

The Effect of Work Conditions on Performance of Employees in the Mining Industry in the Limpopo Province

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Abstract: The mining industry has over the years faced continuous challenges in terms of increased demand for productivity, labour unrest, skills shortages, unpleasant working conditions, performance pressures and loss of scarce technical skills. The purpose of this study was to explore the impact of work conditions on work performance of employees in the mining industry. The research article used quantitative methods to achieve its objective. Job content and individual work performance questionnaires were used to collect data from employees in the mining sector. Pearson product-moment correlation coefficients were used to determine the relationship between work conditions and work performance. Regression analysis was used to determine the effect of work condition on performance of employees in the mining industry. The correlation results found that there is statistical and practical significant relationship between work condition and work performance. The regression analysis results found that work condition variables (independent variables), have a statistical significant predictive effect on the work performance (dependent variable). Findings of this paper therefore, scientifically conclude that unpleasant work conditions have a negative consequence on the performance of employees in the mining industry. It is recommended that working conditions of mine workers are improved in order to improve performance and productivity.

Keywords: Counter-Productive behaviour, Decision latitude, Social support, Task performance, Work conditions

1. Introduction

The mining industry has been an important source of employment in South Africa since the early 1900s (Masia & Pienaar, 2011). It faces continuous challenges in terms of increased demand for productivity, labour unrest, skills shortages, and loss of scarce technical skills due to emigration and high turnover rates (Van Schalkwyk, Du Toit, Bothma & Rothmann, 2010). One of the biggest challenges that mining industry came across recently is the Marikana massacre. Approximately 34 mine workers were killed in traumatic and tragic events of labour unrest at Marikana in the Rustenburg Platinum belt on 16 August 2012 (Coleman, 2012). The labour unrests in Marikana were instigated by the role of employers, the mining industry and the massive platinum boom in the Rustenburg area that generated fabulous wealth for companies and executives, but social squalor, tensions, poverty and unsafe working conditions for workers (Coleman, 2012). Moller (2003) states that the mining industry is striving to improve production through accelerated performance. In the process, employees are overlooking safety procedures whilst attempting to reach performance targets (Moller, 2003). Due to

performance pressure and time constraints, it has been reported that many workers engage in unsafe behaviours (Masia & Pienaar, 2011). The abovementioned behaviors include short cuts that compromise safety compliance and can cause accidents (Masia & Pienaar, 2011). It results in unhealthy working conditions which lead to low motivations and decreased performance of employees (Probst & Brubaker, 2001). These behaviours lead to a need for this paper to investigate the impact of work conditions on performance of employees in the mining industry.

Mining is still one of the toughest and most hazardous occupations (Paul & Maiti, 2005). A strong focus on maximum production characterizes the mining industry, with little attention paid to general wellbeing of employees (Masia & Pienaar, 2011). These high performance pressures and time constrains decrease the safety level of operations, employees have strict targets to meet within specified timelines and are encouraged to take shortcuts and jeopardize safety (Masia & Pienaar, 2011). This trend has created problems for many employers in the mining industry, who are legally obliged to create and maintain safe working conditions for all employees (Probst & Brubaker, 2001).

Cartwright and Cooper (2002), as well as Martin (2005), indicated that experiencing high level of work pressure lead to feelings of anger, nervousness, irritability, tension, hypersensitivity to criticism and mental blocks. The above mentioned psychological problems can subsequently lead to lower job performance, inability to concentrate and make decisions, and job dissatisfaction (Cartwright & Cooper, 2002; Martin, 2005). The main criticism in the field of work conditions is based on the primary motive of paper, which is to find ways to maximize productivity through improving employees work conditions and consequently performance. In so doing, the values and personal needs of employees should be taken into account, to avoid the exploitation of employees (Maharaj, 2014). Therefore, current and future researchers are urged to create a balance between the needs and values of employers' and employees' work conditions (Saari & Judge, 2004).

