MANAGEMENT PRACTICES ON OCCUPATIONAL HEALTH AND SAFETY IN THE TANZANIAN'S SMALL SCALE MINING FIRMS: DOES COMPLIANCE COST MATTER?

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ABSTRACT

This article examines how management practices influence the implementation of occupational health and safety at workplace in Tanzanian's small scale mining firms. The paper focuses on the mediating effects of perceived compliance costs. Structural Equation Modeling (SEM) was used to analyze data from 297 small scale mining firms and verify all hypotheses on direct and indirect effect of management practices on the implementation of occupational health and safety at the workplace. Using the ERG theory, the results demonstrate that Safety Training (ST) and Employee Communication (EC) have positive influence on the implementation of organization Safety Support (OSS) and Proactive Hazard Control (PHC) at the workplace. In relation to the contingency theory, the findings further revealed that the effects of EC on OSS and PHC were fully mediated by perceived compliance cost (PCC). Also, it partially mediated the effect of ST programs on the implementation of OSS and PHC at the workplace. These results imply that although the implementation of health and safety programs seems to cost the organization, ignoring it will make the organization incur more costs. Therefore, management should avoid too much cost –cutting measures in the process of ensuring safety at the workplace.

Key words**:** *Small scale mining, Organization Safety Support, Proactive Hazard control.*

INTRODUCTION

The implementation of Occupational Health and Safety (OHS) is mandatory in many nations due to its significant role in promoting security, and healthy environment to employees (Yusuf et al., 2012). It also acts as a catalyst to the economic, social and political sectors. However, its implementation is still questionable to many working organizations, especially in developing nations due to poor Management Practices (MPs). It is estimated that more than 2.3million fatalities occur every year all over the world, following the poor implementation of (OHS) which causes a loss of about 6300 employees in a day (ILO, 2014). This calls for deliberate measures in order to resolve the problem for the betterment of the organization. As Katsuro et al. (2010) argue, the organizations that ignore health and safety automatically have their productivity reduced due to absenteeism and loss of goodwill from the entire workforce and the surrounding community. It consequently impairs the initiatives of enhancing suitable development.

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The mining industry seems to be the most affected by poor OHS following several reported cases. It is evident that miners are constantly at risk due to occupational hazards present in mining sites such as dust, extreme sound, heat, pitfalls, insufficient oxygen, poor lighting and knocks by machine/tools (Elgstrand &Vingard, 2013). For instance, gas explosion in a coal mine in Northern China in February 2009 left at least 74 miners dead and 114 hospitalized. Michelo et al. (2009) argue that, at least 165 injuries and 20 fatalities were reported at Zambia copper mining. Small scale mining employees are at more risk, especially in developing countries including Tanzania. Related matters and deaths reported are caused by organization management carelessness (Khdair, Shamsudin & Subramaniam, 2011). Small scale mining is reported to be among the risky and dangerous occupations in Tanzania due to a number of limitations including involvement in severe accidents that account for lives of individuals (Abdullah et al., 2009). Poor MPs, lack of technology caused by insufficient capital to the miners and lack of training were reported to be catalysts for hazards at the workplace. The way workers are protected and compensated following injuries and other ailments associated with exposing the workforce to hazardous substances is a major public concern that needs collective action to stimulate all stakeholders to take acceptable measures and feel responsible to the workers. For example at Mererani in 2002, some 48 miners suffocated to death when a compressor used to pump in clean air failed to work (Maginga & Purefoy, 2013). In 2006, a miner was killed by falling loose rocks and in March 2007, the death of three miners in Same district in Tanzania was attributed to collapsed pits. Also at Mererani, in 2008, at least 65 miners drowned to death after floods swept through underground pits and tunnels (Maginga & Purefoy, 2013).

Literature on OSHA suggest that in order to protect employees from occupational accidents and create a safety culture, management practices such as safety training, employee involvement and employee communication are important and need to be put in place to prevent accidents and injuries in the organization (Vredenburgh, 2002; Ali et al., 2008). The implementation of management practices on OHS is contingent to priority since it depends on environmental situations for the management to make a decision. However, safety is significant to all human beings. Laursen and Foss (2013); Demo et al. (2012) and Tan and Nasurdin (2011) conducted studies on OHS and identified leadership style, employees' attitude, and hiring practices as important elements of management practices for safety culture. Other researchers like Desa et al. (2013) listed rewards, employee involvement, safety training, employee communication and management commitment as MPs which play important role towards improving working condition of employees. The literature portray that there are conflicting argument on the practices which influence OHS at the workplace.

