

# Effects of Working Environment on Employee Performance: In the Case of Bole Lemi Industrial Park, Addis Ababa, Ethiopia

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**Abstract:** The aim of this study was to investigate the effects of the working environment on employee performance in Bole lemi Industrial Park found around Addis Ababa, Ethiopia. A quantitative research approach with an explanatory research design was adopted in carrying out this research. Cross-sectional data were collected to address the study's research objectives using a questionnaire from 315 employees using a random probability sampling technique. The collected data were analyzed using descriptive statistics, correlation, and regression analysis through the statistical package for social science (SPSS) version 25. The study used seven major working environment factors including physical environment, reward, democratic leadership style, work-life balance, training, workload, and discrimination as predictor variables and employee performance as the dependent variables. The finding of the research highlights that physical work environment, reward, and training have a positive and statistically significant impact on employee performance while workload and discrimination have a negative and statistically significant impact on employee performance. On the other hand, democratic leadership style and work-life balance have shown statistically insignificant impacts on employee performance. Based on the findings of the study, recommendations made for the management of the industrial park are: physical work environment in terms of lighting, noise level, temperature, and ventilation should be made sure that they stay at an acceptable level, discrimination has to be minimized at the workplace by encouraging employee irrespective of gender, age, ethnic group or religious belief to participate in decision making as this will help to reduce discrimination in the workplace.

**Keywords:** Bole lemi industrial park, Employee performance, Working environment.

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## 1. Introduction

Ethiopia is implementing phase II of its growth and transformation plan which is anchored on building a solid and vibrant industrial base that will engender inclusive growth in structural economic transformation (National Planning Commission, 2016). The Ethiopian government's overarching plan is to make the country the leading manufacturing hub of Africa and aims in building more industrial parks to enable the manufacturing sector to contribute 20 percent of GDP and 50 percent of export volume by 2025. Therefore, the Manufacturing industry is one of the most important sectors for Ethiopia's economic development. Employees in turn are one key asset of the manufacturing industry. They can largely determine the industry's profitability and survival fate in a good or bad way. When employee work in an un-conducive work environment it results in absenteeism, low productivity, or other measurements by employees that can directly or indirectly affect their performance as well as the organization's performance.

Job Performance is a very significant factor for any organization in order to achieve and accomplish the assigned tasks efficiently and effectively which can lead to profitability for the organization and means of satisfaction for employees (Muchhal, 2014). However, in most organizations, the performance of employees is affected by several factors those working environment, in which employee perform their tasks, plays a great role in affecting employee performance positively or negatively (Chandrasekhar, 2011).

According to Gerber et al (1998); the working environment encompasses the social, and psychological work environment and the physical design of the job. According to Tripathi (2014), the work environment can be defined as the environment in which people work that includes physical setting, job profile, workload, leadership style, culture, and market condition. Each aspect is interred linked and impacts an employee's overall performance and productivity. It is the quality of the employees 'workplace environment that most impacts their level of motivation and subsequently performance. The work environment can be thought of simply as the environment in which people work (Briner, 2000) as such; it is a very broad category that encompasses the physical environment (e.g., heat, equipment), characteristics of the job itself (e.g., workload, task complexity), organizational features (e.g., culture, history) and even aspects of the external organizational setting (e.g., local labor market conditions, industry sector, work-life balance). Other factors of the working environment are also identified by previous studies; workload (Ali et al, 2013), training (Robertson et al., 2016), and discrimination in the workplace (Robertson et al., 2016).

There are lots of organizations in which their employees run into different problems with working conditions related to environmental and physical factors (Leblebici, 2012). It is the quality of the employee 's workplace environment that most impacts their level of motivation and subsequent performance. How well they engage with the organization, especially with their immediate environment, influences to a great extent their error rate, level of innovation and collaboration with

other employees, absenteeism, and ultimately, how long they stay on the job. Many studies have revealed that most employees leave their organization because of the relationship with their immediate supervisor or manager (Chandrasekar, 2011). Therefore, by having a proper workplace environment, it's possible to reduce absenteeism, increase productivity, and maximize quality at the workplace.

According to Cooke (2016), employee performance can be defined as the achievement of specified tasks measured against predetermined or identified standards of accuracy, completeness, cost, and speed. Employee performance is depending on the willingness and also openness of the employees itself in doing their job. By having this willingness and openness of the employees in doing their job, it could automatically increase the employees' productivity which also leads to performance (Sinha, 2001). Armstrong (2006) defines performance as the development of quantified objectives. Performance is not only a matter of what people achieve but how they achieve it.

According to previous studies, there are different points of view regarding the employee's performance. Some scholars have argued that job performance is a result of behavior. Moto wildo & Scotter (2013) stated that performance is based on behaviors or activities that are associated with the goals of an organization. Moreover, job performance is the action or behavior itself and not the result of actions or a consequence. According to Borman & Motowidlo (1997), there are two types of employees' behavior that could lead to the employees' performance as task performance and contextual performance.

Task performance refers to the prescribed role an employee should comply with in order to attain organizational goals. It can be defined as the efficacy with which incumbents perform activities that contribute to the development of the organization's technical core. This contribution can be direct, including the application of a part of organizational technology, or indirect, providing materials or services needed to perform organizational technical processes (Borman et al, 2007). Contextual performance, also called citizenship performance, involves those behaviors not directly related to job tasks, but having a significant impact on organizational, social, and psychological contexts. In measuring employee task performance behavior for this particular study, the indexes of measurement for performance were extracted from (Hakala, 2009)

Various studies revealed that there is a relationship between the working environment and employee job performance. If there is an appropriate, fitting, and suitable working environment in terms of physical design as well as psychosocial it highly increases the performance of employees (Chandrasekar, 2011; Buhter, 1997). Khan et al (2011) examined the impact of the working environment and infrastructure on employee performance in the education sector in Pakistan and the result showed that there is a positive relationship between reward and employee performance.