Research regarding work conditions has also pointed out the assumption that work conditions are potential determinant of absenteeism, turnover, in-role employee performance and extra-role behaviours (Oshagbemi, 2003). Most importantly, the topic of work conditions is relevant to the physical and mental well-being of employees. Work is an important aspect of people's lives and most people spend a large part of their time at work; therefore, work conditions shows significant associations with several work related variables (Yousef, 2000). The main problem that created gap for the relevance of this study is the overemphasis of attention on maximization of performance and profits with little or no attention paid to the work conditions and general health of employees.

2. Literature Review

2.1 Work Conditions

The theoretical background of work conditions in this study was based on Robert Karasek (1979) Job Control-Demand model. Job demand-control model identifies three cardinal factors (decision latitude, job demand and social support) as important determinants of job stress, which in turn have significant effects on general health (Theorell & Karasek, 1996). The decision latitude consists of two theoretically distinct sub dimensions called skill discretion and decision authority (Karasek & Theorell, 1990). Skill discretion assesses the level of skill and creativity required on the job and the flexibility permitted to the worker in deciding what skills to employ. A second sub

dimension, which is decision authority, assesses the organisationally mediated possibilities for workers to make decisions about their work (Theorell & Karasek, 1996). Job demand emphasizes the level of demand particular job content poses to the worker. Dorsch and Eaton (2000) states that job demands dimension refers to whether there is enough time to get the job done, the amount of work, and the presence of conflicting demands. The basic tenet of JDC model is that job control or decision latitude is the crucial resource that moderates potential negative effects of employees' performance (Rodriguez, Bravo & Peiro, 2001). The JDC model indicates that jobs which are high in demands and low in control at work carry the highest risk of illness and performance deficiencies.

2.2 Work Performance

Various researches (Rotundo & Sackett, 2002; Viswesvaran & Ones, 2000), indicates that individual work performance consists of three broad dimensions. The first dimension, task performance, refers to the proficiency with which individuals perform the core substantive or technical tasks central to his or her job (Campbell, 1990). The second dimension, contextual performance, refers to a behaviour that supports the organisational, social and psychological environment in which the technical core must function (Borman, Motowidlo & Schmit, 1997). The third dimension, counterproductive work behaviour, refers to a behaviour that harms the well-being of the organisation (Rotundo & Sackett, 2002). believes that involving employees in decisions that affect them not only increases their personal commitment, but also motivates them to be advocates for their decisions, supporting this assertion, Agarwala (2008), contends that when employees are involved in making decisions and planning the implementation of changes that affect them, they implement changes faster with higher performance than employees who are merely communicated to about the change. Having noted that, according to Blanchard and Witts (2009), employees greatly desire to have the tools, training, support and authority to make decisions and perform their jobs correctly.

2.3 Relationship Between Work Condition and Performance

Existing researches has established a link between working conditions and job performance (Naharuddin & Sadegi, 2013). An organisation that has the right environmental factors both physical and psychosocial

will lead to increase performance (Chandrasekar, 2011). The work condition's demand-control model has contributed to the study of occupational health by providing a theoretical framework to explain the relation between the psychosocial characteristics of the work conditions and performance outcomes (Dorsch & Eaton, 2000). In this regard, Dorsch and Eaton (2000) postulates that the two basic dimensions (decision latitude and job demand) of work condition predict a broad range of behavioural outcomes. On the same breath, Massey and Perry, (2006), also found out in their study that there is increasing and compelling evidence that providing a healthy and safe working conditions has the potential to increase work performance, productivity and in turn increase organisations profits.

Based on the above studies, it is expected that there is a significant relationship between the work condition dimensions with performance (Hypothesis 1) and good work conditions predict good performance and vice versa (Hypothesis 2).

3. Research Methods

3.1 The Research Approach

The study was conducted in a form of quantitative research and employed descriptive and explanatory research designs to address predictions, correlations and causal relationships. Saunders, Lewis and Thornhill (2003), explained that the main aim of descriptive design is to portray an accurate profile of persons, event or situations and it is very important to have a clear picture of the phenomena on which the researcher wish to collect the data prior the collection of the data. The explanatory research design involves studies that establish the relationships between variables. Explanatory research is designed to test whether one event causes the other (Hair, Babin, Money & Samuel, 2003). This study uses explanatory design since it focuses on the causal explanations.