However, basing on the discussion of various studies on OHS, it seems that there are different views among researchers on the factors influencing health and safety in the organization. Therefore, this study used Employee Involvement, Safety Training, and Employees Communication as factors that influence employees' OHS behavior, an argument which has been supported by Nursyazwani and Zamri (2013).

Industries in the country (Tanzania) were observing occupational health standards even before and after independence under the Factories Ordinance Cap 297 of 1950. However, its implementation was centered on manufacturing factories alone. There were no proper programmes to stimulate the OHS in other workplaces. The Nationalization in 1967 was not a relief to employees because the enforcement of OHS was not effective due to the fact that the government was playing the role of employer, enforcer and at the same time as the regulator. As a result, weaknesses on the implementation of OHS were not well handled since the government became the owner of factories.

The privatization process in 1990's added challenges relating to OHS regulations compliance because managers of industries failed to enhance OHS behavior to employees (URT, 2009). In view of this shortcoming, the Tanzania government has been taking measures to protect its employees. This is justified through the establishment of Occupational Safety and Health Authority (OSHA) in 1997, endorsement of Occupational Health and Safety (OHS), Tanzania Act No. 5 of 2003, establishment of Occupation Health and Safety Policy of 2009, Compensation Act No 20 of 2008, the ratification of ILO Convention No. 170 of 1993 in 2014 about safety in the use of chemicals at work and the Mineral Policy of 2009, which enhance the best practices of health and safety as among the initiatives intended to control potential occurrence of occupational hazards.

Despite the above measures, employees are still facing various health and safety challenges that keep their lives at risk following poor working conditions which finally cost lives of employees. The mining industry in Tanzania is among the most affected working sites due to persistent reporting of fatal injuries, accidents and deaths at workplace. Most of those accidents are associated with rock fall, fire explosions, automobile equipment accidents, falls from higher heights, entrapment, but also flooding of underground workings and suffocation (Museru et al., 2013).

However, the managers in charge of H&S activities have not been able to reduce occurrences of accidents especially in small scale mining firms (Surienty, 2012; Mills & Lin, 2001). Despite the governments' efforts to control employees' work-related risks, the workplaces are still at risk due to the persistent occupational injuries, deaths, illnesses and accidents (Mrema et al., 2015). Therefore, the commitment towards seriousness and accountability of management practices in solving safety issues is questionable. There is lack of understanding of MP as an internal factor and effective OHS in Tanzania. Hence, there is a need to consider the mediation effects of the perceived compliance cost on the effect of the managerial practices on the implementation of OHS in small scale mining firm, due to the fact that the implementation of OHS cannot be the same in all firms. However, based on the aforementioned issues, the available literature does not consider the mediation effects of the perceived compliance cost on enhancing better safety practices. As a result, this paper analyzes the mediation effects of the perceived compliance cost of the influence of MP on OHS in Tanzania's small scale mining firms.

THEORETICAL BACKGROUND AND REVIEW OF LITERATURE

The study used two theories namely ERG theory and Contingency theory of leadership. The ERG theory was proposed by Alderfer (1969). This theory is an expansion of Maslow's basic needs. It thus adds three needs which are; need for existence, need for relatedness, and need for growth. The three needs have become popular and predominant in explaining different concepts on organizational management with new methods of considering human behavior and attitude (Yang & Chen, 2011). The ERG theory has been used to explain and predict workplace issues and it has contributed to human behavior which has a connection to health and safety at the workplace. Therefore, this theory is significant because it explains safety issues to the organization. Basically, the theory does not assume that the satisfaction of lower order needs is required before pursuing higher order (Caulton, 2012). The theory advocates that satisfaction can happen at any stage of needs without necessarily following the hierarchy. Therefore, the ERG theory explains or predicts workplace issues, and personal development. Here safety as among the basic needs to human being considers the prevention from fear, anxiety, threat, danger and tension at working environment which is free from threats or harm to all employees in the organization. However, the ERG theory

cannot capture well the influence of management practices on occupational health and safety in small scale mining firms. This is because it is focused on the importance of maintaining safety to the employees without considering other factors. Hence, the Contingency theory of leadership was adopted to complement the ERG theory.

Under the Contingency theory of leadership, the focus on the perceived compliance cost is mainly on the implementation of occupational health and safety at the workplace. This theory was used to examine the influence of the perceived compliance cost on management practices and occupational health and safety at the workplace. There is a significant attention from researchers in examining the practices of management on health and safety matters (Lawrence & Lorsch, 1967). With these facts, it is important to examine how perceived compliance cost mediates the effect of management practices on the implementation of occupational health and safety by putting the contingency view into consideration.

