The Effect of Work Environment, Motivation, and Leadership on Employee Performance with Employee Engagement as Mediating Variable

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ABSTRACT

Performance appraisal is a major factor in company development, so companies can assess the level of achievement of the vision and mission, business performance appraisal, manager appraisal, cross-departmental assessment, and assessment of all employees in the company. This assessment is intended to predict the company's future expectations. The purpose of this study is to analyze and determine which factors affect employee performance in the workplace. This research is conducted at one of the construction services companies where the number of skilled employees continues to decrease, and the company has experienced a decline in achievement of Key Performance Indicators (KPI) from 2015 to 2018. The analysis technique used in this study uses the Structural Equation Modeling method (SEM) with the help of SmartPLS (Partial Least Square) software. The results of the analysis show that the work environment variable (X1) has a positive and significant relationship to the employee engagement variable (Y1) and has a positive but not significant effect on the Employee Performance variable (Y2), the motivation variable (X2) has a positive and a significant influence on the employee engagement variable (Y1) and employee performance (Y2). The leadership variable (X3) has a positive but not significant effect on the employee engagement variable (Y1) and has a positive but not significant effect on the employee performance variable (Y2). The employee engagement variable (Y1) as a mediating variable has a positive and significant effect on the employee performance variable (Y2). The results also show that the employee engagement variable has a simultaneous influence of 56.8% which can be explained by the variables of work environment, motivation, and leadership. Employee performance variables have a simultaneous effect of 60.5% which can be explained by the variables of work environment, motivation, leadership, and employee engagement.

Keywords: Key Performance Indicator, Construction, Structural Equation Modelling

1. INTRODUCTION

As the first element of the company, people play a decisive role in the development of the company and how to use human resources to build an efficient team. It has become an important topic in current enterprise management research. Human Resource Management (HRM) is the process of acquiring, training, appraising, and compensating employees, and of attending to their labor relations, health and safety, and fairness concerns (Dessler, 2020). HRM is also the key that determines the development of the company.

This research is conducted at a company of household electronics manufacturing in Indonesia. The company had 355 employees in 2018, including 45 office employees, 310 field employees, 99 skilled, and 256 unskilled employees.

Table 1. Number of Employees

<table>
<thead>
<tr>
<th>Employee</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>46</td>
<td>43</td>
<td>50</td>
<td>45</td>
</tr>
<tr>
<td>Field</td>
<td>248</td>
<td>275</td>
<td>297</td>
<td>310</td>
</tr>
<tr>
<td>Skilled</td>
<td>115</td>
<td>108</td>
<td>104</td>
<td>99</td>
</tr>
<tr>
<td>Unskilled</td>
<td>179</td>
<td>210</td>
<td>243</td>
<td>256</td>
</tr>
<tr>
<td>Total</td>
<td>294</td>
<td>318</td>
<td>347</td>
<td>355</td>
</tr>
</tbody>
</table>

Source: The Company (2019)

Table 1 shows the number of skilled employees continues to decrease over time. The reduced number of skilled employees can have an impact on less effective performance.

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Performance appraisal is a tool for companies to achieve goals and strategies (Johari et al., 2012). Performance appraisal can be seen in the Key Performance Indicator (KPI) reports from 2015-2018, shown in Figure 1. KPI is a quantitative indicator used to measure staff work performance which is an important part of the performance plan (Marr, 2014). KPIs are also useful to help monitor and improve company performance.

![Figure 1. Achievement of Key Performance Indicator (%)](image)

Figure 1 represents the achievement of KPI which has decreased from 2015-2018. The company does not meet expectations by the company due to a lack of enthusiasm in carrying out its duties. To verify employee performance, researchers conducted a preliminary survey of employee performance. The initial survey of this research was distributed to 100 employees. The survey results show that 58% of employees have low performance and 42% of employees have high performance. Employees with high performance are more conducive to company development. Performance is basically what employees do or do in contributing to the company (Pawirosumarto, Sarjana and Gunawan, 2017). Therefore, good performance must be following the company's work standards. Companies must be able to improve the factors that affect employee performance, including leadership, work motivation, work environment, and employee engagement.

To prevent the causes of losses due to non-optimal employee performance, the Structural Equation Modeling (SEM) method is one of the techniques of choice because it can be used to measure the influence of variables and test relatively complex relationships. There are two sub-models, namely the measurement model and the structural model. The measurement model shows how the observed variables represent the latent variables to be measured, while the structural model describes the strength of the estimate between variables. The independent variables influence or cause changes in the emergence of the dependent variable (Tannady, Erlyana and Nurprihatin, 2019).