3.2 Research Participants

A simple random sampling, where population members are selected directly from the sample frame was used. This method gave an equal chance of selection to all population members that appear in the sample frame. In total, 341 respondents completed a questionnaire which resulted in a response rate of 61.5%. To obtain reliable data, probability sample draws elements from the

population by random selection. As evident from Table 1 on the following page, the majority of the respondents in this study were males, accounting to 61.5% of the participants, while females accounted to 38.5%. The highest percentage on the age of the respondents was 37.6% falling within the age range of 36 to 45, implying that majority of the participants in this study were between ages of 36 to 45 years old. This table is indicative of the fact that majority of the respondents (45%) had no qualification further than grade 12, followed by participants with diploma (27.8%), followed by Degree/BTech (16.6%). Participants with Masters and PHD recorded the least percentage (4.0%) each. Meanwhile blacks accounted for a majority of 69% of the respondents whereas both whites and coloureds shared 13.2% each, leaving Asians at minority components of only 2.9%. The operational work category reported significant majority of 60.5% of respondents working within operational category compared to 30.5% of respondents working within administrative category.

3.3 Research Procedure

This study was conducted in two phases, (literature review and empirical study). Firstly, the literature was reviewed with reference to the previous scientific researches that were conducted on the effect of work conditions on performance of employees in mining industry. Previous studies and various researches under the subject of work condition and job performance were used as the source of literature. Secondly, the empirical study includes the research design, the participants, measuring instruments and data analysis. This study was conducted in the form of quantitative research method. Quantitative research refers to the use of numbers to collect or work with data (Luw & Edward, 2005). In agreement, Neuman (2011), quantitative research to a research in which data is collected or coded into numerical forms, and to which statistical analysis was applied to determine the significance of the findings. The mining employees were given questionnaires amid their prior consent and all ethical considerations in order to collect data. The data collected was analyzed and interpreted through the use of statistical methods (i.e. IBM SPSS Version 23) to arrive at particular research discussions and conclusions. In line with the objective of this study, Pearson product-moment correlation coefficient was used to examine the relationship between work

Table 1: Characteristics of the Participants (N=205)

No	Variables	Category	Frequency	Percentages (%)
1.	Gender	1= Male	126	61.5%
		2= Female	79	38.5%
2.	Race	1= Black	143	69.8%
		2= White	27	13.2%
		3= Coloured	27	13.2%
		4= Asian	6	2.9%
3.	Age	1=24 years and younger	17	8.3%
		2= 25 - 35 years	65	31.7%
		3= 36 - 45 years	77	37.6%
		4= 46 - 55 years	34	16.6%
		5= 56 years and older	11	5.4%
4.	Qualifications	1= Grade 12 Certificate	93	45.4%
		2= Diploma	57	27.8%
		3= Degree/BTech	34	16.6%
		4= Honours	10	4.9%
		5= Masters	4	2.0%
		6= PHD	4	2.0%
5	Work Category	1= Operational	124	60.5
		2= Administrative	81	30.5

Source: Authors

conditions and performance. Regression analysis was used to determine the effect of work condition dimensions (independent variables) on the performance (dependent variable) of employees in mining industry in Limpopo Province.

4. Measuring Instruments

4.1 Biographic Characteristics

Biographic information such as gender, age, race, qualifications and work category were measured by means of biographic questionnaire attached to other measuring instruments.

4.2 Work Conditions

Work conditions was measured using a *Job Content Questionnaire* (JCQ) developed by Robert Karasek (1998) and it is based on his control-demand model. The questionnaire contains 22 items, which consist of a minimum set of questions for assessment of three major JCQ scales – decision latitude, psychological demands and work-related social support. The decision latitude scale is the sum of two subscales: skill discretion, measured by six items (i.e.