Employee Involvement and Occupational Health and Safety at the workplace

Employee involvement influences the implementation of occupational health and safety at the workplace. Kaynak et al. (2016) indicate that the OHS practices as safety procedures and risk management, safety and health rule, need the participation of employees. Employee involvement stimulates organization commitment on health and safety matters through provision of first aid support and training about safety issues. Yorio and Wachter (2014) noted that employees tend to be incapable and cannot utilize their knowledge and skills well if the organization does not involve them. Furthermore, employees are incapable of deploying their competencies unless the organization provides them the opportunity to do so. The benefits of employee involvement practice possibly increase attitudinal and behavioral adoption of various practices, greater satisfaction with decisions made and the results of those decision ownerships and identification with the outcomes of relevant practices and decisions (Oakman & Bartram, 2017). Thus the following hypothesis was developed:

> *H_1: Employee involvement significantly influences the implementation of occupational health and safety activities at workplace.*

Safety Training and Occupational Health and Safety at the Workplace

Safety training has an influence on the implementation of Occupational Health and Safety at the workplace. Various literature reviewed on the topic revealed that there is a significant influence on safety training on the proper implementation of health and safety programs at the workplace. Yorio and Wachter (2014) state that safety knowledge; skills and abilities are a function of education and training which is vital for the organization to realize efficiency. Kaynak et al. (2016) noted that, after organizational entry, training is designed to enhance both the technical and interpersonal skills of employees that can lead to more competent and reliable behavior and finally affect positively the health and safety in the organization. Mashia et al. (2016) post that as employee behavior becomes more reliable, trust in the collective workforce is also enhanced. In turn, it can lead to increased cooperation and information sharing. Safety training directly increases the safety-related knowledge corresponding to the occupational risks posed to workers in job tasks. Workers display that knowledge through their behaviors. It can create a work atmosphere characterized by trust and an awareness of how individual safe behavior can impact on the collective. Hence, in this juncture the following hypothesis was developed:

> *H_2: Employee safety training significantly influences the implementation of occupational health and safety activities at the workplace.*

Employee Communication and Occupational Health and Safety at the Workplace

Employee communication has an influence on the implementation of Occupational Health and Safety at the workplace. Sembe and Ayu (2017) in their study indicate that communication and information sharing is a safety management practice that uses mechanisms to emphasize how to apply safety knowledge, increase awareness, and promote the importance of individual and interdependent safe work. Well designed and effective employee communication, especially open communication on safety performance, tends to stimulate organization performance. Yorio and Wachter (2014) argue that organizations might use print media (e.g., posters, journals, newspapers) to increase cognitive awareness of safe work and emphasize its importance or hold formal meetings designed to verbally convey information and exchange ideas with the workforce. Mashia et al. (2016) maintain that communication and information-sharing practices have been formally linked to safety performance and have been hypothesized to enhance both vertical and horizontal ties. Information sharing is characterized by mutual trust between parties where ideas surrounding the organizational safety programmes can be freely exchanged. Thus the following hypotheses were developed:

> *H_3: Employee communication significantly influences the implementation of occupational health and safety activities at the workplace.*

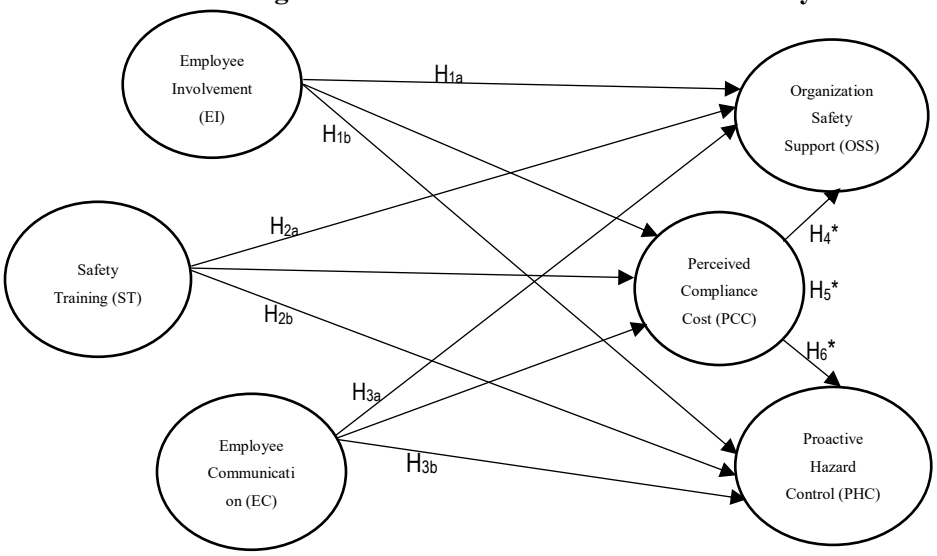
The perceived compliance cost is also said to influence the implementation of health and safety in the organization (Umeokafor et al., 2014). The cost of compliance increases the cost of production. In most cases, it is often high and expensive. Mashia et al. (2016) describe perceived compliance cost as the cost incurred by the organization in complying with basic requirements in the organization such as the implementation of health and safety regulations. However, many employers do not realize that improving working conditions can be viewed as an investment (Kaynak et al., 2016). There are various costs on OHS including the cost of complying with law requirements, payment of insurance premiums by employers to private insurance companies, the cost incurred due to improper working conditions and the cost of implementing and maintaining OHS in general. Nordlof et al. (2017) view that, the total costs of accidents on a construction site depend greatly on project safety performance. If the safety performance is good, the accident costs will be less, and vice versa. It has been argued that the higher the safety investment the better the safety performance. However, some literature revealed that most managers set aside very little funds for investing in safety in their organizations. But it is argued that safety investment cannot survive without limits. Umeokafor et al. (2014) opine that some contractors may weigh the cost of compliance with OSH regulations and the overall cost of production against the profit margin and decide to comply at a convenient level by avoiding the direct and indirect cost of accidents. These arguments led to the development of the following hypotheses:

