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THE INFLUENCE OF EMPLOYEES' COMMUNICATION ON THE PRACTICES OF OCCUPATIONAL HEALTH AND SAFETY IN SMALL SCALE MINING FIRMS IN TANZANIA

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ABSTRACT

Purpose- This article is aimed at analyzing the influence of Employees' Communication (EC) on the practices of occupational health and safety in small scale mining firms.

Methodology- This study applied the explanatory research design whereby information from respondents was collected through quantitative method of the study which provided the statistical generalization of findings (Mashia *et al.*, 2016). This research design was selected because it enables the researcher to have greater control over the accuracy of findings. Data were collected from three regions namely Shinyanga, Arusha and Geita. These regions were selected because they are the dominant regions dealing with mining activities in Tanzania.

Findings- The findings revealed that employees' communication programme has a positive influence on implementation of organization safety support at workplace. Therefore, if the management concentrates on enhancing the employees' communication accidents, injury cases would be controlled. On the other hand, the results revealed that employees' communication has positive influence for the implementation of proactive hazard control at workplace. Yeong and Shah (2016) any organization which values its human resources tends to maintain health and safety by preparing the health and safety proactive hazard control strategies so as to protect employees at workplace.

Conclusion- This article concludes that employees' communication programmes significantly influence the implementation of OSS and PHC at the workplace. Therefore, organizations can realize safety of employees if there are serious strategies on emphasizing the employees' communication at workplaces.

Keywords: Occupational health and safety, management practices, small scale, employees' communication, mining firms
JEL Codes: M31, E21, D11

1. INTRODUCTION

The practices of occupational health and safety (OHS) are obligatory in most countries due to their essential role in promoting safety to all employees (Kessy & Raymond 2021; Yusuf et al., 2012). It helps to minimize the effects of hazards at workplaces and contributes to social, political and economic development (Suparna & Jaiswal, 2021). However, its implementation is still questionable to many working organizations especially in the third world nations because of the insufficient employee communication which results in illness, injuries, accidents and death at the workplace.

ILO (2014) posits that about 6300 employees are losing their lives every day with an estimate of 2.3 million fatalities occurring every year all over the world, following the poor implementation of OHS. It has been argued that organisations that ignore health and safety automatically affect their productivity due to employees' absenteeism, and loss of goodwill from the customers and the whole community in general (Bae, 2021; Katsuro et al., 2010). The mining sector seems to be among the working industries associated with poor OHS due to many cases being reported; such as poor lighting, pitfalls, knocked by machines/tools and insufficient oxygen are evidences that miners are at high risk. For instance, Michelo (2009) states that at least 165 injuries and 20 fatalities were reported at Zambia Copper Mining. Generally, small-scale mining employees are at high risk, especially in developing countries like Tanzania. Matters and deaths reported are probably caused by inadequacy of employee communication which is part of management functions (Mahmudul et al.,2017; Khdair and Wameedh, 2011). Small-scale mining is reported to be among the riskiest occupations in Tanzania. This is due to several limitations including poor employees' communication which causes severe accidents that count for the lives of individuals at the workplace (Abdulla et al., 2009).

Omofowa et al. (2021) 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 proper employees communication and collective obligations to all employers to take appropriate action and feel accountable to their employees (Isa, 2015). For instance, loose rocks that fell and killed a miner in 2006. Pit collapses were blamed in March 2007 for the deaths of three miners in the same neighborhood. At least 65 miners drowned to death at Mererani in 2008 after floodwaters flooded through the mine's tunnels and pits (Maginga et al., 2013).

The literature on OSHA suggests that to protect employees from occupational accidents and create a safety culture, employee communication is important and needs to be emphasized to prevent accidents and injuries in the workplace (Jonathan,2016; Vredenburgh, 2002; Ali et al., 2009). The practice of employees' communication on OHS is contingent on priority since it depends on the managerial commitment to the matter. However, safety is significant to all human beings. Laursen and Foss (2013); Tan &Nasurdin(2011);Khdair and Wameedh(2013)and Demo et al. (2012) conducted studies on OHS and identified an appropriate leadership style that considers employees' attitudes and hiring practices as important elements of management practices for the safety culture. Other researchers like Desa, Habidin, Hibadullah, Fuzi, and Zamri (2013) listed rewards employees' involvement, employees' communication and management commitment as important elements towards improving working conditions of employees.

Based on the findings of various studies on OHS, there are different views among researchers on the factors influencing health and safety in the organization. Therefore, this article used employees' communication as an important factor that influences OHS to an organisation, an argument which has been supported by (Vecchio, 2007; and Keffane, 2014; and Keffane and Delhomme 2013).

