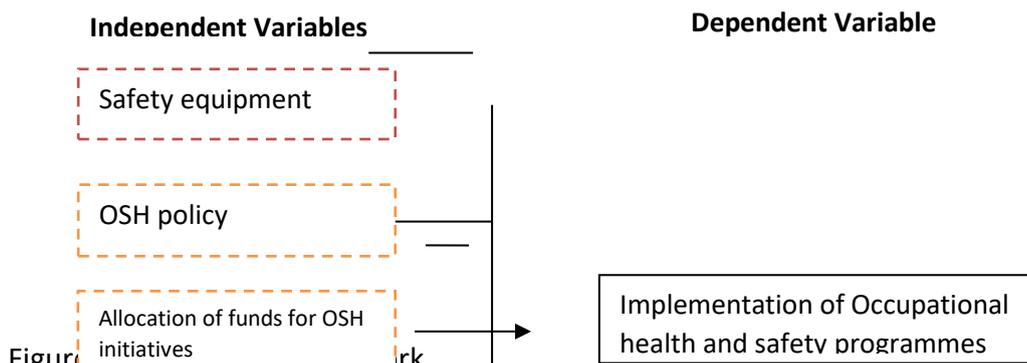


Source: Heinrich HW (1959), Industrial accident prevention: a scientific approach

Figure 1: A reflection of Heinrich’s Domino Theory

3.3 Conceptual Framework

The study conceptualized that management support through commitment in provision of the necessary safety equipments, development of OSH policy, allocation of funds for OSH, organization of internal safety audits and inspections and constitution of health and safety committees influences implementation of OSH programmes. This relationship is shown in figure 2



4.1 Research Methodology

The study used a descriptive research design. Descriptive research can be explained as a research design that describes a phenomenon or any specific situation. Descriptive surveys are surveys that describe the current situation, rather than interpretation and decision making (Creswell, 2003). Descriptive research is conducted by Cooper and Schindler (2006); Babbie (2007) descriptive research is concerned with exploring people’s everyday behavior (Silverman, 2006; Orodho, 2004). It also allow the use of large numbers, selection of unbiased sample and generalization of the sample to the population from which it is drawn (Osman, 1984) especially on human resource issues and factors such as

involvement and accountability. Management support and commitment can best be explained using descriptive approach as explained by (Miles & Huberman, 1994; Babbie, 2007; Wisker, 2001).

4.2 The Population

A population is a complete set of individuals, cases or objects with some common observable characteristics (Mugenda & Mugenda, 2003; Mugenda 2008); all items or people under consideration in any field of inquiry Orotho (2004); group of people about whom we want to draw conclusions Babbie (2007). It is recommended that the researcher should identify and define the target population, sample population and the unit of observation (Mugenda & Mugenda, 2003; Nassiuma, 2000). While the target population is the totality of units which the researcher wants to study, the study population is that portion which is accessible and most representative of the target population (Mugenda & Mugenda, 2003). The unit of observation refers to independent collections of elements from the population that covers the entire population (Nassiuma, 2000).

In order to collect the data for understanding the situation about the Management Support in the Implementation of Occupational Safety and Health Programmes in the Manufacturing Sector in Kenya, a sample of 257 respondents participated in a self-administered questionnaire. The population for the research was health and safety designate in industries in Kenya. According to Kenya Association of manufacturers (2013) there are 735 registered industries in Kenya. According to Kenya Association of manufacturers (2013) there are 735 registered industries in Kenya. Since it's difficult to study the total population due to its large size, limitation of time and resources the study population consisted of an appropriately selected sample of industries as explained in the sampling design.

4.3 Sample Size Determination

A combination of two samples was used in the sample size determination for the study. The first sample was derived from Sample size determination tables by Saunders, Lewis and Thornhill (2007). From the table, at 95% confidence level, the sample size was 254 respondents. The second sample was derived using Yamane (1967) formula for calculating sample size.

The formula is $n = N / (1 + N(e)^2)$:

Where n = sample size, N = population size e = error term

$N = 735$, $e = .05$ hence,

$$n = 735 / (1 + 735(.05)^2)$$

$$= 259$$

Yamane's formula yields a sample size of 259 firms at 95 percent level of certainty. Thus based on the deduction from the two sampling methods an average sample of 257 (254 + 259) / 2 industries was taken as the sample size of the study. The sample size is sufficient since it surpasses the 20% of small population ($n < 1000$) of the target population suggested by (Gay, 2000). Since the population of interest is homogenous a simple random sampling procedure was used to select the sample. According to Mugenda and Mugenda (2003) simple random sampling allows generalization of results and use of inferential statistics. For an industry to be picked to participate in the study it must have been registered by the Kenya Association of Manufacturers by 2013 while individual respondents should have had enough knowledge about OSH initiatives in their respective factories by virtue of their training; secondly, they had a regular experience about OSH programmes. These aspects definitely influenced the attitude and behavior of the respondent in the area of study.