> *H_4: The effect of employee involvement on the implementation of occupational health and safety at the workplace is mediated by perceived compliance cost*
>
> *H_5: The effect of employee safety training on the implementation of occupational health and safety at the workplace is mediated by perceived compliance costs.*
>
> *H_6: The effect of employee communication style on the implementation of occupational health and safety at the workplace is mediated by perceived compliance costs.*

The model was developed to demonstrate the mediation effect of the perceived compliance cost when the implementation of occupational health and safety in small scale mining firms is

influenced by management practices. Hypotheses H_4, H_5, and H_6 will be divided to (a) and (b) because the dependent variable i.e. OHS will be measured by using two sub-constructs (a) OSS and (b) PHC. Figure 1 demonstrates the perceived compliance cost as a mediator to describe the effect of management practices on the implementation of occupational health and safety in small scale mining firms.

Figure 1: The Structural Model for the Study



Key: $H_{4a,b}$*, $H_{5a,b}$* and $H_{6a,b}$* - Mediation test

Measurement of Implementation of Occupational Health and Safety

The established instrument to measure the implementation of Occupational Health and Safety (OHS) in this study was the Organization Safety Support (OSS) and Proactive Hazard Control (PHC). Safety rules and procedures plus the uses of First-Aid support are tools used in the measurement of OSS and PHC (Kaynak et al., 2016). The management practices MP was also measured by the implementation of Employee Involvement (EI), Safety Training (ST) and Employee Communication (EC). Desa et al. (2013) suggested employee's participation in identifying safety problems with balanced health and safety committees, safety training programs and the adherence to maintaining instruction about health and safety at the workplace. The verification of safety work practices controlling the work related injuries, availability of hazard warning signals and provision of feedback to employees about unsafe behavior is very important to the management practices (Khdair, et al., 2011).

METHODOLOGY

This study applied explanatory research design whereby quantitative technique was used to analyze data from 297 respondents. The choice of the design was based on the fact that it provides the statistical generalization of the findings which suit the needs of the study (Mashia et al., 2016). Tanzania is among the countries with high rates of mining injuries (Mrema et al., 2015) therefore data were collected from three (3) regions namely Shinyanga, Arusha and Geita. These regions were randomly selected from the Lake and Northern zones of Tanzania, where there is a good deal of mining operations. In this study, 390 questionnaires were administered face to face to the employees who work in mining firms. At the end, 297 questionnaires were found valid for data analysis. Structural equation modeling (SEM) technique with the application of AMOS v.23 software; was used to estimate the research model in Figure 1.

FINDINGS

This study had four assumptions which were tested in order to justify the use of SEM. The assumptions were the normal distribution of data, homoscedasticity and identification of outliners. Using the P-P Plot of regression, standardized residual data in all research variables were normally distributed. Besides, no multicollinearity problem was found since the Tolerance Value (TV) and Value Inflated Factor (VIF) in all variables used in this research were greater than 0.1 for TV and less than 10 for VIF respectively as recommended by Williams (2015). The process of data screening also revealed that there was no problem of heteroscedasticity since the scatter plot showed that the residuals were evenly distributed around the axis. In the case of outlier, the outlier labeling methods were used and about three outliers were omitted after being found in this study. A summary of the respondents involved in this study is indicated in Table 1.

