

### ASSESSING THE EFFECTS OF CAREER DEVELOPMENT AND PERCEIVED ORGANIZATIONAL SUPPORT ON SAFETY PERFORMANCE AMONG TRUCK OPERATORS IN THE GHANAIAN MINING INDUSTRY

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#### ABSTRACT

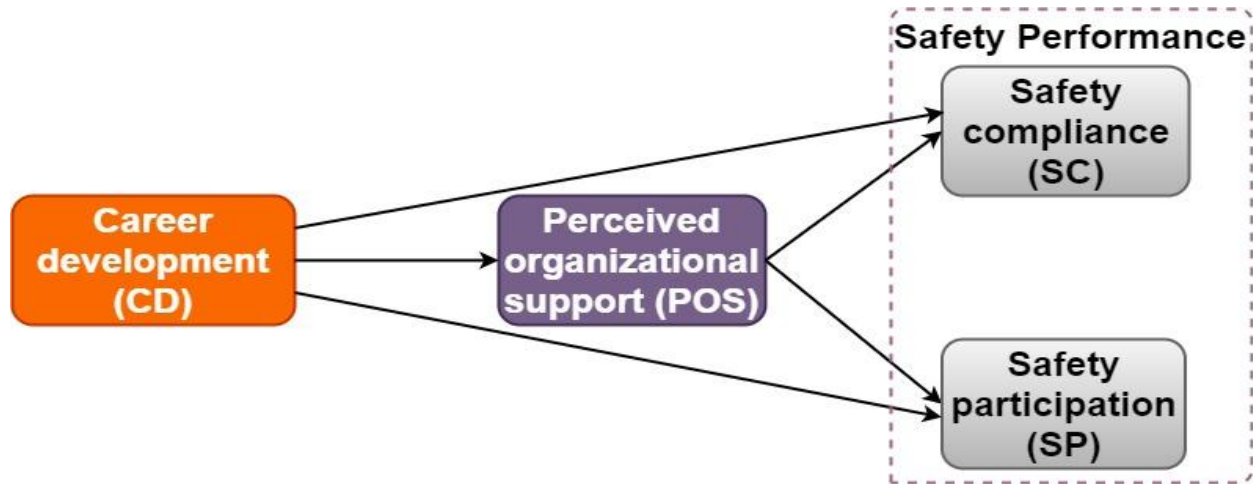
We examined the effects of career development and perceived organizational support on the two dimensions of safety performance (safety compliance and safety participation) of 208 truck operators in the Ghanaian mining industry using correlation analysis and hierarchical regression analysis. The results revealed that career development has a significant positive influence on perceived organizational support and both safety compliance and safety participation. Also, perceived organizational support had a significant positive influence on safety compliance and safety participation. Furthermore, testing perceived organizational support as a mediator between career development and the two dimensions of safety performance demonstrated that perceived organizational support partially mediates the relationships between career development and both dimensions of safety performance.

#### KEYWORDS:

career development, perceived organizational support, safety compliance, safety participation

#### INTRODUCTION

Generally, every organization wishes to enjoy a safe and incidence free working environment, and the mining industry is not an exception. According to the International Labour Organization, mining companies and their activities have accounted for more than 8% of all global workplace accidents though it employs just 1% of the global workforce (Duke, 2017; Stemn, 2018). In the view of the International Labour Organization (ILO), these rampant workplace accidents, especially in the mining industry, needs urgent attention to bring to bear other possible factors that may be accounting for such a menace apart from the already known factors (e.g. unsafe acts and unsafe conditions) captured in their records. Leung, Liang, and Olomolaiye (2016) believe that safety behaviour is the most critical determinant of incidents at the workplace. As safety behaviour improves, so will incidents at the workplace reduce, hence the strength of researchers should be focused on antecedents of safety performance (Leung et al., 2016). This current study, therefore, proposes career development and perceived organizational support as antecedents of safety performance. This study will further seek to investigate the effect of career development on the safety performance of truck operators in the Ghanaian mining industry through the mediating role of perceived organizational support (POS) (see Figure 1).