### 1.1. Work Environment

The quality of work depends on safe and healthy working conditions (Tannady, Andry and Nurprihatin, 2020). Organizations can outperform their competitors by providing a creative environment for their employees and opportunities to think and act differently (Ismail, Iqbal and Nasr, 2019). For example, higher educational institutions are searching for new ways to attract and retain faculties to deal with such a shortage of faculty and a competitive work environment (Nazir and Islam, 2017).

### 1.2. Motivation

Motivation is the existence of autonomy support, which means that organizational managers pay attention to every decision that is meant to lead to the welfare of employees (Paais and Pattiruhu, 2020). Motivation has two important insights that are psychological and managerial (Tannady, Erlyana and Nurprihatin, 2019). Many techniques have been implemented to increase motivation. Increasing motivation by the inherently rewarding aspects of a task is called natural reward (Breevaart et al., 2016).

### 1.3. Leadership

Leadership has been considered in studies about organizational and personal factors (García-Sierra, Fernández-Castro and Martínez-Zaragoza, 2016). Leaders can provide coaching to subordinates and promote subordinates’ levels of energy and mental resilience (Gupta, Singh and Bhattacharya, 2017). Sometimes, a company invites an external trainer as a coach to subordinates. In this case, the participation of the leaders is important. Leaders who participated in the training had a positive impact on followers’ performance and professional development compared to leaders in the control group who did not receive the training (Schmitt, den Hartog and Belschak, 2016).
1.4. Employee Engagement

Employee engagement refers to employees’ physical, cognitive, and emotional input into the work (Sun and Bunchapattanasakda, 2019). Employee engagement was significantly related to better organizational performance, higher satisfaction, profitability, productivity, and a reduction in employee turnover (Ismail, Iqbal and Nasr, 2019).

The organization has the responsibility to provide for the needs of employees by providing proper training and building a meaningful work environment (Osborne and Hammoud, 2017). In turn, employees have the responsibility to provide a meaningful contribution to the organization (Osborne and Hammoud, 2017).

A study adopted a motivation perspective and proposed an integrated theoretical model, arguing that transformational leaders can enhance members’ task performance and helping behaviors by fostering their work engagement (Lai et al., 2020). When it comes to the shortage of employees, the employee should be engaged so that they are motivated (Sendawula et al., 2018).

A previous study showed the relationship between leadership and work engagement provided strong evidence of the discriminant validity of the constructs (Gupta, Singh and Bhattacharya, 2017). In other words, leadership was positively related to work engagement (Gupta, Singh and Bhattacharya, 2017), specifically when it comes to transformational leadership (Schmitt, den Hartog and Belschak, 2016). Transformational leadership skills can be developed through education, training, and coaching interventions that are based on action-oriented methods and are aimed at fostering self-reflection in supervisors (Schmitt, den Hartog and Belschak, 2016).

1.5. Employee Performance

High-performance organizations must develop a work environment that fosters creativity to reap the benefits of engagement in terms of increased job performance (Ismail, Iqbal and Nasr, 2019). The competitive work environment has a linkage with the organization’s goals and objectives (Gupta and Sharma, 2016).

Motivation shapes employees’ behavior, it is critical that transformational leaders understand how to enhance members’ performance through motivation (Lai et al., 2020). An organization should have proper salary systems in place to motivate the employees to work in the firm (Chandani et al., 2016).

Leaderships may not have a direct relationship with the outcomes produced (Gupta, Singh and Bhattacharya, 2017). Despite this finding, leaders may promote improvements in leadership behaviors and a context of optimism and self-efficacy as a way of increasing work engagement (García-Sierra, Fernández-Castro and Martínez-Zaragoza, 2016).

Research has been developed to explore the potential mediator in the relationship between employee engagement and employee performance (Ismail, Iqbal and Nasr, 2019). However, this study tries to explore employee engagement as the mediating variable. Employee performance was proposed as the consequence of employee engagement (Nazir and Islam, 2017). Employee engagement is found to have a positive relationship with both individual and organizational performance (Sun and Bunchapattanasakda, 2019).
Figure 2. Research Paradigm

Figure 2 illustrates the conceptual framework. In this study, the independent variables are work environment (X1), motivation (X2), and leadership (X3). In this study, the mediating variable is employee engagement (Y1). The dependent variable is the variable that is influenced or affects the independent variable and the mediating variable (Hair et al., 2019). In this study, the employee performance variable (Y2) is the dependent variable. This research is processed using SmartPLS software to obtain the predictive value of the variable (Nirwana, 2018).