Table 1: Details of Respondents' Characteristics

SN	Details	Category	Frequency	%
1	Location	Lake zone	189	64
		Northern zone	108	36
		Total	**297**	**100**
2	Gender	Male	214	72
		Female	83	28
		Total	***297***	***100***
3	Age	18-35	104	35
		36-45	137	46
		46-55	41	14
		56-65	15	05
		Total	***297***	***100***
4	Marital status	Widow	31	10
		Divorced	43	15
		Single	88	30
		Married	135	45
		Total	***297***	***100***
5	Education level	Postgraduate	06	02
		Bachelor degree	15	05
		Diploma level	21	07
		Advanced level	27	09
		Vocational training	38	13
		Secondary	53	18
		Primary education	80	27
		Non formal education	57	19
		Total	***297***	***100***

Source: Field Data (2017)

Effect of Management Practices on Occupational Health and Safety

In this section, there were three major hypotheses, namely $H_{1,}$ H_2 and H_3. H_1 states that EI influences the implementation of OHS programmes at the workplace. H_1 was divided into two sub hypotheses; H_{1a} and H_{1b}. H_{1a} states that in identifying safety issues, EI has a positive influence on the implementation of OSS at the workplace. H_{1b} hypothesized that in identifying safety issues, EI has a positive influence on the implementation of PHC at the workplace. H_2 was divided into two sub hypotheses; H_{2a} and H_{2b}. H_{2a} states that ST programmes have a positive influence on the implementation of OSS at the workplace. H_{2b} states that ST programmes have a positive influence on the implementation of OSS on the implementation of PHC at the workplace. The last major hypothesis in this study namely H_3 was divided into two sub hypotheses. H_3a states that EC has a

positive influence on the implementation of OSS at the workplace. H_{3b} states that EC has a positive influence on the implementation of PHC at the workplace.

The path analysis results showed that there was a significant effect of ST programs on the implementation of OSS at the workplace ($\beta = 0.465$, $p < 0.001$). The analysis also showed that there was significant effect of ST on the implementation of PHC at the workplace ($\beta = 0.394$, $p<0.001$). Hence, each hypothesis, that is, H_{2a} and H_{2b} was supported. However, H_2 was fully supported.

The path analysis results also show that there was a significant effect of EC at the workplace ($\beta = 0.530$, $p<0.001$) on OSS. Also, the analysis showed that there was a significant effect of EC on the implementation of PHC at the workplace ($\beta = 0.622$, $p< 0.001$). Hence, hypotheses H_{3a} and $H_{3b,}$ were supported. Therefore, both ST programs and EC significantly influence the implementation of OSS and PHC at the workplace, but EC has great influence than ST due to the greater regression weight, i.e. $\beta = 0.622$, $p < 0.001$ and $\beta = 0.530$, $p < 0.001$ which was great than what was found on the ST.

According to the results, EI had insignificant influence on the implementation of OSS, as well as the PHC at the workplace ($\beta = 0.091$, $p = 0.227$ and $\beta = .061$, $p = 0$ .433). During the interview, the respondents commented that the management involves the employees on other mining issues but occasionally on matters relating to health and safety matters. Provision of health and safety services in organizations appears to be very expensive. It includes money for purchasing protective gears, machines and providing refreshments at the workplace. These expenses can hinder proper and effective employee involvement in health and safety issues at work. Table 2 provides the regression weights and hypotheses testing (only H_2 and H_3 were supported).

Table 2: The Regression Weights for the Structural Paths

Path	β	S.E.	C.R.	p-value	Hypothesis	Remarks
EI→OSS	.091	.075	1.208	.227	H_{1a}	Not supported
EI→PHC	.061	.078	.785	.433	H_{1b}	Not supported
ST→OSS	.465***	.087	5.338	.000	H_{2a}	Supported
ST→PHC	.394***	.088	4.501	.000	H_{2b}	Supported
EC→OSS	.530***	.096	5.542	.000	H_{3a}	Supported
EC→PHC	.622***	.106	5.858	.000	H_{3b}	Supported

****significant at 0.001; **significant at 0.05*

Source: Field Data (2017)

On the one hand, the model shows that the additional unit of the standard deviation of EI in identifying safety issues led to 0.09 significant increases in standard deviation of the implementation of OSS at the workplace. It shows also that the additional unit in standard deviation of EI in identifying safety issues led to the 0.06 significant decreases in PHC at the workplace.

On the other hand, the additional unit of the standard deviation of ST programmes led to 0.45 significant increases in standard deviation of the implementation of OSS at the workplace. Again, it shows that the additional unit in standard deviation of ST programmes led to 0.39 significant decreases in PHC at the workplace. The model shows that the additional unit of the standard deviation of EC led to 0.45 significant increases in standard deviation of the implementation of OSS at the workplace. It forth shows that the additional unit in standard deviation of EC led to the

0.55 significant increases in PHC at the workplace. This means that management practices, namely EI, ST and EC implementation, had different contributions to the OSS and PHC at the workplace.