"my job requires me to be creative"), and decision authority, measured by three items (i.e. *"I have a lot of say about what happens on my job"*). The psychological demands scale is measured by five items (i.e. *"my job requires working very fast"*). The work-related social support scale is the sum of two subscales: support from supervisors and support from co-workers, both measured by four items each (*"my supervisor listens to my opinions"*; *"I have good relationship with my co-workers"*). For each item, the response was recorded on a four-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). For each scale, a sum of weighted item scores will be calculated (Cheng, Wei-Luh & Guo, 2003). In this study, the JCQ has shown reliability, reporting 0.73 Cronbach's alpha coefficient. See Table 2 on the following page.

4.3 Performance

The performance of employees was measured through the use of *Individual Work Performance Questionnaire* (IWPQ 1.0) developed by Koopmans (2014). The IWPQ 1.0 consists of 3 scales (task performance, contextual performance, and counter-productive work behaviour) with a total of 18 items.

Table 2: Reliability Statistics for Measuring Instrument (JCQ)

Job Content Questionnaire (JCQ)	
Cronbach's alpha	Number of items
0.737	22

Source: Authors

Table 3: Reliability Statistics for Measuring Instrument

Individual Work Performance Questionnaire (IWPQ)	
Cronbach's alpha	Number of items
0.774	18

Source: Authors

Table 4: Descriptive Statistics

Variable	Cronbach's alpha	Mean	SD	Skewness	Kurtosis
Decision latitude	0.36	2.75	0.54	3.97	38.6
Job demand	0.53	2.95	0.49	2.24	16.9
Social support	0.80	2.95	0.44	0.14	-0.38
Task performance	0.84	3.02	0.95	0.47	0.84
Contextual performance	0.67	2.97	0.95	2.27	13.65
Counterproductive performance	0.83	1.58	0.58	0.76	-0.34

Source: Authors

Of these scales, task performance was measured by the first seven items (i.e. "I managed to plan my work so that it was done in time"), contextual performance was measured by the second seven items (i.e. "I took on challenging work tasks when available") and counterproductive work behaviour was measured by the last four items (i.e. "I complained about unimportant matters at work"). Within each scale, items were presented to participants in randomized order, to avoid order effects. All items were measured based on a five-point rating scale ("seldom" to "always" for task and contextual performance, "never" to "often" for counterproductive work behaviour) (Koopmans, Bernaards, Hildebrandt, de Vet, & van der Beek, 2014). In this study, the *Individual Work Performance Questionnaire* has shown reliability, reporting 0.77 Cronbach's alpha coefficient. See Table 3.

5. Statistical Analysis

The statistical analysis was carried out with the use of IBM-SPSS (Version 23, 2015) program. Cronbach alpha coefficients were used to assess the reliability and validity of the measuring instruments (JCQ & IWPQ) (Clark & Watson, 1995). The Pearson product-moment correlation coefficient was used to

specify the relationship between work condition and employees' performance, in accordance with the first hypothesis (**H1: there is a significant relationship between the work condition dimensions with performance**). The statistical significance of these relationships was set at $p < 0.05$ and the effect size was computed to assess the significance of the relationships. A cut-off of $r \geq 0.05$ which represent a medium effect was also set (Cohen, 1998). Multiple regression analysis was also used to analyse the predictor variables on criterion variables in accordance with the second hypotheses (**H2: good work conditions predicts good performance and vice versa**). Multiple regression analysis in this paper was used as a statistical technique to explore linear relationship between the predictor and the criterion. The statistical significance was set at $p \leq 0, 05$.