Haneen Okasheh and Khaled Al-Omari (2017) investigated their study on the influence of workplace environment on job performance in the case of an engineering company in Jordan and the result showed that there is a positive relationship between the physical environment and job performance also suggested that employers should have to take courage and make the working environment suitable in order to increase employees job performance.

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the education sector in Pakistan and the result showed that there is a positive relationship between reward and employee performance. Al-Omari et al, (2017) investigated their study on the influence of workplace environment on job performance in the case of an engineering company in Jordan, and the result showed that there is a positive relationship between the physical environment and job performance and also, they suggested that employers should have to take courage and make the working environment suitable in order to increase employees job performance.

Even if many types of research are done on the concepts of working environments in different parts of the world however there is a lack of literature on Ethiopian cases. Clearly, there is insufficient literature that could help comprehend the relationship between the working environment and employee performance among industrial parks. This study, therefore, investigated the effect of the working environment on employee performance; in the case of Bole Lemi Industrial Park.

## **2. Materials and Methods**

### **2.1. Study area and setting**

The study was conducted in Bole Lemi Industrial Park's Addis Ababa, Ethiopia. Bole Lemi is Ethiopia's first industrial park developed by the Industrial Park Development Corporation (IPDC). All of the pre-erected factories in Bole Lemi Phase 1 (156ha), which began operations in 2014, have already been rented out to more than 11 different businesses, employing a total of more than 18,549 workers. This study was done in eleven factory corporations including several investors from Taiwan, China, India, and South Korea in sectors such as textile, garment, and shoe production.

### **2.2. Study Design**

An explanatory research design was employed to explain the effect of independent variables, (working environment dimension) on the dependent variable (employee performance). The research is cross-sectional type; in the sense that data was collected at one point in time due to the limitations of time and cost.

### **2.3. Source and Study Population**

The primary source of data for this research was collected from operational workers of industrial parks via a questionnaire.

### **2.4. Inclusion and Exclusion Criteria**

Workers who were currently engaged in the industries, who have a minimum of 6 months of work experience, and who were willing to participate in the study were included. Workers who were seriously ill or/ and unable to communicate and those who were absent during the data collection period were also excluded.

### **2.5. Target Population and Sample Size**

The targeted populations for this study were operational workers of bole lemi industrial park. Accordingly, the target population of the study was 14,030 employees.

The main emphasis of this study was to identify the effect of the working environment on employee performance. The target populations for this study were employees of the industrial park under study. The sample size required for the study is computed based on the sample size determination

developed by Carvalho (1984).

**Table 1.** Sample Size Population

Population size	Small	Medium	Large
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1,200	32	80	125
1,201-3,200	50	125	200
3,201-10,000	80	200	315
10,001-35,000	125	315	500
35,001-150,000	200	500	800

Therefore, based on Carvalho (1984) sample size determination method, for this study because of time and budget shortage medium sample size equals 315, respondents were selected from the total population of 14,030 of 11 factories according to the proportion to each factory population on the basis of simple random sampling. The sample size selected here is considered representative of the target population and large enough to allow for precision, confidence, and generalization of the research findings.

## 2.6. Sampling Techniques

The study was focused on operational employees from each sector. The rationality of focusing on an operational employee was to get accurate and unbiased information about working environment factors. The study applied probability sampling techniques in order to give equal opportunity to the target population. According to Kothari (2004), —probability sampling is also known as \_random sampling or \_Chance sampling ‘. Under this sampling design. After having the representative sample size from each factory, the researcher applied simple random sampling techniques to select sample respondents from each factory according to their proportionate to gather data about the working environment and employee performance.

## 2.7. Data Process and Analysis

The data collected from the questionnaire were processed both in manual and computerized method. In order to detect errors and omissions the raw data were edited. In order to reduce the response into limited numbers of categories the raw data were coded by using numerical and other symbols. The research also used tabulation in order to summarize the raw data and display in the compact form for further analysis.

The data collected from the respondents was analyzed by using descriptive statistics such as mean, percentage and standard deviation and inferential statistics such as Pearson correlation and regression analysis. In order to know the strength of relationship between independent and dependent variable correlation test was employed. Finally, to test the hypothesis, regression and analysis of variance was employed. In analyzing the data, the researcher used SPSS version 25 software package.

### 2.7.1. Descriptive Analysis

Descriptive analysis was used to interpret a variable which deals with background or demographic of the respondents and mean score of working environment dimensions and employee performance. The results are presented in tabular,

frequency distribution and percentage. This was employed through the computation of means and standard deviations of data gathered for the variables.

### 2.7.2. Inferential Statistics

Inferential statistics were used to show the relationship between the variables and to analyze the effect of the working environment on employee performance. As stated in Kothari (1990), —amongst the measures of relationship, Karl Pearson’s coefficient of correlation is the most frequently used measure in the case of statistics of variables. Field (2006), states that the output of a correlation matrix can be the correlation coefficient that lies between -1 and +1 within this framework, a correlation coefficient of +1 indicates a perfect positive relationship, and a correlation coefficient of -1 indicates a perfect negative relationship; whereas a coefficient of 0 indicates no linear relationship at all. Therefore, to find out the relationship between working environment dimensions and employee performance Pearson product-moment correlation was applied.