The model was assessed to see whether it fits the data well by examining the model fit indices. The model fit indices included CMIN/df, GFI, AGFI, CFI and RMSEA. The indices indicated that the model fitted the data well because they were all within the recommended values. The chi-square value was 163.503, p-value of .000, while the degree of freedom was 95. The chi-square value was insignificant which indicated that there was no statistically significant difference between the default model and saturated model. Table 3 presents the model fit indices with the recommended value.

Table 3: Goodness of Fit Indices for the Direct Model

Goodness of Fit Measure	Calculated Index *	Recommended value	Author
CMIN/df	1.721	<5	Bollen (1989); Ullman (1996
GFI	0.937	$\geq$ 0.90	Byrne (2010)
AGFI	0.910	$\geq$ 0.80	Chau and Hu (2001
CFI	0.946	$\geq$ 0.90	Hair et al. (2010)
RMSEA	0.049	< 0.08	Hoe (2008); Steiger (2007) cited by Hooper, Coughlan and Mullen (2008)

Source: Field Data (2017)

The Mediating Effect of Perceived Compliance Cost

Several situations must be fulfilled in order to test the mediating effect. Baron and Kenny (1986) mentioned three conditions that should be fulfilled in order to examine the mediation effect of a given variable. The first condition states that there must be a significant association between independent variables (IV) and dependent variables (DV). The second condition explains that there must be a significant association between the IV and a mediating variable. Third, there must be a significant association between the mediating variable and the DV. Finally, after controlling the effect of the mediator, the effect of the IV on the DV should no longer be significant for a full mediation. If the path is significant with a reduced effect then it will be termed as partial mediation. Table 4 indicates the results of the mediation test by using Baron and Kenny's approach

The direct effect of ST programmes on the implementation of OSS at the workplace was significant ($\beta = 0.465$, $p<0.001$). The same approach was applied to ST programmes and the implementation of PHC at the workplace ($\beta = 0.394$, significant at 0.001). Moreover, the effect of EC on OSS at the workplace was significant ($\beta=0.530$, $p<0.001$). Likewise, the effect of EC on the implementation of PHC at the workplace was significant ($\beta = 0.622$, $p<0.001$). However, the effects of EI on OSS and PHC were not significant.

Furthermore, the results in Table 4 shows that the effect of ST programmes on PCC was significant (i.e $\beta = 0.248$, significant at 0.006). Also, the effect of EC on PCC was significant as well ($\beta = 0.478$, significant at 0.001). However, the effect of EI on PCC was not significant. Then the second condition on the effect of IV on the mediator variable was fulfilled except for the EC→PCC path. The analysis shows that the effect of PCC on both OSS ($\beta = 0.740$, $p<0.001$) and PHC ($\beta = 0.717$, significant at 0.001) are significant; hence providing details for the third condition.

Table 4: Regression Weights for Direct and Indirect Models

Paths	Direct Model				Hypothesis	Indirect Model					Hypothesis
	β	S.E.	C.R.	*p*-value		β	S.E.	C.R.	*p*-value	Remarks	
EI →OSS	.091	.075	1.208	.227	H_{1a}	-.084	.068	-1.232	.218	No mediation	H_{4a}
EI →PHC	.061	.078	.785	.433	H_{1b}	-.115	.077	-1.499	.134	No mediation	H_{4b}
ST →OSS	.465***	.087	5.338	.000	H_{2a}	.203***	.70	2.917	.004	Partial mediation	H_{5a}
ST →PHC	.394***	.088	4.501	.000	H_{2b}	.157**	.077	2.045	.041	Partial mediation	H_{5a}
EC →OSS	.530***	.096	5.542	.000	H_{3a}	.048	.080	.608	.543	Full mediation	H_{6a}
EC →PHC	.622***	.106	5.858	.000	H_{3b}	.171	.090	1.904	.057	Full mediation	H_{6b}
EI →PCC	.243	.091	2.660	.008							
ST →PCC	.248***	.090	2.763	.006							
EC →PCC	.478***	.103	4.639	.000							
PCC→OSS	.740***	.090	8.265	.000							
PCC→PHC	.717***	.093	7.688	.000							

Note: β-Path estimate, ***means significant at 0.001; ** means significant at 0.05 *significant at 0.1
Source: Field Data (2017)

Therefore, relating to Baron and Kenny's approach, the results in Table 4 portray that the perceived compliance cost partially mediated the effect of ST programmes on the implementation of OSS at the workplace. The direct path estimate was reduced from β =0.465*** to β = 0.203*** when the mediator was introduced. In addition, the results showed that perceived compliance cost partially mediated the effect of ST programmes on the implementation of PHC at the workplace. The direct path estimate was reduced from β = 0.394***to β = 0.157** when the mediator was introduced.