The Tanzania government has made some efforts given this shortcoming as measures to protect its employees. The establishment of the Occupational Safety and Health Authority (OSHA) in 1997, the endorsement of Occupational Health and Safety (OHS) Act No. 5 of 2003, the establishment of the Occupation Health and Safety Policy of 2009, the 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; aimed to enhance the best practices of health and safety at the workplace.

Despite those measures, the mining industry in Tanzania is still hampered by injuries, accidents and deaths in mining workplaces. The literature shows that most of those accidents are associated with rock fall, fire explosions, and automobile equipment accidents, falls from higher heights, entrapment, flooding of underground workings and suffocation (Museru and Munthali, 2013). For instance, 14 miners were stranded for four days in 2017 (URT, 2017). Additionally, at Bulyanhulu Gold mines in 2015, six workers were stranded underground for 41 days until they were rescued, and at least 20 miners perished (URT, 2017; Reuters, 2015). However, the managers in charge of health and safety activities seem to be not able to control and reduce occurrences of death and accidents especially in small-scale mining firms (Schulte, Cunningham, Guerin,Hennigan, and Jacklitsch, 2019 & Surienty, 2012).

This was due to the persistence of occupational injuries, death, illness and accidents (Samage, 2014). The seriousness of enforcing employee communication among the managers responsible for employees' safety issues is still questionable. There is a lack of understanding of the role of employees' communication as one of the internal factors for effective OHS in Tanzania. Therefore, there is a need to consider the influence of employees' communication on the implementation of OHS in small-scale mining firms. Based on the aforementioned issues the literature did not consider the relationship between employees' communication and the implementation of Occupational Health and Safety in small scale mining firms. In response to that, this article analyzes the influence of employees' communication on the practices of OHS in Tanzania's small-scale mining firms.

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2. LITERATURE REVIEW

This article used the ERG theory proposed by Alderfer (1969) who expanded Maslow's basic needs by refining five stages into three. These stages are existence needs, relatedness needs and growth needs. The theory is popular and predominantly clarifies different ideas on organisational management with new methods of considering human behaviour and attitude (Yang and Chen, 2011). It describes the significance of safety to the employees at workplaces. Thus, it tells more about maintaining safety for all employees in an organisation. This theory has been used to explain and contribute to human behaviour which directly connects to health and safety in the workplace. Therefore, this theory is significant and relevant to this article s ince it explains safety issues in the organisation.

The theory insists on safety for all employees regardless of their status (Caulton, 2012). The existence needs in an ERG regard prevent fear, anxiety, threat, danger, and tension in the workplace as one of the basic needs of humans. In other words, a company's employees should have a safe and secure place to work in (Omofowa et al., 2021). Given all of these data, ERG can theoretically contribute significantly to the explanation of how employee communication affects the execution of workplace occupational health and safety. As a result,this notion is pertinent to this article since it clarifies workplace safety to workers.

Thefore, this theory is relevant in thus article because it explains the security behavior of employees in an organization. Employees' communication influences the implementation of Occupational Health and Safety at the Workplace, the reviewed literature by Sembe & Ayuo (2017) maintains 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 employees' communication, especially open communication on safety performance tends to stimulate the organisation's performance. Yorio &Wachter (2014) suggest that organizations might use print media (e.g., posters, journals and newspapers) to increase cognitive awareness of safe work and emphasize its importance or facilitate holding formal meetings designed to verbally convey information and exchange ideas with the workforce. According to Mashia et al. (2016) 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. Therefore,the following hypotheses were developed:

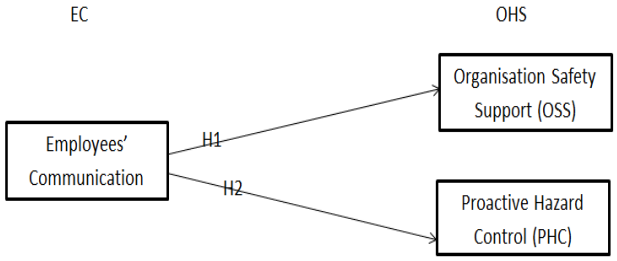
H1: There is a positive relationship between employees' communication and implementation of organisational safety support at the workplace.

H2: There is a positive relationship between employees' communication and implementation of proactive hazard control at the workplace.

2.1. Conceptual Framework

The link between independent and dependent variables is depicted in the conceptual framework below. Employees' Communication (EC) has highlighted the independent variables, whilst Organisation Safety Support (OSS)and Proactive Hazard Control (PHC) have highlighted the dependent variables, respectively.