Multiple regression analysis refers to the analysis concerning the relationship between the dependent and independent variables; with the multiple regression equations describing the relationship (Kothari, 1990). This approach was used in this study to analyze the effect of working environment dimensions on employee performance.

## 2.8. Model Specification

It could be inferred from the works reviewed in the previous sections; that employee performance is determined by some factors of the working environment. Thus in respect of the hypotheses stated above, the main issue is an investigation of the relationship that exists between employee performance and each of the explanatory variables that had been identified through literature and theories i.e. physical work environments, reward, democratic leadership style, work-life balance, training, workload, and discrimination. Other factors that are not explicitly included in the model were captured by the error term in the model. Therefore, the general model which incorporates all of the variables to test the hypotheses of the study was;

$$EP = \beta_0 + \beta_1(PE) + \beta_2(R) + \beta_3(DLS) + \beta_4(WLB) + \beta_5(TR) + \beta_6(WL) + \beta_7(DS) + \mu$$

**Where;**

**EP**=Employee Performance (Dependent Variable)

**$\beta_0$** = constant term

**PE**=Physical Environment

**WPR**= Reward

**LS**=Democratic leadership style

**WLB**= work-life balance

**TR**= training

**WL**= workload

**DS**= discrimination

**$\mu$** = error term

**$\beta$** : coefficients associated with each independent variable which measures the change in the value of Y, per unit change in their respective independent variables.

### 3. Result and Discussion

This part has included four sections. The first section presented a descriptive analysis of variables. The second section deals with the correlation analysis and shows the degree of association between the study variables. Section three presented the classical linear regression model assumption diagnostic test results. Finally, the fourth section has presented the results of the regression analysis and discussions on regression analysis.

#### 3.1. Descriptive Statistics

##### 3.1.1. Background Information of the Respondents

The demographic characteristics include gender, age, marital status, and level of education. This aspect of the analysis deals with the personal data of the respondents of the questionnaires given to them. Therefore, in order to validate the reliability of the data collected is mandatory to analyze the demographic profile of the respondent.

**Gender of the Respondents:** The gender proportion of male respondents represented 54.7%, on other hand, 45.7% were females. The survey showed that there were more females as

compared to males.

**Age Category of the Respondents:** The age distribution of the respondent who participated in this study is provided. we observe that 57.7% of the respondent lies within the 18 up to 25 age group. 37.2% of the respondents are in the range of 26-33 and 5% of the respondents are within the 34-41 age group. From this, we can say that most of the bole lemi industrial park employees are very young.

**Marital Status of the Respondents:** As far as the composition of marital status is concerned 193 (64.8%) of the respondents are single, 104 (34.9%) are married, and 1 (0.03%) is divorced. From this, it can be understood that employees working in bole lemi industrial park consist of the status of marital status with the majority of single people at 64.8%.

**Level of Education of the Respondents:** level of education is concerned 145 (48.7%) of the respondents are below 12, 38(12.8%) are in grade 12th, 84 (28.2%) are in the diploma level, 31 (10.4%) are in the degree level. From this, it can be understood that employees working in bole lemi industrial park consist of all levels of educated people with the majority below 12.

**Table 2.** Socio-demographic Characteristics of bole lemi industrial parks workers (respondents)

Variables	Category	Frequency(n)	Percent (%)
Sex	Male	163	45.3
	Female	135	54.7
Age	18-25	172	57.7
	26-33	111	37.2
	34-41	15	5
Marital Status	Single	193	64.8
	Married	104	34.9
	Divorced	1	0.03
Educational Status	Below 12	145	48.7
	12 <sup>th</sup>	38	12.8
	Diploma	84	28.2
	Degree	31	10.4

##### 3.1.2. Descriptive Statistics of the Variables

The computed summary of descriptive statistics for dependent (employee performance) and independent (physical environment, reward, democratic leadership style,

training, workload, and discrimination) variables that were included in the questionnaires were indicated in this part. The mean and standard deviation of all variables collected from the respondents were discussed.

**Table 3.** Descriptive Statistic of the Variables

Variables	Minimum	Maximum	Mean	Std. Dev
Employee performance	1.00	5.00	3.97	1.150
Physical environment	1.00	5.00	3.47	.977
Reward	1.00	5.00	2.63	1.100
Democratic leadership	1.00	5.00	3.55	0.907
Work-life balance	1.00	5.00	3.33	1.095
Training	1.00	5.00	3.49	1.083
Workload	1.00	5.00	2.39	1.100
Discrimination	1.00	5.00	3.02	1.149
Valid N (list-wise)				

The overall arithmetic means and standard deviation of dependent and independent variables as responded to by the respondents. The finding of this study indicates that most of the employees sufficiently agreed with the democratic leadership style with a mean value of 3.55 and 0.907 standard

deviations, training with a cumulative mean value of 3.49 and 1.083 standard deviations, physical environment scored a mean value of 3.47 and 0.977 standard deviation. This indicates that bole lemi industrial park should maintain its strength in the physical environment, democratic leadership

style, and training in order to have competent employees and improved performance. However, employees on other variables such as work-life balance agreed with a cumulative mean value of 3.33 and 1.095 standard deviations, and Discrimination with a mean value of 3.02 and 1.149 standard deviations. This implies that bole lemi industrial park has to work on balancing the work and personal life of the employees and avoid the prevalence of workplace discrimination.