4.4 Data Collection Method

For this study primary data was collected by use of self-administered structured questionnaires. According to Saunders, Lewis and Thorn Hill, (2003) self-administered questionnaires are exhaustive in data capturing and the information is verifiable and have higher response rate as compared to other questionnaires. The questionnaires contained open ended, closed ended questions and some likert-scales. The open ended questions enabled the researchers to get detailed feelings, motives opinions and interests towards the subject of the study.

5.1 Background of the Respondents

Out of the 252 actual respondents 169 (67.1%) were males while 83 (32.9%) were females a disparity that could primarily be a reflection of the normal gender disparity in the country coupled with the fact that manufacturing industries are male dominated due to the nature of work involved. Table 1 shows the response rate by gender

Table 1: Response Rate by Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	169	67.1	67.1	67.1
	Female	83	32.9	32.9	100.0
	Total	252	100.0	100.0	

The age of the respondents ranged between 25-56 years with the majority respondents falling between the age of 26-35(42.9%) and 36-45(33.7%) years. This is expected as it is at this point of career life that most workers start entering into supervisory and management positions; again in most of the organizations the persons who were in charge of occupational health and safety were either chairpersons of OSH committees or other employees deployed into the position at a supervisory level. Table 2 below shows the response rate by gender.

Table 2: Ages of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 25 years	19	7.5	7.5	7.5
	26-35	108	42.9	42.9	50.4
	36-45	85	33.7	33.7	84.1
	46-55	37	14.7	14.7	98.8
	56 and above	3	1.2	1.2	100.0
	Total	252	100.0	100.0	

The results in table 3 revealed that that majority of the respondents were of diploma and degree level of education rated as 45.2 % (114) and 44% (111) respectively. The minority 2.8% and 7.9% held certificate and secondary qualifications respectively. Those with degree qualification were majorly in human resource management and occupational health and safety positions in large organizations. However there were diploma holders who still held those senior positions with a staggering number of certificates and secondary level education holders deployed into health and safety positions as supervisors. The level of education is

significant in this study because it is an indicator of the management commitment to health and safety going by the intellect of the person it has charged with the responsibility of health and safety.

Table 3 Educational Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Degree	111	44.0	44.0	44.0
	Diploma	114	45.2	45.2	89.3
	Certificate	7	2.8	2.8	92.1
	Secondary	20	7.9	7.9	100.0
Total		252	100.0	100.0	

5.2 Descriptive Analysis

The study sought to find out whether management support, employee training, legal framework and employee participation affected implementation of OSH programmes and the moderating effect of organization structure on the relationship between the independent variables and the dependent variable. This section provides an explanation of the descriptive statistics on study variables.

5.2.1 Descriptive Analysis for Independent Variables

The responses on management support showed that 31.3% and 48% (79.3%) agreed and strongly agreed respectively that management was totally committed to health and safety while 1.6% and 6.7% (8.3%) strongly disagreed and disagreed respectively and 12.3% took a neutral position. Management commitment can be supported by the fact that 76.9% of the respondents agreed that management provided all the necessary safety equipments, 75.4% agreed that they had an OSH policy, 65.3% agreed that management allocated funds for OSH, 68.3% agreed that management organized internal safety audits and inspections and 72.6% agreed that management had constituted a health and safety committee.

Though majority of the respondents indicated that management was committed to OSH a reasonable slightly above 30% of the respondents thought otherwise. This was an indication that management especially in small and medium sized firms needed to improve its commitment to OSH especially in allocation of funds, constitution of OSH committee, organizing OSH inspections and audits. The responses also showed that although management in many organizations had put in place a company policy it was yet to be fully implemented.

These findings correspond with the views of Cohen (1997); Shannon, Mayr and Haines (1997); Cohen and Cleveland (1983) who indicate that one of the factor associated with high safety performance and low injury rates is strong management involvement and commitment to safety. Armstrong, (2003, 2006) further suggests that a written health and safety policy is required to demonstrate that top management is concerned about the protection of the organization's employees from hazards at work and to indicate how this protection will be provided. Management commitment can also be reflected in the way management invest money into OSH activities in order to effectively implement OSH programmes as suggested by and making safety inspections a regular part of a company's operating procedures (National safety council, 1995; Wayne, 1995). Shafai-Sahrai (1991); Cohen and Cleveland (1983) in their studies also pointed out prioritization of safety in meetings and in decisions concerning work as one of the factors prevalent in low injury rate companies.