**Figure 1**

“Safety performance is referred to as safety behaviour” (Zhu, Quansah, Obeng, & Cobbinah, 2020) and it includes behaviours such as safety compliance and safety participation (Neal & Griffin, 2006; Sampson, DeArmond, & Chen, 2014; Zhu et al., 2020). Safety compliance describes behaviours that are core to the safety activities required to be performed by an employee to ensure a safe workplace (Griffin, Neal, & Neale, 2000). Such behaviours include reducing risk and ensuring the use of personal protective equipment (PPEs). Safety participation describes behaviours that are voluntarily in the pursuance of safety activities (Griffin et al., 2000). Examples of such behaviours include attending safety meetings and engaging in whistleblowing.

Safety performance is also a form of employee performance (Sampson et al., 2014; Vinodkumar & Bhasi, 2010). And previous studies have established a link between employee performance and career development (Hameed & Waheed, 2011; McCarthy & Garavan, 2001; Napitupulu, Haryono, Laksmi, Sawitri, & Harsono, 2017; Salthouse & Maurer, 1996). Career development describes an organized, formalized, planned attempt to attain a balance in employee’s career needs and the firm’s workforce requirement (Adekola, 2011; Leibowitz, Farren, & Kaye, 1986). Career development presents employees the experience to learn and grow within their career. The experiences include functions such as on the job exercises (e.g. being offered challenging task), involvement in training and retraining activities, continuing education seminars or workshops, college correspondence programmes as well as self-learning (Salthouse & Maurer, 1996). Career development is also a part of human resource management practices and how it is implemented in organizations that determine its success story on employee performance. When career development is perceived as fair, it becomes a useful commodity because employees performance improves (C. L. Cooper & Marshall, 1978; Finney, Stergiopoulos, Hensel, Bonato, & Dewa, 2013). In a study conducted by Hameed and Waheed (2011), it was concluded that organizations that offered employees opportunities to develop themselves recorded tremendous improvement in performance. The improved performance occurred because when individuals are developed, their knowledge, skills and abilities to perform their tasks in several unique ways improve. They can work effectively and achieve higher efficiency. In another circus of performance, they can understand the essence of ensuring safety compliance and safety participation (Vinodkumar & Bhasi, 2010).

However, in the event of wrongful implementation of career development may harm employee performance, including safety performance. Wu et al. (2018) in their quest to develop a job stress scale for construction workers found enough evidence to support a negative significant relationship between career development and both safety compliance and safety participation. They concluded that as career development practices in organization are found to overpromote or underpromote individuals, there could an imbalance between one’s ability and performance. Individuals who get overpromoted could be lacking the requisite knowledge, skills and ability (KSA) to perform and this may not augur for the growth of the organization. In the same sense, individuals who are underpromoted could be dissatisfied with their jobs because of underutilization of their KSA. A dissatisfied employee will display poor performance regarding safety compliance and safety participation (Siu, Phillips, & Leung, 2004). In this case, we formulate the hypothesis that:

***H1: Career development will be positively related to safety performance***

Most studies have found a significant direct relationship to exist between career development and safety performance. Yet it does not override other existing evidence (e.g. Napitupulu et al. (2017), T Lew (2009), Foong-ming (2008)) suggesting that career development could not possibly have a significant influence on performance without some intervening variables. One possible variable that has received a lot of attention to explain the indirect influence of career development on employee performance is perceived organizational support (POS). Organizational support refers to the perceptions employees have concerning the commitment level of their organization such as awards and attention their organizations give to them (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Employees will view organizational support based on the organization's management actions and policies. Thus, an organization that can provide employees with opportunities to contribute to decision-making, share information, involve employees in goal-setting will be potent to make employees committed to their companies (Hemdi, 2009; Shim, Kwon, Park, & Hwang, 2011). For this reason, we hypothesize that:

**H2: Career development will be positively significantly related to POS.**

According to Mearns and Reader (2008), organizations that care and show concern for their employees will experience an unexpected benefit in terms of improved safety compliance and safety participation. Employees will return any kind gesture their organizations show them in fulfilment of the organizational support theory and social exchange theory (Chinomona & Mofokeng, 2016; Hofmann & Morgeson, 1999). Gyekye and Salminen (2007) also demonstrated in their research that employees are rational beings who feel when their organization is useful to them. They reciprocate this goodness in the form of complying to safety standards and engaging other safety activities to help improve the safety management system in place. Based on the norm of reciprocity and social exchange theory, we formulate the hypothesis that:

**H3: POS will have a significant positive influence on safety performance (safety compliance and safety participation).**

From empirical evidence, career development has a significant influence on POS (Foong-ming, 2008; Tek Lew, 2009), and in turn, POS has a significant influence on safety performance (Mearns & Reader, 2008; Tucker, Chmiel, Turner, Herscovis, & Stride, 2008). Although career development is ultimately a product of management strategies, this advantage is just an organizational incentive that more successful workers, compared to their peers, have personally attained. Therefore, a company needs to enhance its organizational support to maximize the effect of career development initiatives on all employees of the organization in a holistic way. An intensive literature review suggests that companies can engage their staff in activities such as decision making and target setting, and this will promote employees' affection for their companies. This kind of engagement increases employees' commitment to the organization and result in improved performance (Hemdi, 2009).

Furthermore, as employees dedicate themselves to their firms, they act in conformance to the norms of reciprocity as well as POS (Eisenberger et al., 1986; Hofmann & Morgeson, 1999; Huang et al., 2016). Eventually, this affects their perception of how their organization values their safety and wellbeing and then helps promote better safety performance (Huang et al., 2016). According to a study conducted by Napitupulu et al. (2017), it was concluded that career development through POS affected employee performance. This current study focuses on a more aspect of performance, namely safety performance. Understanding how specific performance is affected will help organizations develop a more robust strategy that is problem-focused driven than a general strategy that is difficult to target the actual problem. Falling on the norm of reciprocity and social exchange theory, we formulate the hypothesis that:

**H4: POS will mediate the relationship between career development and safety performance (safety compliance and safety participation).**

## 2. Methods

### 2.1. Population and Sample

In gathering data to analyze the hypothesized relationships, the researchers distributed 355 questionnaires to truck operators working in the Ghanaian mining companies located in Tarkwa-Nsuaem Municipality and Prestea-Huni Valley District after permission had been sought from the employees and their superiors. We ensured that ethical considerations regarding academic research were followed. Respondents were educated on

their right to discontinue participating in the survey at any time they so desired. We assured the respondents of their total anonymity and confidentiality of their response. These were done to ensure maximum participation. A total of 314 questionnaires were collected from the respondents by the researchers. Out of the 314 questionnaires, 208 questionnaires were filled without errors and were valid. A total of 106 questionnaires contained more than 5% incomplete responses, hence were dropped from the final analysis.

Out of the 208 valid responses, 157 (75.5%) respondents were men, and 51 (24.5%) were females showing a high number of men working as truck operators in the mines. The ages of the respondents from 20 – 29 were 99 (47.6%), and 30 – 39 were 109 (52.4%) showing that truck operators may be relatively young in the mines. For the educational level of the respondents, only 9 (4.3%) had a tertiary qualification (degree / higher national diploma), 69 (33.2%) had senior high school certificate and 130 (62.5%) had a junior high school certificate. This educational distribution shows that at least all the respondents had obtained formal education in one way or the other. Also, 23 respondents had worked 1 – 5 years, 150 had worked 6 – 10 years, and 35 had worked for 11 years and more.

## **2.2. Survey Instruments**

All the variables in the study were measured using already existing scales from prominent authorities. All items were measured on a 5-point (1 – 5) Likert scale (1 = strongly disagree; 2 = agree; 3 = not sure; 4 = agree; and 5 = strongly agree).