Figure 1: Conceptual Framework



Source: Field Data (2023)

3. RESEARCH METHODOLOGY

The quantitative approach of the study, which allowed for the statistical generalization of findings, was used in this study's use of the explanatory research design to gather information from respondents (Mashia et al.,2016). This research design was chosen because it gives the researcher more control over how accurate the results are. Data were gathered from Shinyanga,Arusha and Geita regions in Tanzania. These areas were chosen because they are those in which mining operations predominate in Tanzania. Additionally, it has been noted time and time again that these areas ha ve high incidence of mining-related accidents (Samage, 2014). Micah, and Ajay (2014) the quantitative data, approximately 297 questionnaires were employed, along with percentage and the structural equation model (SEM).

3.1. Measurement of Implementation of Occupational Health and Safety

The tools established to measure occupational health and safety (OHS) performance in this article are Organizational Safety Supprt (OSS) and Proactive Hazard Control (PHC). Safety rules, principles and procedures as well as the use of first aid are used to measure OSS and SSP in the workplace (Kaynak et al. (2016). Various publications have used the measure similar to measuring the accuracy of health and safety applications in the workplace because the provision of OSS and PHC is an indicator of heath and safety implermentattion in the organisation (Villanuera and Nunez, 2010). Communication between employees must facilitate the management of health and safety at the workplace. Ensuring safe practices in the workplace

should aim at controlling all work-related injuries, the availability of warning signs of danger and providing information to employees about safe practices (Khdair&Subramaniam,2011).

4. FINDINGS AND DISCUSSIONS

4.1. Organization Characteristics

The study was conducted among small-scale mining companies operating in the Geita, Shinyanga and Arusha areas; approximately 297 (94%) companies participated in this study. The main mining activities involve the extraction and sale of minerals. However, artisanal miners receive neither training nor benefits from these activities. The operations of these companies take place in a risky environment. Such activities appear to be motivated by poverty and other social problems in the community.

4.2. Employees' Communication on Occupational Health and Safety in Small Scale Mining Firms

Hypotheses were tested to justify the use of SEM in this article. These assumptions are normal data distribution, uniformity, and edge identification. Using the P-P regression plot, the standardized residuals in all study variables have a normal distribution. Furthermore, no multicollinearity problem is observed because the tolerance value (TV), inflated value factor (VIF), and all variables used in this article are respectively greater than 0.1 for TV and less than 10 for VIF,as recommended by William (2015), the data selection process also showed no heteroscedasticity problem because the scatter plot shows that the residuals are uniformly distributed around the axis. Outlier labeling methods were used, removing three outliers.

4.3. Direct Relationship between Employees' Communication on the Implementation of Occupational Health and Safety in Small Scale Mining Firms

In this part, two hypotheses are posed: H1 and H2. H1 indicates that EC has a positive influence on the implementattion of OSS programs in the workplace, and H2 indicates that EC has a positive influence on the implementation of OSS programs in the workplace. Path analysis results show that there is a significant relationship between EC programs and OSS implementation in the workplace (β =0.653, significant at the 0.001 level).

Furthermore, path analysis revealed a significant relationship between CE and SSP implementation in the workplace (β=0.700, significant at the 0. 001 level). Therefore, hypotheses H1 and H2 are each supported.

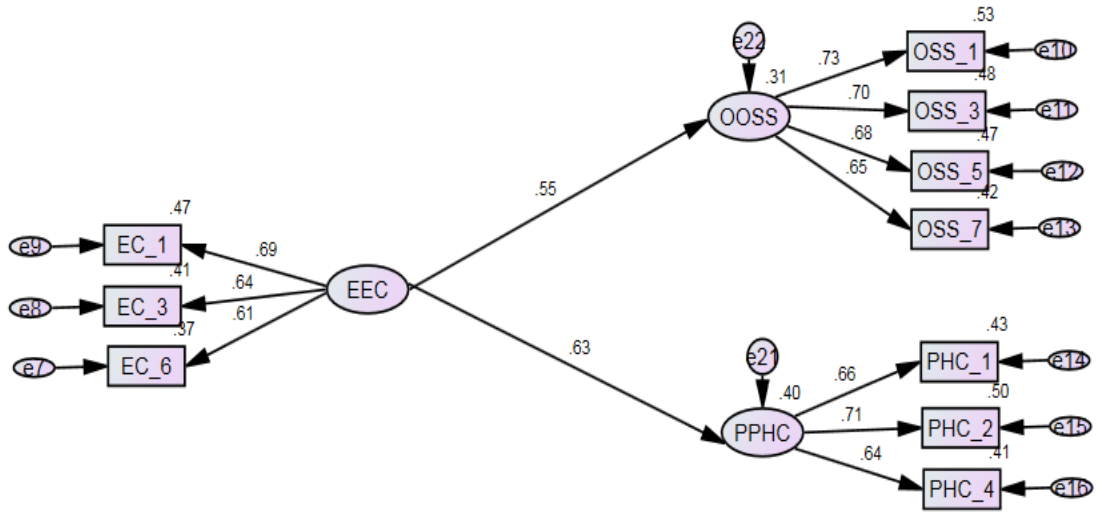
Table 1: The Regression Weights for the Direct Relationship