On the other hand, workload scored a mean value of 2.39 and 1.100 standard deviations; reward scored a mean value of 2.63 and 1.100 standard deviations. This implies that bole lemi industrial park have to give due attention to give reasonable workload and, sufficient breaks for its employee. Additionally, it should give due attention in terms of providing a fair reward for its workers. Finally, employee performance scored a mean value of 3.97 and 1.150 standard deviations. The mean and standard deviation for all items is shown in Appendix B

### 3.2. Inferential Statistics

In this section, the result of inferential statistics employed in the study supported on Pearson correlation coefficient, and multiple regressions were elaborated.

#### 3.2.1. Correlation Analysis

Correlation describes the strength of the association between variables. According to Brooks (2008), correlation analysis measures the degree of linear association between dependent and independent variables. The value of the correlation coefficient ranges from -1 to 1. A correlation coefficient of 1 indicates that there is a perfect positive relationship between two variables; while -1 indicates that there is a perfect negative relationship between two variables. On the other hand, a correlation coefficient of zero indicates no relationship between variables.

According to McDaniel and gates (2006), a value of correlation coefficient between 0.1 and 0.29 indicates the association among the items is poor. A correlation coefficient between 0.3 and 0.49 implies there is a moderate relationship correlation coefficient greater than 0.5 implies a strong relationship between two variables. Based on this as noted by Gujarati,2004, the most generally used bi-variant correlation coefficient, normally known as Pearson correlation was utilized in order to find out the relationship between working environment dimensions and employee performance. The table below presents the result of the Pearson correlation between variables.

**Table 4.** The Relationship between Working Environment Dimensions and Employee Performance

	EP	PE	R	DLS	WLB	TR	WL	DS
PE	.689**	1						
R	.557**	0.562	1					
DLS	.552**	0.619	0.446	1				
WLB	.527**	0.600	0.534	0.594	1			
TR	.583**	0.625	0.433	0.618	0.578	1		
WL	-.526**	(0.454)	(0.353)	(0.339)	(0.401)	(0.377)	1	
DS	-.442**	(0.318)	(0.311)	(0.270)	(0.292)	(0.276)	(0.511)	1

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

\* . Correlation is significant at the 0.05 level (2-tailed).

The result in table 4.10 indicates that there is a significant positive correlation between the physical environment and employee performance with a correlation coefficient of  $r=.689$  and sig. (2-tailed) is  $.000$ , which is  $<.05$ . Therefore, there is a strong and statistically significant relationship at a 5% significance level. The reward is positively related to employee performance with a Pearson correlation coefficient  $r=.557$  and sig. (2-tailed) is  $.000$ , which is  $<.05$ . Therefore, there is a strong and statistically significant relationship at a 5% significance level. The correlation coefficient between democratic leadership style and employee performance is  $r=.552$  and sign. (2-tailed)  $.000$ , this implies a strong, positive, and statistically significant relationship at a 5% significance level. Work-life balance is positively related to employee performance with a Pearson correlation coefficient  $r=.527$  and sig. (2-tailed)  $.000$ , which indicates a strong, positive association and is statistically significant at a 5% significance level. The correlation coefficient between training employee performance  $r=.583$  and sig. (2-tailed)  $.000$ , which indicates a strong, positive association and is statistically significant at a 5% significance level.

On the other hand, the correlation coefficient between workload and employee performance is  $-.526$ , and sig. (2-tailed)  $.000$ , this indicates a strong, negative association and is statistically significant at a 5% significance level. Discrimination is negatively related to employee performance with correlation coefficient  $r=-.442$  and sig. (2-tailed)  $.000$ , which is  $<.05$ . Therefore, there is a moderate and statistically significant relationship between discrimination and employee performance.

#### 3.2.2. Testing Assumptions of Classical Linear Regression Model (CLRM)

In order to estimate the parameters in multiple linear regression models and minimize the sum of squared error or the difference between the observed value and predicted value ordinary least square method (OLS) method was employed for this study. While using the OLS method in order to have the correct estimator value the five key underlying assumptions should be satisfied. When the assumptions are violated OLS estimators produce biased, inconsistent, and inefficient results. Therefore, tests of hypothesis are no longer valid since the standard errors are wrong. Therefore, in order to protect against the chance of getting and interpreting wrong regression results the researcher conducted a diagnostic test. To make sure that the model is unbiased, consistent, efficient, and valid the following tests are conducted.

#### 3.2.3. Test for Residual Has Zero Mean

Classical linear regression models assume that the error terms have zero mean values. In fact, if a constant term is included in the regression model equation this assumption will never be violated (brooks, 2008). In this study, the researcher included the constant term in the regression equation. Therefore, it's expected that the error terms have zero mean value and that the assumption is not violated.

#### 3.2.4. Test for Heteroscedasticity

The classical linear regression model assumes the variance of the error term is constant, this is known as homoscedasticity. If the variance of the error term is not the same, they are said to be heteroscedastic. In order to check the violation of this assumption the research used the scatter plot technique. The result plots the standardized residual, against the standardized predicted value. If the plots have a pattern, it implies the presence of heteroscedasticity. Conversely, if the

plots depict a pattern there is no evidence for the presence of heteroscedasticity. As illustrated in the figure, 1, below the

graph looks like a random array dot or the plots have no pattern. So, the homoscedasticity assumption is not violated.