6. Findings and Discussions

Table 4 indicates the descriptive statistics of the study and the reliability (Cronbach's alpha coefficient) of all factors detected from two measuring instruments (JCQ & IWPQ) used in this paper. The overall information on Table 4 indicates that the scores on social support, task performance and

Table 5: Correlation Coefficient Between Work Condition and Work Performance

Item	1	2	3	4	5	6				
1. Decision latitude	-									
2. Job demand	0.4†	-								
3. Social support	0.4†	0.4†	-							
4. Task performance	0.4†	0.5†	0.5†	-0.06*	0.5†	0.5†	-0.02*	-		
5. Contextual performance	0.3†	0.4†	0.4†	-0.03*	0.5†	0.4†	-0.11*	0.7†	-	
6. Counterproductive	-0.3*	-0.04*	-0.3*	0.06†	-0.05*	-0.3*	0.11	-0.5*	-0.4	-

*statistically significant: $p \leq 0.05$; † practically significant correlation (medium effect) $r \geq 0.05$

Source: Authors

counterproductive performance subscales have a normal distribution (skewness and kurtosis is smaller than 1). The Cronbach's alpha coefficient of all subscales of Job Content Questionnaire and Individual Work Performance Questionnaire varied from 0.36 to 0.84.

All the mean inter-factor correlations of both Job Content Questionnaire and Individual Work Performance Questionnaire dimensions/subscales compared relatively well with the guideline of $r \geq 0.50$, varying from 1.58 to 2.97. The mean in each of these factors (i.e. decision latitude, psychological demand, and contextual performance) was very much larger than the median or (mode), relatively resulting in a large positive value of skewness coefficient (that is, the distribution was skewed to the right and skp is greater than +1) (Wegner, 2008).

Table 5 illustrates the Pearson product-moment correlation coefficient in order to specify the relationship between work condition and work performance, with a statistical significance set at $p < 0.05$ and the effect size computed to assess the significance of the relationships set at $r \geq 0.05$. The results of Table 5 correlation computation show the existence of statistically significant and practically significant positive and negative inter correlations of the factors of work condition (measured by JCQ) and work performance (Measure by IWPQ).

Work performance reported to have practically significant positive correlations with work condition, illustrated on Table 5 where all factors of work condition (decision latitude, Job demand & Social support) proved to have practically significant positive correlations with two (task performance & contextual performance) of the three factors of work performance, with the following practically significant positive correlation coefficients; decision

latitude and task performance recorded a practically significant positive correlation coefficient of (0.4), Job demand and task performance recorded a practically significant positive correlation coefficient of (0.5), whereas social support and task performance recorded a practically significant positive correlation coefficient of (0.5).

On the other hand, decision latitude and contextual performance recorded a practically significant positive correlation coefficient of (0.3), job demand and contextual performance recorded a practically significant positive correlation coefficient of (0.4), whereas social support and contextual performance recorded a practically significant positive correlation coefficient of (0.4).

The results from Table 5 show statistically significance negative correlation between all three factors of work condition (decision latitude, job demand & social support) and the last factor of work performance (counterproductive behaviour) recording the following statistical significance levels; decision latitude and counterproductive behaviour recorded a statistically significant negative correlation coefficient of (-0.3), job demand and counterproductive behaviour recorded a statistically significant negative correlation coefficient of (-0.4), whereas Social support and counterproductive behaviour recorded a statistically significant negative correlation coefficient of (-0.3).

Table 6 on the following page shows the standardized coefficients and statistical significance of each variable (independent) of work condition and their causal contribution on task performance. The results of this table indicate the amount of causal contribution each work condition variable have on task performance through illustrating beta (β) statistically significance (sig) values of

Table 6: Regression Analysis; Coefficients of Regression Analysis for Work Condition Variables as Independent Variables and Task Performance as a Dependent Variable

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.353	.419		-3.229	.001
	Decision Latitude	.165	.116	.093	1.428	.155
	Job Demand	.672	.129	.340	5.198	.000
	Social Support	.659	.144	.305	4.573	.000
a. Dependent Variable: Task Performance						
b. Predictors: (Constant), Social Support, Decision Latitude, Job Demand						

Source: Authors

Table 7: Regression Analysis; Coefficients of Regression Analysis for Work Condition Variables as Independent Variables and Contextual Performance as a Dependent Variable