Path			Estimate	S.E.	C.R.	P	Label
OOSS	<---	EEC	.653	.109	6.015	***	
PPHC	<---	EEC	.700	.115	6.066	***	

Source: Field Data (2023), *** Means, it is significant at 0.001

The developed model shows the direct relationship between employees' communication and the implementation of occupational health and safety at the workplace. In this analysis, the model demonstrates influence of EC in identifying safety issues on the implementation of OSS and PHC at workplace. Also, the model shows the relationship between EC programmes on OSS and PHC. Figure 2 presents the model on the direct relationship between employees' communication and the implementation of occupational health and safety at the workplace.

Figure 3: The Developed Structural Equation Model for the Relationship



Source: Field Data (2023)

The model shows that the additional unit of the standard deviation of EC programmes led to the 0.653 significant increases in standard deviation of the implementation of OSS at workplace. Again, it shows that the additional unit in standard deviation of EC programmes led to the 0.700 significant decreases in PHC at workplace. This means that, the management practices namely EC implementation at workplace had different contribution on OSS and PHC at 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 fits the data well because they were all within the recommended values. The Chi-Square value was 139.454, P-value of 000 while the degree of freedom was 33. The Chi-Square value was insignificant which indicated that there was no statistically significant difference between the default model and saturated model. Table 2 below presents the model fit indices with the recommended value.

Table 2: Goodness of Fit Indices for the Direct Model

Goodness of Fit Measure	Calculated Index *	Recommended value	Author
CMIN/df	4.226	<5	Bollen (1989); Ullman (1996
GFI	0.917	≥ 0.90	Byrne (2010)
AGFI	0.862	≥ 0.80	Chau and Hu (2001
CFI	0.902	≥ 0.90	Hair et al. (2010)
RMSEA	0.004	< 0.08	Hoe (2008); Steiger (2007) cited by Hooper, Coughlan & Mullen (2008)

Source: Field Data (2023)

4.4. Discussion of Findings

Tthe results show that employee communication programs have a positive influence on the implementation of organizational support for workplace safety. Therefore, if management focuses on improving employee communication accidents, injury cases will be controlled. Asghar and Saeed (2012) support the finding that communication with employees helps a lot in reducing and controlling workplace accidents because when employees are informed, they will have knowledge and be aware of how to avoid accidents and unnecessary risks in the workplace. On the other hand,the results show that employees' communication has a positive influence on the implementation of proactive risk control in the workplace. Yeong and Shah (2016) any organization that values its human resources tends to maintaiin health and safety by preparing proactive health and safety risk control strategies to ensure employees are protected in the workplace. This is also supported by Mashia et al.(2016) argue that employee communication is an important risk peviosn control strategy to ensure workplace safety. Keffane (2014) emphasizes that communication between employees is a key factor in maintaing and changing workers' attitudes towards safety measures.Yorio and Wachter (2014) support the findings of providing guidance through communication with employees on hazard recognition and control measures as well as learning safety measures such as protective equipment to identify hazards and gain knowledge of emergency proceduresand preventative actions that will

maintaion health and safety at workplace. Sembe and Ayuo (2017) and Oakman and Bartram (2017) support these findings by asserting that employees rely on communication to receive feedback on security issues within the organization.

5. CONCLUSION AND IMPLICATIONS

5.1 CONCLUSION

The article investigated the influence of employees' communication on the implementation of health and safety in small scale mining. The literature informed that employees' communication has contribution to the process of minimizing accidents at workplace (Mashia et al., 2016). This argument is supported by Keffane, 2014; Irawanto, 2015; Kaynak and Toklu, (2016) states that employees' communication has an impact towards maintaining safety of employees at the workplace (Asumeng et.ai.,2015). Therefore, this article concludes that employees' communication programmes significantly influence the implementation of OSS and PHC at the workplace. Therefore, organizations can realize safety of employees if there are serious strategies on emphasizing the employees' communication at workplaces.

5.2. IMPLICATIONS

The results revealed that employees' communication programmes significantly influence the proper implementation of health and safety at the workplace. Thus, if all organizations (private and public) emphasize on the employees' communication in health and safety matters, accidents, risks injuries and deaths at workplaces will be reduced in high rates and production will be improved. Therefore, managers should put emphases on health and safety issues in their organizations, if really they want to improve their efficiency. Also government officials should make sure that all organisations prepare and design strategies for improving employees' communication so as to enhance provision of health and safety compliance. If employees' communication is provided it maintains the organisational health and safety culture to the management and employees at large. Ultimately, it minimizes risks at the workplace.

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