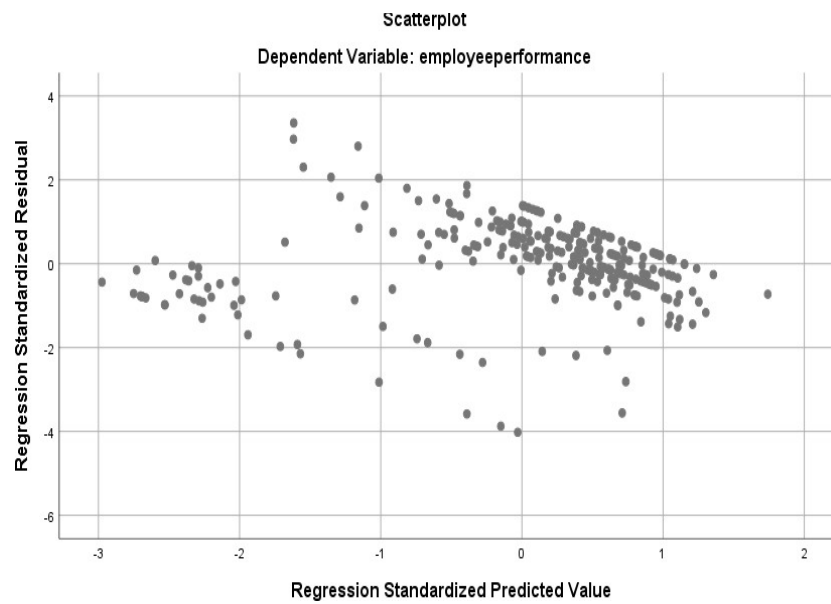


Figure 1. Heteroscedasticity test

### 3.2.5. Test for Autocorrelation

The classical linear regression model assumes cross-sectionally the covariance between the error term is zero. In other words, it assumes there is no serial correlation among error terms. The research applied the Durbin-Watson test, which is the most commonly used technique for detecting autocorrelation. Thus, if the value of the DW test is between 1.5 and 2.5 there is no evidence of the presence of serial correlation among error terms (Hassen et al, 2017). As illustrated in table 4.11 the DW test falls in the acceptable range, which implies the absence of serial correlation among errors.

Table 5. Durbin Watson test result

Model	Durbin Watson
1	1.524

### 3.2.6. Test for Multicollinearity

CLRM model assumes no correlation between explanatory variables. Multicollinearity refers to the situation where some or all explanatory variables are highly inter-connected or the existence of the exact linear association. According to Gujarati (2004), if multicollinearity is ideal the regression coefficients of independent variables are undetermined, and difficult to measure their standard error. In order to test the multicollinearity problem the researcher applied variance inflation factor (VIF) and correlation coefficient of explanatory variables. If the VIF of the variables exceeds 10%, multicollinearity can be a potential problem (Hair et al., 2013). As illustrated in table 4.12 the value of the variance inflation factor for all explanatory variables is less than 10%. Therefore, it implies that there is no multicollinearity between explanatory variables.

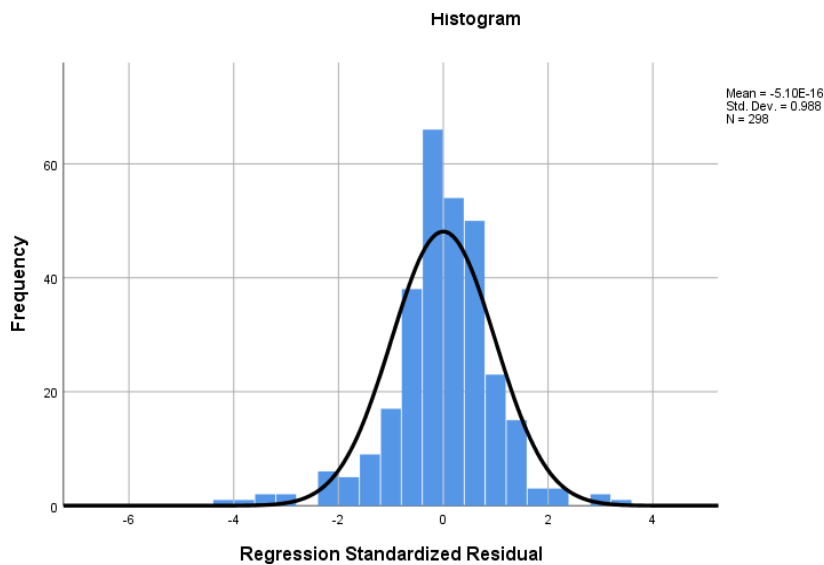
Table 6. VIF and Tolerance Statistics for Multicollinearity

Model		Collinearity statistics	
		Tolerance(1/VIF)	VIF (%)
1	Physical environment	0.424	2.357
	Reward	0.611	1.638
	Democratic Leadership style	0.490	2.040
	Work-life balance	0.491	2.035
	Training	0.494	2.026
	Workload	0.629	1.590
	Discrimination.	0.716	1.398

### 3.2.7. Test for Normality

CLRM assumes that the distribution of the error term is normally distributed. As field (2009), noted, the normality assumption is important while using regression and worthwhile, if we want to make inferences about the

population parameter from the sample parameters. If the mean of the residual is zero and constant variance the error is normally distributed. Thus, the result in figure 2 illustrates that the mean of the residual is zero and approximately its variance is 1, which implies that the distribution of the error is normally distributed.