2. METHODS

The method used in this study is the Partial Least Squares Structural Equation Modeling (PLS-SEM) method using the SmartPLS software. PLS-SEM was used to measure whether market orientation, entrepreneurial orientation, and marketing capabilities affected the business performance (Christian et al., 2021). Data analysis using PLS-SEM includes the following stages (Hair et al., 2019):

1. Stage 1: Defining research objectives and selecting constructs.
2. Stage 2: Designing a study to produce empirical results.
3. Stage 3: Specifying the measurement and structural models.
   a. Evaluation of the Outer Model (Measurement Model), performs a validity test using the convergent validity and discriminant validity tests. Next, perform a reliability test using the composite reliability test, average variance extracted (AVE), and Cronbach's Alpha.
   b. Evaluation of the Inner Model (Structural Model), conducting the Q² predictive relevance test (to find out whether the model can predict the endogenous variables strongly), the goodness of fit, significance (partial effect test), $f^2$ (large partial effect), $R^2$ (simultaneous influence), and mediation test (indirect effect).
5. Stage 5: Assessing the structural model.
6. Stage 6: Advanced analyses with PLS-SEM.

3. RESULTS AND DISCUSSION

3.1. Research Hypothesis

Figure 3 represents the conceptual framework of the research paradigm. This study measures the relationship between variables using a significant level of 95% and an error rate of 5%, and the t-table value is 1.96.
The hypotheses of this research are as follows:

1. Hypothesis 1:
   a. $H_0 = \text{There is no positive and significant relationship between work environment and employee engagement.}$
   b. $H_a = \text{There is a positive and significant relationship between the work environment and employee engagement.}$

2. Hypothesis 2:
   a. $H_0 = \text{There is no positive and significant relationship between motivation and employee engagement.}$
   b. $H_a = \text{There is a positive and significant relationship between motivation and employee engagement.}$

3. Hypothesis 3:
   a. $H_0 = \text{There is no positive and significant relationship between leadership and employee engagement.}$
   b. $H_a = \text{There is a positive and significant relationship between leadership and employee engagement.}$

4. Hypothesis 4:
   a. $H_0 = \text{There is no positive and significant relationship between work environment, motivation, and leadership together with employee engagement.}$
   b. $H_a = \text{There is a positive and significant relationship between work environment, motivation, and leadership together with employee engagement.}$

5. Hypothesis 5:
   a. $H_0 = \text{There is no positive and significant relationship between work environment and employee performance.}$
   b. $H_a = \text{There is a positive and significant relationship between the work environment and the performance of employees.}$

6. Hypothesis 6:
   a. $H_0 = \text{There is no positive and significant relationship between motivation and employee performance.}$
   b. $H_a = \text{There is a positive and significant relationship between motivation and employee performance.}$

7. Hypothesis 7:
   a. $H_0 = \text{There is no positive and significant relationship between leadership and employee performance.}$
   b. $H_a = \text{There is a positive and significant relationship between leadership and employee performance.}$

8. Hypothesis 8:
   a. $H_0 = \text{There is no positive and significant relationship between employee engagement and employee performance.}$
   b. $H_a = \text{There is a positive and significant relationship between employee engagement and employee performance.}$

9. Hypothesis 9:
   a. $H_0 = \text{There is no positive and significant relationship between work environment, motivation, leadership, and employee engagement together with the performance of employees.}$
   b. $H_a = \text{There is a positive and significant relationship between work environment, motivation, leadership, and employee engagement together with the performance of employees.}$
3.2. Operationalization

Table 2 describes the variables and indicators of the study. There are 5 (five) variables and 22 indicators in total.