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.498	.461		-1.080	.281
	Decision Latitude	.265	.127	.149	2.084	.038
	Job Demand	.572	.142	.288	4.021	.000
	Social Support	.357	.159	.164	2.250	.026
a. Dependent Variable: Contextual Performance						
b. Predictors: (Constant), Social Support, Decision Latitude, Job Demand						

Source: Authors

each independent variable. From the results of Table 6, decision latitude recorded standardized coefficients of the lowest beta value ($\beta = 0.093$) and it was found to be statistically insignificant, recording sig value (sig = 0.15) greater than a cut off of $p \leq 0, 05$, suggesting that decision latitude alone (as a predictor/independent variable) contribute very less on the impact of work condition on performance (as a criterion/dependent). On the other hand, job demand and social support recorded standardized coefficients of high beta values ($\beta = 0.340$ and $\beta = 0.305$) respectively. Both job demand and social support were found to be statistically significant, with both recording (sig = 0.000). From this coefficient regression results it is clear that both job demand and social Support (as predictor/independent variables) contributes more on the impact of work condition on performance (as a criterion/dependent). From this regression analysis results, the hypothesis (there is statistically significant relationship between work condition and task performance) can be accepted.

Table 7 shows the standardised coefficients and statistical significance of each variable (independent/predictor) of work condition and their causal contribution on contextual performance (dependent/criterion). The results of this table indicate the amount of causal contribution each work condition variable have on contextual performance through illustrating standardized coefficients beta (β) and statistically significance (sig) values of each independent/predictor variable. From the results of Table 7, decision latitude recorded standardized coefficients of the lowest beta value ($\beta = 0.149$) and it was found to be statistically significant, recording sig value (sig = 0.038) less than a cut off of $p \leq 0, 05$. Unlike in the results of the regression coefficients for decision latitude vs. task performance where decision latitude was found to be statistically insignificant and with a very low standardized coefficient beta, in this regard when tested with contextual performance, decision latitude shown increase in standardized coefficient beta and was found to be statistically significant, suggesting significant

Table 8: Regression Analysis; Coefficients of Regression Analysis for Work Condition Variables as Independent Variables and Counterproductive Behaviour as a Dependent Variable

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.262	.290		11.233	.000
	Decision Latitude	-.207	.080	-.193	-2.587	.010
	Job Demand	-.330	.090	-.275	-3.688	.000
	Social Support	-.043	.100	-.033	-.435	.664

a. Dependent Variable: Counterproductive Behaviour
b. Predictors: (Constant), Social Support, Decision Latitude, Job Demand

Source: Authors

amount of contribution of the impact work condition have on performance. Job demand recorded standardized coefficients of highest beta values ($\beta = 0.288$) with a statistically significant value of 0.00. Whereas social support recorded the second highest (second to JD) standardized coefficient beta value ($\beta = 0.164$) and it was also found to be statistically significant (sig = 0.026). Both job demand and social support were found to be statistically significant, with both recording (sig = 0.000). From this coefficient regression results it is clear that all three work condition variables (decision latitude job demand and social support) as predictor/independent variables contributes more on the impact of work condition on performance as a criterion/dependent. From this regression analysis results, the hypothesis (*H2* good work condition predicts good performance) can be accepted.

Table 8 shows the standardized coefficients and statistical significance of each variable (independent/predictor) of work condition and their causal contribution on Counterproductive Behaviour (dependent/criterion). The results of this table indicate the amount of causal contribution each work condition variable have on counterproductive behaviour through illustrating standardized coefficients beta (β) and statistical significance (sig) values of each independent/predictor variable. From the results of Table 8, decision latitude recorded second highest standardized coefficients beta value ($\beta = 0.193$) and it was found to be statistically significant, recording sig value (sig = 0.01) less than a cut off of $p \leq 0, 05$. Job demand recorded standardized coefficients of highest beta values ($\beta = 0.275$) with a statistically significant value of 0.00. Whereas social support recorded the lowest