**Figure 2.** Normality test

### 3.3. Analysis of Variance (ANOVA)

Analysis of variance was also done to establish the overall significance of the model. ANOVA also tells whether the overall effect of the seven independent variables on employee performance is significant. As depicted in table 4.13, at a

95% confidence interval, a significant P-value of .000 and F-value of 62.766 was recorded. This implies the regression model is a suitable prediction for explaining the effect of the working environment on employee performance in bole lemi industrial park.

**Table 7.** Analysis of Variance (ANOVA)

ANOVA						
	Model	Sum of Squares	Df	Mean Square	F	Sig
1	Regression	236.926	7	33.847	62.766	.000b
	Residual	156.384	290	.539		
	Total	393.310	297			
a. Dependent Variable: employee performance						
b. Predictors: (Constant), discrimination, democratic leadership style, reward, workload, training, work-life balance, physical environment						

### 3.4. Results of Regression Analysis

In accordance with the classical linear regression model, the model has satisfied the five diagnostic tests. Based on this, multiple regression analysis was determined in order to reveal the value of the coefficient included in the model. Accordingly, the table below depicts the result of the

regression model that examines the effect of explanatory variables on employee performance. Hence, employee performance is explained variable whereas physical environment, reward, democratic leadership style, work-life balance, training, workload, and discrimination are explanatory variables.

**Table 8.** Coefficients of Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.010	.294		6.832	.000
	Physical environment	.388	.067	.329	5.792	.000
	Reward	.179	.050	.171	3.602	.000
	Democratic Leadership	.114	.067	.090	1.707	.089
	Work life balance	-.009	.055	-.008	-.154	.877
	Training	.169	.058	.153	2.912	.004
	Workload	-.169	.049	-.161	-3.455	.001
	Discrimination	-.137	.044	-.137	-3.130	.002
a. Dependent Variable: employee performance						

Thus, the model applied in this study was the ordinary least square method. The regression equation can be stated as:

$$EP=2.010+0.388PE+0.17R+0.114DLS-0.009WLB+0.169TR-0.169WL-0.137DS+\mu$$

**Table 9.** Model Summary

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.776 <sup>a</sup>	.602	.593	.73434
a. Predictors:(Constant), discrimination, training, work-life balance, workload, Reward, physical environment, democratic leadership style				
b. Dependent Variable: employee performance				

### 3.5. Interpretation of R-square and Adjusted R-Square

R-square- is a statistical measure that tells the proportion of the variance for a dependent variable that's explained by an independent variable or variables included in the regression model. R<sup>2</sup>- also explains to what extent the variance of one variable explains the variance of other variables. R-squared value range from 0 to 1 and is commonly stated as a percentage from 0% to 100%. An R-square of 100% indicates that the dependent variable is completely explained by the independent variable of the model. 0% shows the model explains none of the variability of the response data around its mean. The value of the R-square in this study was found to be 0.602. This indicates that 60.2% of the variation in employee performance is explained by selected explanatory variables and other factors captured by the constant.

According to Brooks (2008), —R-square has some problems; the first one is when we add predictor variables in the model, every time, even if it's irrelevant R-square never decreases. Consequently, a model with more variables may appear to have a high R-square. Second, if the model is rearranged and the dependent variable changes, the r-square will change in order to get around these problems, a modification is often made that takes into account the loss of a degree of freedom associated with adding extra variables, this is known as adjusted R-square. Adjusted R-square is a modified version of R-squared that has been adjusted for the number of a predictor in the model. Therefore, the adjusted R-square compares the explanatory power of regression models that contain a different number of predictors. The value of the adjusted R-square in this study was found to be 59.3%. This implies that 59.3% of changes that occur in employee performance are attributable to independent variables.

The other factors such as harassment, violence, Welfare Facilities, Association and bargaining power, and other remaining factors that were not included in the model but could help in explaining employee performance account for the remaining 40.7%.

### 3.6. Interpretation of Regression Result and Hypothesis Testing

In this part of the study, the relationship between the dependent variable and the independent variable was discussed. The dependent variable was employee performance whereas the independent variables were physical environment, reward, democratic leadership style, work-life balance, training, workload, and discrimination.

In regression output, the Unstandardized coefficients of

determination were used to replace the unknown beta value of the regression model. Beta indicates the level of influence of each predictor variable on the dependent variable: as well it indicates the direction of the relationship. A positive beta coefficient indicates the variable has a positive effect on the dependent variable whereas a negative beta coefficient the variable has a negative effect on the dependent variable and it tells us on average when mean score value of the independent variable increases by one unit mean score value of the dependent variable increases or decrease by the beta amount if the variable is statistically significant. The significance value (p-value) implies the statistical significance of the relationship. The constant term of the model indicates the value of employee performance if all explanatory variables are held constant.

As illustrated in the table the coefficient of regression analysis indicates physical environment, reward, and training showed a positive effect whereas workload and discrimination showed a negative effect and were statistically significant at a 5% significance level. Conversely, work-life balance showed a negative effect but a statistically insignificant, and democratic leadership style showed a positive but a statistically insignificant. Therefore, in the next section, the researcher presents and discusses the effect of predictor variables on employee performance.

#### Hypothesis 1

H1:1 physical environment has a positive and significant effect on employee performance.