On the other hand, the results showed that the perceived compliance cost fully mediated the effect of EC on OSS at the workplace. The reason was that the independent variable (EC) no longer influenced the dependent variable (OSS) after the mediator (PCC) was introduced. Similar analysis was applied to the EC →PHC path, where the results showed that perceived compliance cost fully mediated the effect of EC on PHC at the workplace. The path estimate was reduced and changed from significant to insignificant effect when the mediator was introduced. However, there was no evidence of the mediation in the analysis of EI →OSS and EI →PHC. Table 4 presents the summarized information on the aforementioned explanations and the results of the hypotheses testing (i.e. mediation effect was found only in H_5 and H_6).

The model fit indices, namely CMIN/df, GFI, AGFI, CFI and RMSEA, were calculated in order to examine the goodness of fit of the model in the study data. The indices demonstrated that the model fits well the data of the study because they were all within the recommended values. The chi-square was 145.442 and p– value was 0.316, while the degree of freedom was 138. The chi-square value was insignificant which indicated that there was no statistically significant difference between the default model direct and direct model. Table 5 presents the model fit indices:

Table 5: Goodness of Fit Indices for the Direct Model

Goodness of Fit Measure	Calculated Index *	Recommended value	Author
CMIN/df	1.054	<5	Bollen (1989); Ullman (1996
GFI	0.952	≥ 0.90	Byrne (2010)
AGFI	0.934	≥ 0.80	Chau and Hu (2001
CFI	0.995	≥ 0.90	Hair et al. (2010)
RMSEA	0.013	< 0.08	Hoe (2008); Steiger (2007) cited by Hooper, Coughlan & Mullen (2008)

Source: Field Data (2017)

DISCUSSION OF THE FINDINGS

The findings revealed that ST programmes had a positive influence on the implementation of OSS and PHC at the workplace. The provision of training normally adds knowledge and skills to the trainee especially if it has been prepared well. The rationale for ST to the employees can be seen by the knowledge and skills obtained from training and the impact it has towards reducing accidents at workplaces. Though ST seems to cost many organizations especially small firms, its significance is more vital than the cost it consumes to the organization. If ST has been done well, it controls the unnecessary work related diseases and deaths which affect the image of the organization. Arguing along the same line, Mashia et al. (2016**)** maintain that, safety training is an important risk prevention and control strategy to guarantee that every employee is safe and is working in a conducive workplace. Moreover, the findings revealed that EC had a positive influence on the implementation of OSS and PHC at the workplace. This was also supported by Nordlof et al. (2017) who argued that if employees communicate well with the management there is high chance of reducing accidents and deaths at the workplace. Poor communication in the Organization tends to stimulate the occurrences of accidents and deaths at workplaces. This becomes more serious in dangerous working environments like mining sites where communication is important but limited due to the nature of the activities. Many deaths seem to occur due to poor and lack of fast communication from one point to another. The employee communication is vital in assuring health and safety at the workplace and it provides an alert to the risks (Oakman & Bartram, 2017).

The significance of safety training and employee communication towards enhancing safety and protecting them from work related disasters has been advocated by Keffane (2014). Safety training is a key factor in maintaining and changing workers' attitudes toward safety. Communicating with employees has been providing instructions about hazard recognition and control measures, i e, learning safe work practices, protective equipment, and acquiring knowledge of emergency procedures and preventive actions in order to maintain safety at the workplace (Yorio & Wachter, 2014).

Despite the study whose findings revealed that ST programmes and EC both significantly influence the implementation of OSS and PHC programmes at the workplace, the effect of EC in relation to the implementation of occupational health and safety has a great impact than the impact from the ST in the organization. This indicates that an organization which ignores communication is likely to be more affected by work-related accidents and deaths. Oakman and Bartram (2017) support the findings by arguing that employees depend on communication to get feedback about safety issues in the organization.

The ERG theory by Alderfer (1969) and contingency theory of leadership by Fred Fiedler (1958) have contributed to this study through filling the knowledge gap. The ERG theory explained the

need for managers to ensure safety to all employees in the organization, because safety is a basic requirement to all employees in the organization, regardless the social and economic status of an individual. The contingency theory linked with this study by explaining that leadership is about peoples' involvement. The theory encourages the employee involvement in realizing the organization's efficiency. According to Peretomode (2012), leadership is about getting and imparting new ideas and guiding a group or an individual in the organization. Therefore, safety training is among the aspects that should be enhanced in the organization because it provides new ideas on how to maintain health and safety at the workplace.