It is also important to note that the respondents disagreements with management's supportive role collaborates with empirical study in UK international oil companies by Colin (1999) who found that in some industries, management's attention is often distracted from

safety by other issues competing for their time, e.g. production, costs, efficiency, quality and the environment. Armstrong (2003, 2006) also sees the importance of health and safety policies and practices as, sadly, often underestimated by those concerned with managing businesses and by individual managers within those businesses. This is further emphasized by a baseline survey conducted in 2005 in Kenya which indicated that many workplaces (65%) violated mandatory legal requirement on the establishment of health and safety committees. Respondents' opinions on other indicators of management support can be viewed from table 4.

Table 4: Descriptive Statistics on Management Support

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The management is totally committed to health and safety	1.6%	6.7%	12.3%	31.3%	48.0%
The management always provide health and safety tools and equipment	3.6%	9.9%	9.5%	44.8%	32.1%
There is a company policy on occupational health and safety	4.0%	6.3%	14.3%	25.4%	50.0%
Management allocates funds for occupational health and safety	3.2%	10.3%	21.4%	30.6%	34.5%
The management often organize internal safety audits and inspections	4.4%	11.9%	15.5%	25.8%	42.5%
There is a health and safety advisory committee in place	4.8%	12.3%	10.3%	25.4%	47.2%
Management takes responsibility for injuries at work	5.6%	11.1%	16.3%	25.8%	41.3%
Occupational health and safety is always an agenda in meetings	6.7%	17.5%	17.9%	20.6%	37.3%

5.2.2 Correlation and Regression on Management Support and Implementation of OSH Programmes

5.2.2.1 Scatter Plot between Implementation of Occupational Safety Programmes /Management Support

A visual observation of the scatter plot between implementation OSH programmes with management support indicated that there was a positive correlation between the two variables. This suggests that management support has some influence on implementation of OSH programmes.

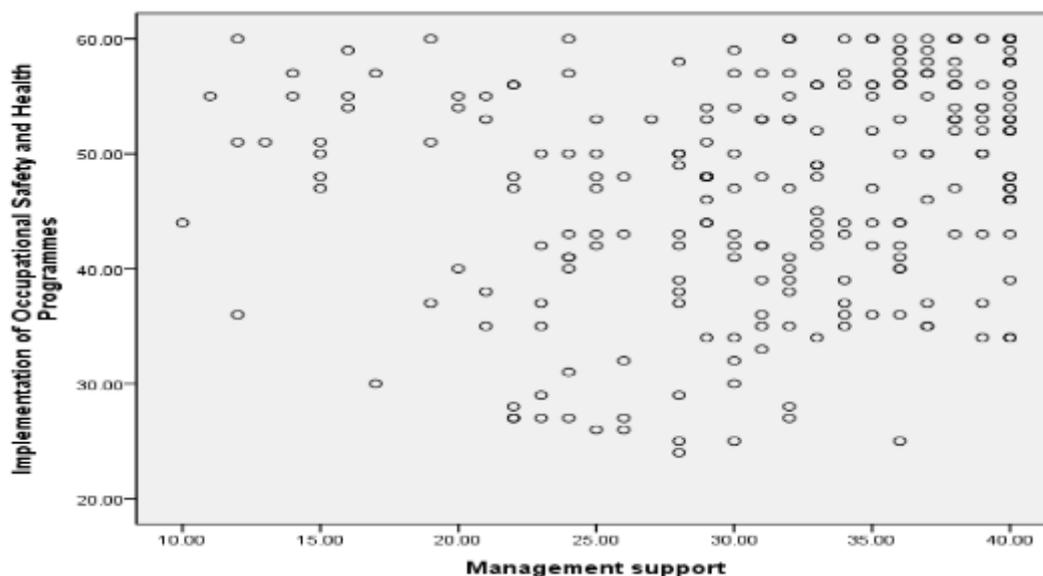


Figure 3: Scatter plot for Implementation of OSH programmes / Management support

5.2.2.2 Correlation between Implementation of OSH Programmes /Management Support

The Pearson correlation analysis in table 5 also revealed that there was a significant correlation between implementation of OSH programmes and management support with p-value =0.000<0.01 and r=0.421 other factors held constant.

Table 5: Correlation between Implementation of OSH Programmes /Management Support

		Implementation of OSH	Management Support
Implementation of OSH	Pearson Correlation	1	.421**
	Sig. (2-tailed)		.000
	N	252	252
Management Support	Pearson Correlation	.421**	1
	Sig. (2-tailed)	.000	
	N	252	251

** . Correlation is significant at the 0.01 level (2-tailed).

5.2.2.3 Line of Best Fit between Implementation of OSH Programmes /Management Support

By fitting a line of best fit it can be observed that some points may not be closer to the line but still there is some positive correlation between implementation of OSH programmes with management support. This is shown in figure 4.8