To measure career development, we adopted three items from the Occupational Stress Indicator developed by C. L. Cooper, Sloan, and Williams (1988) and has been used by Siu and Cooper (1998) and Wu et al. (2018). Sample item includes “I am worried about my future career development”. The safety performance scale by DeArmond, Smith, Wilson, Chen, and Cigularov (2011) and has been used by Sampson et al. (2014), and Zhu et al. (2020) were adopted for this study. The scale contains four items measuring safety compliance and six items measuring participation. A sample item for the safety compliance scale includes “I often use the appropriate personal protective equipment as indicated by the site health and safety plan. Also, a sample item for the safety participation scale is “I assist others to make sure they do their work safely. The organizational support variable was measured with eight items adopted from the 8-item Survey of Perceived Organizational Support (SPOS) (Eisenberger et al., 1986). Sample item includes “The organization values my contribution to its well-being”

## **2.3. Data Analysis**

To analyze the data collected from our participants, we coded, keyed in and corrected any errors using SPSS version 21 software. Also, we employed both descriptive and inferential statistics during the data analysis. The main procedure for analyzing the hypothesized relationships was path analysis. Path analysis provides a more suitable approach to test theories of causal relationships, including career development, organizational support and safety performance (Klem, 1995). For the analysis, the independent variable is career development, the mediating variable is perceived organizational support, and the response variables are safety compliance and safety participation.

## **3. Results**

### **3.1 Reliability, validity and inter-factor correlation analysis**

In assessing the extent to which the instruments describe the contents of the variables for this study, experts in the field of human resource management and organizational behaviour were consulted to evaluate the content validities of the scales (Ary, Jacobs, & Razavieh, 1985). The experts reviewed the item collection and certified the explanations of the career development, organizational support, safety compliance and safety participation. Also, the significance, clarity and how concise the items are were examined by the reviewers. With the help of SPSS, the study performed exploratory factor analysis (EFA) to check the appropriateness of the factor loadings and the validity to establish the internal consistencies of the scales were also performed in this study.

The results from the EFA showed that two items belonging to organizational support scale and one item belonging to the safety participation scale recorded factor loadings that were less than the 0.5 thresholds suggested in previous studies (Pallant, 2013). The Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy

was 0.879 and significant at 0.001. The four variables accounted for a total variance of 76.319% and a total Eigenvalue of 13.741 (see Table 1).

The coefficients of the inter-factor correlation matrix are also below 0.70, indicating that the data does not suffer from multicollinearity (see Table 2). From Table 2, it is evident that career development had significantly correlated with POS, safety compliance and safety participation which suggest some substantial support for Hypotheses 1, and 3. POS also correlated with both safety compliance and safety participation, thereby offering some initial support for Hypothesis 2. Safety compliance and safety participation also correlated positively ( $r = 0.412$ ,  $p < 0.01$ ), which shows that the two dimensions of safety performance, although they are related but distinct from each.

**Table 1**  
**Validity and reliability of the scales**

Variable	EFA Factors Loadings		Eigenvalues	Accumulative Explained Variance (%)	Cronbach Alpha ( $\alpha$ )
Perceived Organizational Support	POS1	.905	7.866	25.652	0.939
	POS3	.841			
	POS4	.839			
	POS6	.838			
	POS2	.828			
	POS8	.798			
Safety Participation	SP1	.879	2.510	19.903	0.902
	SP3	.862			
	SP2	.773			
	SP5	.765			
	SP4	.715			
Safety Compliance	SC3	.882	2.018	18.149	0.916
	SC2	.854			
	SC1	.848			
	SC4	.796			
Career Development	CD1	.879	1.344	12.615	0.814
	CD3	.834			
	CD2	.685			