standardized coefficient beta value ($\beta = 0.033$) and it was also found to be statistically insignificant (sig = 0.66), statistical value greater than a cut off of $p \leq 0, 05$. In this regard social support was found to have less causal contribution to the impact work condition have on performance, unlike when it was tested with task performance and contextual performance where it shown consistent significant contribution to the causal contribution. From this coefficient regression results it is clear that decision latitude and job demand as predictor/independent variables contributes more on the impact of work condition on performance as a criterion/dependent than Social Support. From this regression analysis results, the hypothesis (*H3*: poor work condition predicts poor performance) can be accepted.

7. Ethical Considerations

According to William (2006) ethical considerations can be defined as rules of conduct in research aimed at causing no harm and providing all possible benefits to the respondents. It also involves the responsibilities that the researcher bears towards those participating in the research. As part of the researcher's responsibilities, clearance was obtained from the University of Venda Research Ethics Committee. In addition, the permission to conduct the research was obtained from all selected mines. This study complied with the code of ethics proposed by the University of Venda. The participants were informed about the purpose of the study and everything that will happen during the research process and what was expected of them. The participants were given consent forms that they signed to formally agree to take part in the study. Participation was based on the respondents'

fully understanding of the benefits and risks. The participants were not compelled to participate, in other words, the participation in this study was fully voluntary. And most importantly, information provided by the participants, particularly sensitive and personal information, is protected and made unavailable to anyone other than the researcher. Participation was done on the bases of anonymity to ensure confidentiality.

8. Conclusion and Recommendations

The main aim of this paper was to investigate the effect of work condition on the performance of employees in the mining industry in the Limpopo Province. This paper was also aimed at investigating the relationship between work condition and work performance. To ensure credible data collection, the reliability analysis of the Job Content Questionnaire as well as Individual Work performance questionnaire was conducted. The results of the reliability analysis proved that both the measuring instruments (JCQ & IWPQ) were all reliable with JCQ reporting 0.74 Cronbach's alpha coefficient and IWPQ reporting 0.77 Cronbach's alpha coefficient. These Cronbach's alpha coefficient compared relatively well with the cut-off value of 0,70. These questionnaires reported internal inter-factor coefficient reliability and internal consistency.

The data collected on this research was analysed and interpreted with the use of SPSS. In line with the research objective and hypotheses, Pearson product – moment correlation coefficient was used to specify the relationship between work condition and work performance. The results obtained on this analysis addressed the first hypothesis *H1 (there is a significant relationship between the work condition dimensions with performance)*. Regression analysis was used to determine the impact of the predictor/independent variables on criterion/dependent variables. The results of regression analysis were particularly helpful in addressing the last two hypotheses *H2 (good work condition predicts good work performance and vice versa)*.

8.1 Results for Correlation Coefficients

The results of Pearson Product-moment correlation computation revealed that there is practically significant positive relationship between work condition and work performance. Work performance reported to have practically significant positive

correlations with work condition, where all factors of work condition (decision latitude, job demand & social support) proved to have practically significant positive correlations with at least two (task performance & contextual performance) of the three factors of work performance. These results reaffirmed the first hypothesis *H1 (there is a statistical and practical significant relationship between work condition and work performance)*. These results reaffirm the notion that work conditions (in this case referring to: employees having decision authority, job demand and supervisor and co-worker support) have an impact on performance of employees in the mining industry in the Limpopo Province. These findings also reaffirmed the previous literature done on the same subject i.e. Haizlip (2008), believes that involving employees in decisions that affect them not only increases their personal commitment, but also motivates them to be advocates for their decisions. Supporting this assertion, Agarwal (2008), contends that when employees are involved in making decisions and planning the implementation of changes that affect them, they implement changes faster with higher performance than employees who are merely communicated to about the change. Across (2005) states that employees do not perform well in situations where they lack autonomy, especially after they have gained the skills to work independently.