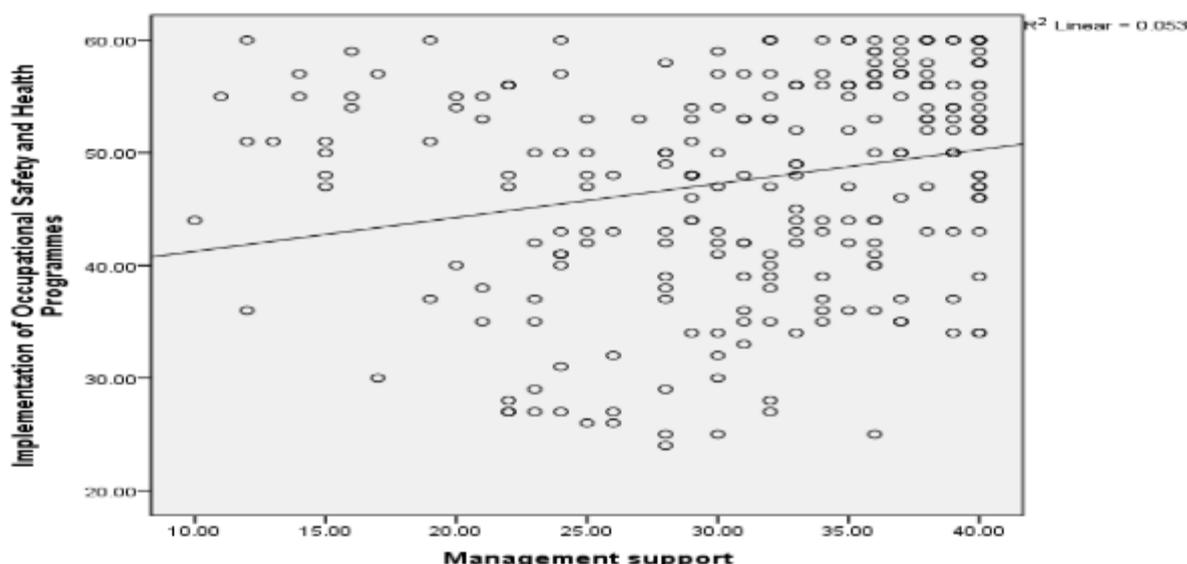


Figure 4: Line of best fit between Implementation of OSH programmes / Management support

5.2.2.4 Regression Analysis between Implementation of OSH programmes / Management support

Regression analysis on management support and implementation of OSH programmes clearly indicate a relationship in which $R^2 = 0.177$ which implies that 17.7% of implementation of OSH programmes was explained by management support as shown in table 6.

Table 6: Model Summary for Management Support

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.421 ^a	.177	.171	9.39783

a. Predictors: (Constant), Management Support

5.2.2.5 ANOVA Test for Management Support and OSH Programmes

Table 7 gives ANOVA summary with F-Statistics value=17.659 and p value 0.000 showing that the model was significant since p value is less than 0.05.

Table 7: ANOVA Test for Management Support and OSH Programmes

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1559.593	1	1559.593	17.659	.000 ^b
	Residual	21903.163	248	88.319		
	Total	23462.756	249			

a. Dependent Variable: Implementation of OSH programmes

b. Predictors: (Constant), Management Support

5.2.2.6 Test of Beta Coefficient on Implementation of OSH Programmes and Management Support

From the coefficient summary in table 8 it can be seen that the t-values are 14.051 and 4.202 with p-values being 0.000 which are again less than 0.05 hence we can conclude that the model was statistically significant. The model can be written as $Y = 36.921 + 0.182X_1 + e$ indicating that for every unit of management support there was an increase in implementation of OSH programme by 0.182.

Table 8: Test of Beta Coefficient on Implementation of OSH Programmes and Management Support

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	36.921	2.628		14.051	.000
Management Support	.182	.043	.258	4.202	.000

a. Dependent Variable: Implementation of OSH programmes

6. Discussion

Finding on the influence of management support on the implementation of OSH programs concluded that there was a positive correlation between OSH programmes and management support. The results were partly consistent with prior studies such as Alan (2007), Rao (2008) who have established that success in safety and health depends on the dedication of top management. Management support create enhanced work environments that reinforce the implementation of OSH programs required to enhance both employees and organizational productivity as a result of improved work satisfaction due to reduced workplace accidents and injuries. Empirical studies by Nayanthara and Wimalaratne, (2012); Nadine and Jennifer (2013) on effective OSH management systems and framework also identified management commitment and strong senior leadership support as key in implementing a comprehensive workplace health and well-being approach.

The study concluded that enhanced management commitment increased the implementation of OSH programs and resultant job satisfaction will finally lead to a reduction in the costs related to managing employees' health and safety, employee turnover and legal charges. In the long-run, employees who perceived management support for OSH programmes and low accidents, injuries and workplace diseases are most likely to stay longer as compared to other employees.

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