**Note:** Exclusive of POS5, POS7 and SP6 items for lower factor loadings

**Table 2**  
**Inter-factor correlation matrix**

	Mean	SD	age	education	years	CD	POS	SC	SP
Gender	1.25	0.431	—						
age	1.48	0.501	1						
education	2.58	0.576	-0.077	1					
years	1.39	0.679	.362**	-.187**	1				
CD	3.2596	0.94333	-.167*	0.067	-0.058	1			
POS	3.3782	0.9204	0.008	0.002	0.036	.331**	1		
SC	3.3462	0.91572	-0.011	-0.068	0.033	.456**	.402**	1	
SP	3.4481	0.90345	-0.002	0.007	0.075	.441**	.447**	.412**	1

**Note:** \*  $p < 0.05$ , \*\*  $p < 0.01$

**Abbreviation:** CD = Career development; POS = Perceived organizational support; SC = Safety compliance; SP = Safety participation

### 3.2 Hypotheses testing

In testing the hypotheses, hierarchical regression analysis was employed with the help of SPSS version 21 software. The study also followed the steps recommended by Cohen and Conhen (1983) and Baron and Kenny



(1986) for mediation analysis to demonstrate the statistical significance and nature of the main effect as well as the mediating effect. From Tables 3 and 4, based on the estimated models 1 and 2, it is evident that career development has a significant positive influence on safety compliance and safety participation which support Hypotheses 1 and 2. Moreover, from the estimated models 3 in Tables 3 and 4, POS has a significant positive influence on safety compliance and safety participation, thereby supporting hypothesis 3. In estimating the mediating effect of POS in Tables 3 and 4, we regressed the dependent variables on career development and POS in the last models. The model demonstrated the predictive capacity of both career development and POS on both safety compliance and safety participation in their respective models. The results showed that the relationship between career development and both dimensions of safety performance (safety compliance and safety participation) is mediated partially by POS, thereby supporting Hypothesis 4 of the theoretical framework.

**Table3**

**Hierarchical regression analysis with POS as a mediator between career development and safety compliance**

Variables	SC	POS	SC	SC
	Model1	Model 2	Model 3	Model 4
Constant	1.904***	2.325***	1.995***	1.252***
Career development (CD)	.442***	.323***		.352***
Perceived Organizational Support (POS)			.400***	.281***
R <sup>2</sup>	.208	.110	.162	.278
ΔR <sup>2</sup>	.208	.110	.162	.071
F	53.974***	25.377***	39.719***	39.557***

Note: \*  $p < 0.05$ , \*\*\*  $p < 0.001$ ; Also, our proposed control variables such as gender, age, educational level and years of service were statistically unrelated to the dependent variables in the correlation matrix, hence, were dropped from the hierarchical regression analysis

**Table 4**

**Hierarchical regression analysis with POS as a mediator between career development and safety participation**

Variables	SP	POS	SP	SP
	Model1	Model 2	Model 3	Model 4
Constant	2.070***	2.325***	1.966***	1.299***
Career development (CD)	.423***	.323***		.316***
Perceived Organizational Support (POS)			.439***	.331***
R <sup>2</sup>	.195	.110	.200	.296
ΔR <sup>2</sup>	.195	.110	.200	.102
F	49.848***	25.377***	51.399***	43.175***

Note: \*  $p < 0.05$ , \*\*\*  $p < 0.001$ ; Also, our proposed control variables such as gender, age, educational level and years of service were statistically unrelated to the dependent variables in the correlation matrix, hence, were dropped from the hierarchical regression analysis

#### 4. Discussions

This study aimed to demonstrate that career development and POS are essential antecedents of safety performance, and this has been established. The study also aimed to test POS as a mediator in the relationship between career development and the two dimensions of safety performance. Interestingly, the results revealed a partial mediation for such an objective.

Career development recorded a significant positive influence on both safety compliance and safety participation. These results contradict the findings of Wu et al. (2018). Wu et al. (2018) reported a significant negative relationship between career development and safety compliance and safety participation, although their study was among construction workers in Beijing. It also contradicts the findings of Napitupulu et al. (2017). They found no significant relationship to exist between career development and employee performance.