8.2 Results for Regression Analysis

Regression analysis was used to particularly address last two hypotheses *H2 (good work condition predicts good work performance & poor work condition predicts poor performance)*. This analysis used the model fit to specify the percentage in variance as a predictive value for predictor/independent (decision latitude, job demand & social support) variables on criterion variables (task performance, contextual performance & counterproductive behaviour). ANOVA results were illustrated to specify the statistical significance on the relationship between predictor/independent variables and criterion/dependent variables. Lastly the coefficients table was presented to specify the standardized coefficient beta values and the statistical significance of each predictor variable on each criterion variable.

The results of regression analysis found that there is a statistical significance relationship between work condition and task performance predicting 36% variance of the work condition's effect on task

performance and reported a value of 0.000 statistical significant. However, the coefficient analysis revealed that decision latitude recorded standardized coefficients of the lowest beta value ($\beta = 0.093$) and it was found to be statistically insignificant, recording sig value (sig = 0.15) greater than a cut off of $p \leq 0, 05$, suggesting that Decision Latitude alone (as a predictor/independent variable) contribute very less on the effect of work condition on performance (as a criterion/dependent). On the other hand, job demand and social support recorded standardized coefficients of high beta values ($\beta = 0.340$ and $\beta = 0.305$) respectively. Both job demand and social support were found to be statistically significant, with both recording (sig = 0.000). Therefore, level of job demand and social support of employees in mining industry in Limpopo province have an impact on their performance. Decision latitude alone reported to have lesser impact on the performance of employees in mining industry in Limpopo province.

Meanwhile all three work condition variables (decision latitude, job demand & social support) reported to have statistical significant relationship with contextual performance with 22% variance of prediction. Decision latitude was again found to have recorded standardized coefficients of the lowest beta value ($\beta = 0.149$) however statistically significant, recording sig value (sig = 0.038) less than a cut off of $p \leq 0, 05$. Both job demand and social support recorded higher standardized coefficient values and were both statistically significant. These results imply that both job demand and social support contributed more on the effect of work condition on contextual performance, whereas decision latitude contributed lesser. In a nutshell, factors such as high job demand, lack of supervisor support and co-workers support affect the performance of employees in mining industry in Limpopo province.

Regression analysis result on work condition vs. counterproductive behaviour indicate that work condition have an impact on counterproductive behaviour with 15% variance of prediction. However social support was found to be statistically insignificant with a very low standardized coefficient beta value, insinuating its least contribution to Counterproductive Behaviour. Both decision latitude and job demand was found to have an impact on counterproductive behaviour of employees in mining industry of Limpopo province. According to these regression results hypothesis (**H2**) can be

accepted with a specific emphasis of the fact that decision latitude was found to have no influence on both task performance and contextual performance whereas social support was found to have no influence on counterproductive behaviour.

8.3 Recommendations

In this research, work condition was found to have an effect on performance, and therefore adding to the existing literature that pointed work condition as a factor that affect performance. The results of this paper led to an inference that factors such as decision latitude, job demand and social support affect performance. These results are in line with the existing literature that points work condition as one of the factors affecting performance. This inference is supported by the correlation results that indicate that there is statistically and practically significant relationship between factors of work condition and work performance of employees in the mining industry in the Limpopo province. Regression analysis was used to determine the impact of work condition as an independent/predictor variable on performance as a dependant/criterion variable. Three work condition variables (decision latitude, job demand & social support) were computed against work performance variables (task performance, contextual performance and counterproductive behaviour). The results of regression analysis in this regard revealed that factors of work condition have an impact on the performance of employees in mining industry of Limpopo province. These results recorded statistically significance and standardized coefficients beta values signifying the existing relationship between the predictor variable (work condition) and the criterion variable (performance), as well as a considerable percentage of variance (36% highest) signifying the prediction extent of the predictor variable on the criterion variable. Although there were variables (independent/predictor) that have shown less influence (by recording very low standardized coefficient beta values) on dependent variable, the general conclusion of the results is that work condition have an impact on work performance.

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