Results discussion; The result of multiple regressions as illustrated in table 4.14 above revealed that the physical environment has a positive and statistically significant effect on employee performance with a beta value of 0.388 and p-value of .000 which is less than 0.05. This implies that other explanatory variable remains constant, if the mean score value of the physical environment increases by 1 unit, on average the mean score value of employee performance increase by 0.388 unit and is statistically significant a at 5% significance level.

Decision; the researcher rejects the null hypothesis and accepted the alternative hypothesis; which means the physical environment has a significant effect on employee performance. This indicates that an improvement of physical environment elements (sound, lighting, temperature, workspace, design and layout, equipment, and tools) will lead to a correspondent increase in employee performance.

Other researchers finding; The research made by Nzewi et al (2018), investigated the relationship between physical work environment and employee performance in selected brewing firms in Anambra state, Nigeria. The research was a cross-sectional study conducted on 233 employees of brewing firms. They state that the physical work environment has a positive

and significant effect on employee performance; which is consistent with the result of this study.

#### Hypothesis 2

H1: 2 Reward has a positive and significant effect on employee performance

Results discussion; The result of table 4.14 showed that reward has a positive and statistically significant effect on employee performance with a beta coefficient of 0.179 and p-value of 0.000, which is less than 0.05. This implies that other explanatory variables remain constant if the mean score value of Reward increase by 1 unit on average the mean score value of employee performance increase by 0.179 unit and is statistically significant at a 5% significance level.

Decision; The researcher rejects the null hypothesis and accepted the alternative hypothesis; which means reward has a significant effect on employee performance. This shows that an increase in Reward elements like; payment, benefits, promotion, and recognition will lead to correspondent increase in employee performance.

Other researchers finding; The research by Mansor et al, (2012), studied the effect of reward on employee job performance in chemical-based industries in Malaysia. The research applied a quantitative approach and was conducted on 127 employees. The finding of the study revealed that reward has a significant and positive effect on employee job performance which is in line with the result of this study. The study of salah, m. (2016), titled the influence of rewards on employee performance also concluded that reward has a positive and significant effect on employee job performance.

#### Hypothesis 3

H1: 3 democratic leadership style has a positive and significant effect on employee performance.

Results discussion; As table 4.14 indicates, the democratic leadership style showed a positive and statistically insignificant effect on employee performance with a beta value of 0.114 and p-value of 0.089 which is greater than 0.05.

Decision; the researcher failed to accept the directional hypothesis in favor of the null hypothesis that means: democratic leadership style has no significant effect on employee performance.

#### Hypothesis 4

H1; 4 work-life balance has a positive and significant effect on employee performance.

Results discussion; the result of table 4.14 showed that work-life balance has a negative but statistically insignificant effect on employee performance with a beta value of -0.009 and p-value of 0.877, which is greater than the 5% significance level.

Decision; the research fails to accept hypothesis four or the directional hypothesis in favor of the null hypothesis which means; that work-life balance has no significant effect on employee performance.

Other researchers finding; the research by Shoib et al (2013), studied the impact of nonfinancial rewards on employee performance in a case study of business institutes in Karachi. The research was conducted on 217 employees by using questionnaires from nine universities. They concluded that there is no significant relationship between work-life balance and employee performance with a beta value of 0.430 which is greater than 0.05 and it is consistent with the finding of this study. In this study, work-life balance showed a statistically insignificant effect on employee performance and the reason is as we observe from the demographic characteristics of the respondent most of the employees are

single and found in the young age group, this implies that there is low-level of imbalance or conflict between work activities and non-work activities. The study of martins' et al. (2002) also confirms that individuals who are single and young experience low work-life conflict than married employees.

#### Hypothesis 5

H1; 5 Training has a positive and significant effect on employee performance

Results discussion; as table 4.14 depicts, training has a positive and significant effect on employee performance with a beta value of 0.169 and p-value of 0.004 which is less than 0.05. This implies that the other explanatory variable remains constant if the mean score value of training increase by 1 unit on average the mean score value of employee performance increase by 0.169 unit and the relationship is statistically significant at a 5% significance level.

Decision; the researcher rejects the null hypothesis and accepts the ed directional hypothesis that means; training has a significant effect on employee performance. This shows that employees get on-the-job as well as off-the-job training identified based on skill gaps and evaluated after and before training this will lead to equivalent improvement in their job performance.

Other researchers finding; in the study of Afroz (2018), on the effect of training on employee performance a study in the banking sector, tangail Bangladesh, showed that training has a positive and significant impact on employee performance, which is in line with the finding of this research.

#### Hypothesis 6

H1; 6 Workload has a negative and significant effect on employee performance.

Results discussion; the result of multiple regression as presented in table 4.14 above revealed that, work load has negative significant effect on employee performance with a beta value of -0.169 and p-value of 0.001 which is less than 0.05. This shows that, other explanatory variable remain constant, if the mean score value of work over load increase by 1 unit, on average the mean score value of employee performance decrease by 0.169 unit and the relationship is statistically significant at 5% significance level.

Decision; the researcher rejects the null hypothesis and accepted the directional hypothesis that means: work load has significant effect on employee performance. This implies that, when work is evenly distributed, physically manageable and workers get sufficient break in their job, this will lead to equivalent improvement in their performance.

Other researchers finding; the research finding of kaleem et al (2012), which is titled —the effect of work over load on employee performance —that is conducted in Pakistan water and power development authority indicate that: work overload has significant negative effect on employee performance, which is consistent to the finding of this research. Ali et al (2013) also concluded in their research that work overload has a significant negative effect on employee performance.