Furthermore, this theory also emphasizes on influencing people in the organization. The management should concentrate on employee communication which is recommended as part of factors that influence employees in the organization, especially in performing the duties. On the one hand, the theory contributed to the mediating effect whereby the findings further revealed that perceived compliance cost partially mediated the effect of ST programmes on the implementation of OSS and PHC at the workplace. On the other hand, perceived compliance cost fully mediated the influence of EC on the implementation of OSS and PHC at the workplace. However, this study revealed that the perceived compliance cost has a high contribution to the implementation of health and safety in the small scale mining through provision of safety training and enhancing effective employee communication on health and safety matters in the organization (Nordlof et al., 2017). Lack of funds hinders the implementation of OHS in the organization due to the fact that managers weigh the cost of compliance of OHS before implementing the programmes.

The clear implementation of occupational health and safety at the workplace requires the presence of protection equipment like protective gloves, machines, safety belts and oxygen tube especially in mining sites. All this needs financial investment. It is true that to maintain health and safety at the workplace involves money. Probably financial constraints of the firms limit effective involvement of employees to the organization's strategic issues which involve money. The requirements of health and safety need money in purchasing protective gear, machines and provision of refreshments at workplaces. Management seems to forgo the health issue due to the perceived compliance cost of implementing the health issue in the organization because of cost (Umeokafor et al., 2014). This suggests that employees are working at high risks because of fears to spent money on health and safety issues.

CONCLUSION AND IMPLICATION

The study investigated the management practices on the implementation of health and safety in small scale mining sector. This article concludes that proper implementation of safety training and employee communication programmes positively affect safety through proper implementation of organization safety support and proactive hazard control at workplaces. But, the EC has great influence than ST to the implementation of health and safety at the workplace. However, the negative influence of EI on the implementation of OSS and PHC at the workplace seems to be caused by wrong employee strategy used by the management in the organization to control work related disasters.

Perceived compliance cost partially mediated the effect of the ST programmes on the implementation of OSS and PHC at the workplace. Furthermore, perceived compliance cost fully mediated the effect of EC on the implementation of OSS and PHC at the workplace. This was attributed to the fact that both perceived compliance cost and the EC programme largely influenced the implementation of Occupational Health and Safety in the organization. Proper implementation of occupational health and safety at the workplace depends on the presence of well-prepared safety

training and employee communication programmes being influenced by the compliance cost incurred by the organization. Therefore, the perceived compliance cost led to poor working conditions of employees in small scale mining and increased the risk at work.

RECOMMENDATIONS

The results revealed that safety training programmes and employee communication significantly influenced the proper implementation of health and safety at the workplace. Based on the findings, it is undisputable, if all organizations (private and public) put an emphasis on safety training and employees 'communication in health and safety matters, accidents, injuries and deaths at the workplaces will be reduced at a high rate and productivity will be improved.

Perceived compliance cost was found to mediate the effect of the management practices on the implementation of occupational health and safety. However, with reference to the research model it applied to safety training and employee communication but not in employee involvement. This implies that managers have to take a closer look at the costs involved in training employees and setting better communication networks so that crucial safety information could reach every member of the organization. But, the implication applies differently on the issue of employee involvement, because, costs do not significantly affect the extent of employee involvement in safety matters; e.g. consultations, reading reports, obeying safety procedures, giving suggestions, maintaining safety tools, etc.

Therefore, except for training and communication arrangements, involving employees is not costly and does not require too much budget preparation. Moreover, with a careful watch on the costs involving OHS matters, managers should invest a considerable amount of money to enhance safety training and building an effective communication network to improve the working environment which finally saves the life of employees.

LIMITATION OF THE STUDY

Safety training and employee communication may not have the same influence in all working industries. This study concentrated only on small scale mining firms. Tanzania has various working industries that involve people. This study did not consider the influence of safety training and employee communication on other working industries and these findings are not applicable to all working industries in Tanzania. Data for the study were collected from the small scale mining firms where employees provided information that represented the true picture of management practices on the implementation of occupational health and safety. These employees were highly involved in mining activities, an activity that enhanced their knowledge of mining activities.

AREAS FOR FURTHER STUDIES

Another study may focus on the influence of management practices on occupational health and safety in small scale mining. The study may examine whether the influence of safety training and employee communication differs from other working industries namely processing industries, banking, agriculture, education industries, etc. This may potentially contribute to the existing body of knowledge particularly the contingencies since the perceived compliance cost may not have the same influence of the implementation of occupational health and safety across all working organizations. It is therefore deemed important to conduct similar studies in other working organization so as to validate the findings.

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