However, our study considered a more specific form of performance called the safety performance of truck operators in the Ghanaian mining industry. The positive relationship between career development and safety performance does not only contradict some previous studies but also supports studies such as Nasution, Mariatin, and Zahreni (2018), Manggis, Yuesti, and Sapta (2018) and Sofyan, Rahman, Bima, and Nujum (2016). Employees who benefit from acceptable career development practices feel inspired to increase their performance due to improvement in knowledge, skills and abilities (Hammer, 2000).

Additionally, career development had a significant positive impact on perceived organizational support, and perceived organizational support had a significant positive influence on safety compliance and safety participation, which follows findings contained in some other studies. For instance, career development demonstrated its positive predictive capacity on perceived organizational support and hence suggested support for findings in the work of Napitupulu et al. (2017) and Foong-ming (2008), Tek Lew (2009). Moreover, perceived organizational support recorded a significant positive influence on safety performance which provides support for the findings in the works of Gyekye and Salminen (2007) and Mearns and Reader (2008). As employees perceive that their organization cares about their wellbeing, they reciprocate this gesture in the form increased performance of which safety performance is a subset of performance. This observation is line with the theorists of social exchange theory (Blau, 1964; Cropanzano & Mitchell, 2005; Hofmann & Morgeson, 1999) and organizational support theory (M. D. Cooper, 2006; Eisenberger et al., 1986; Erdogan & Enders, 2007) who believe that one good turn deserves the other. By the findings of our study, perceived organizational support partially mediated the relationship between career development and both dimensions of safety performance. A career development that assures employees of job certainty and cares for wellbeing of employees will make employees have positive thought about the support they receive from their organization, and this can translate in employees adhering to safety compliance and engaging in extra organizational activities such as safety participation.

### **5. Implications of the study**

The current findings in this study are essential because they reveal the predictive capacity and the process by which career development affects safety performance among truck operators through POS in the Ghanaian mining industry. Organizations operating in the mining industry should have a career development framework. This career development framework will facilitate the specification of the needed competencies and requirement a truck operator or an employee may need to achieve such competencies. Having a career development framework existing in an environment that fails to show care and concern for employee wellbeing may not yield the best results (Ellis & Dehn, 2005). To ensure that career development affects truck operators' safety performance positively, mining companies must support their operators or employees in the best possible means they can. Employees' competencies should be recognized and appreciated by the organization accordingly. Employees who acquire new knowledge, skills and abilities should be placed at the appropriate rank in the organization with the right wages and salaries attached to it. Also, mining companies can offer support by going the contractual agreement to provide free medical care and educational facilities for employees' immediate family (e.g. wife and children). Again, mining companies should listen to employees' complaints regarding the safety of their work and provide immediate solutions. Management can offer a solution by presenting employees with (1) the requisite PPEs; (2) job enrichment programmes; (3) skill-training opportunities; (4) visiting workplaces to alert workers of dangerous work practices; and (5) explicitly expressing concern for their safety (Gyekye & Salminen, 2007), and scheduling shift time that enables employees with enough rest (Eiter, Steiner, & Kelhart, 2014; Zhang, 2014).

### **6. Limitations and suggestions for future studies**

Among the limitations of this current study was the use of self-reported instruments. Respondents could be scared of participating in the study, and if they did participate, their response could even be distorted deliberately. To address this problem, we assured the respondents of absolute anonymity and full confidentiality of their responses. In studies such as antecedents of performance and accident investigations, self-reported instruments are regarded the most suitable (Gyekye & Salminen, 2007; Neal & Griffin, 2006; Parker, Carl, French, & Martin, 1994). Also, this study considered only two antecedents of safety performance. Several other antecedents such as factors intrinsic to the job itself, organizational culture and climate, employee's role in the organization, interpersonal relationships and family-work conflicts may be looked at in our subsequent studies

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particularly in the mining industry. Though only career development and POS were investigated on safety performance, one cannot take away the significant contribution of this study as it extends the literature on normed reciprocity and social exchange theory using career development, POS and safety performance.

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