#### Hypothesis 7

H1; 7 Discrimination has negative and significant effect on employee performance.

Results discussion: furthermore, the results of table 4.14 showed that discrimination has significant negative effect on employee performance with a beta value of (-.137) and p-value (0.002) which is less than 0.05. This shows that, other explanatory variable remain constant, if the mean score value

of discrimination increase by 1 unit on average the mean score value of employee performance decrease by 0.137 unit and the relationship is significant at 5% significance level.

Decision; the researcher rejects the null hypothesis and accepted the directional hypothesis: this implies that, when discrimination based on gender, age, religion and ethnicity increases, the performance of employee reduces drastically.

Other researchers finding: the research finding of Alagah et al (2017), which is titled —the discrimination and employee performance that is conducted in Nigeria food and beverage

sector indicates that: discrimination has negative significant effect on employee performance, which is similar to the finding of this research. Omoh et al (2015) also concluded that discrimination has significant negative impact on employee performance.

Generally, from the results, all work environmental variables except work life balance and democratic leadership style used in the study had greatest impact in improving employee performance. The result of this finding is summarized in table4.16

**Table 10.** Summary of the actual and expected sign of explanatory variables on dependent variable

No.	Explanatory variables	Expected sign and impact	Actual sign and impact	Result
1	Physical environment	Positive and significant	Positive and significant	Supported
2	Reward	Positive and significant	Positive and significant	Supported
3	Democratic Leadership style	Positive and significant	Positive and insignificant	Not Supported
4	Work life balance	Positive and significant	Negative and insignificant	Not Supported
5	Training	Positive and significant	Positive and significant	Supported
6	Work overload	Negative and significant	Negative and significant	Supported
7	Discrimination	Negative and significant	Negative and significant	Supported

## 4. Summary and Conclusion

### 4.1. Summary of Findings

The objective of the study was to investigate and analyze the impact of working environment on employee performance using major factors of working environment physical environment, Reward, democratic leadership style, work life balance, training, work load and discrimination. The research was undertaken in 11 factories found in Bole lemi Industrial Park. The study was conducted using questionnaires to the target population of 14,030 operational employees: out of 315 sampled employees 298 of them responded properly. Furthermore, the research is analyzed by using statistical package for social science version 25.

The descriptive statistics of the variables revealed that, most of the employees agreed with democratic leadership style with a cumulative mean value of 3.55 and 0.907 standard deviation, training with a mean value of 3.49 and 1.083 standard deviation, physical environment scored mean value of 3.47 and 0.997 standard deviation and employee performance with a cumulative mean and standard deviation (3.97 and 1.150) respectively While employee on other variables agreed work life balance (3.33 and 1.095), discrimination (3.02 and 1.149) mean and standard deviation respectively. However, work load scored mean value of 2.39 and 1.100 standard deviation; reward scored a mean value of 2.63 and 1.100 standard deviation.

Pearson product moment correlation coefficient results showed a significant positive relationship between physical environment, reward, democratic leadership style, work life balance, training and employee performance while negative significant relationship is found between workload, discrimination and employee performance. The finding

further revealed that, strong relationship is found between physical environment, reward, democratic leadership style, work life balance, training, and workload and employee performance. Moderate relationship is revealed between discrimination and employee performance.

The model summary of multiple regression revealed that 60.2% of the variation in employee performance is explained by seven factors of working environment included in the study. The remaining 39.9% is explained by other variable that is not included in the model. The Anova table also revealed that, the constructed model is statistically significant even at 1% significance level. The coefficient table also indicates that physical environment has high impact on employee performance with a beta value of (.388), followed by reward (.179), training (.169), workload (-.169), discrimination (-.137), democratic leadership style (.114) and work life balance (-.009). Moreover, from the finding of this study, coefficient table indicate that physical environment, reward and training has positive and significant impact on employee performance while discrimination and workload showed negative and significant impact on employee performance. However, work life balance showed negative insignificant effect, and democratic leadership style has positive but statistically insignificant impact on employee performance.

### 4.2. Conclusion

The regression output revealed that Physical environment has positive and statistically significant impact on employee performance. The correlation analysis also confirmed positive and significant relationship. From this it was concluded that as suitability of physical working environment increase it lead to correspondent increase in their performance.

The coefficient of reward variable in the model is positive and statistically significant at 5% significance level. Correlation analysis also reveals that, there is significant and positive relationship between reward and employee performance. Thus, an increase in reward result in dramatically increased employee performance.

Democratic Leadership style has positive relationship with employee performance; however the regression output reveals that it has positive impact and statistically insignificant. As such, it has been concluded that leadership style has low impact on employee performance.

Work life balance found to have a positive and significant relationship with employee performance. However, the coefficient table revealed it has negative impact and statistically insignificant. Therefore, work life balance has a little impact on employee performance.

Regarding training, the coefficient table showed that, the performance of employee increase when training increase. Thus, training has positive and statistically significant impact at 5% significance level. Correlation analysis also revealed positive and significant relationship. The higher workers get training tends to have increased performance.

Regarding workload, the coefficient table showed that it has negative impact and statistically significant at 5% significance level. The correlation analysis also reveals negative and statistically significant relationship. From this, it was concluded that when employees overworked, this result in poor performance of employees, as they take work as burden and start losing interest.

The regression output of discrimination showed that it has negative and significant impact on employee performance. Correlation analysis also reveals negative and significant relationship. Thus, higher discrimination at work place results in equivalent decrease on employee performance.

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