Table 2. Operationalization of Construct

<table>
<thead>
<tr>
<th>Variables</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| Work Environment (X1) | 1. Work atmosphere.  
                                      2. Relationships with coworkers.  
                                      3. Relationship between Subordinates and leaders.  
                                      4. Availability of work facilities. |
| Motivation (X2)        | 1. Compensation.  
                                      2. Working conditions.  
                                      3. Attitudes between colleagues.  
                                      4. Promotion.  
                                      5. Training. |
| Leadership (X3)        | 1. Having responsibility.  
                                      2. Supporting company goals.  
                                      3. Giving suggestions.  
                                      4. Be appreciative.  
                                      5. Provide inspiration. |
| Employee Engagement (Y1) (Schaufeli and Bakker, 2004) | 1. Vigor.  
                                      2. Dedication.  
                                      3. Absorption. |
| Employee Performance (Y2) | 1. Quantity.  
                                      2. Quality.  
                                      3. Punctuality.  
                                      4. Effectiveness.  
                                      5. Independence. |

Figure 4 is the result obtained from the SmartPLS software for convergent validity. In the model estimation results, each indicator has met the terms and conditions of the loading factor (>0.7). Therefore, all indicators in this study are valid and feasible to use.

Figure 5 illustrates the estimation results based on PLS bootstrapping in this study. The results shown in Table 3 are the calculation of bootstrapping with PLS software using a significant level of 0.5%.

Results obtained in Table 3 shows various hypotheses related to the significant relationship between variables have been obtained as follows:

1. The p-value of the impact of the leadership variable on employee engagement (L → EE) is 0.176 where the original sample has a positive sign. The p-value of leadership on employee engagement (L → EE) is positive but does not meet the required p-value (<0.05). Therefore, H0 is accepted, and Ha is rejected, which means leadership has a positive but not significant effect on employee engagement. This indicates that a better leadership may have a positive effect on employee engagement, and vice versa.

2. The p-value of the impact of the leadership variable on employee performance (L → EP) is 0.018 where the original sample has a positive sign. The p-value of leadership on employee performance (L → EP) is positive and meets the required p-value (<0.05). Hence, H0 is rejected, and Ha is accepted, which means leadership has a positive and significant effect on the performance of employees. This indicates that better leadership will also have a good effect on the performance of employees in the company, and vice versa.

3. The p-value of the impact of the employee engagement variable on employee performance (EE → EP) is 0.000 where the original sample has a positive sign. The p-value of employee engagement on employee performance (EE → EP) is positive and meets the required p-value (<0.05). Therefore, H0 is rejected, and Ha is accepted, which means the employee engagement has a positive and significant effect on the performance of employees. This indicates that the better the employee engagement the better the performance of employees in the company, and vice versa.

4. The p-value of the impact of the work environment variable on employee engagement (WE → EE) is 0.000 where the original sample has a positive sign. The p-value of the work environment on employee engagement (WE → EE) is positive and meets the required p-value (<0.05). Therefore, H0 is rejected, and Ha is accepted, which means the work environment has a positive and significant effect on employee engagement. This indicates that the better the working environment the better the employee engagement in the company, and vice versa.
Figure 4. PLS Model Results (Algorithm)
Figure 5. Estimation Model Result (Bootstrapping)

Table 3. Significance Test Result

<table>
<thead>
<tr>
<th>Path</th>
<th>Original Sample (O)</th>
<th>Sample Mean (M)</th>
<th>Standard Deviation (STDEV)</th>
<th>t Statistics</th>
<th>p-value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L → EE</td>
<td>0.095</td>
<td>0.098</td>
<td>0.071</td>
<td>1.338</td>
<td>0.176</td>
<td>Not Significant</td>
</tr>
<tr>
<td>L → EP</td>
<td>0.216</td>
<td>0.213</td>
<td>0.091</td>
<td>2.374</td>
<td>0.018</td>
<td>Significant</td>
</tr>
<tr>
<td>EE → EP</td>
<td>0.509</td>
<td>0.506</td>
<td>0.105</td>
<td>4.848</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>WE → EE</td>
<td>0.436</td>
<td>0.439</td>
<td>0.110</td>
<td>3.964</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>WE → EP</td>
<td>0.005</td>
<td>0.015</td>
<td>0.143</td>
<td>0.035</td>
<td>0.975</td>
<td>Not Significant</td>
</tr>
<tr>
<td>M → EE</td>
<td>0.339</td>
<td>0.334</td>
<td>0.102</td>
<td>3.324</td>
<td>0.001</td>
<td>Significant</td>
</tr>
<tr>
<td>M → EP</td>
<td>0.190</td>
<td>0.183</td>
<td>0.099</td>
<td>1.919</td>
<td>0.057</td>
<td>Not Significant</td>
</tr>
<tr>
<td><strong>Indirect Effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L → EE → EP</td>
<td>0.049</td>
<td>0.050</td>
<td>0.038</td>
<td>1.289</td>
<td>0.207</td>
<td>Not Significant</td>
</tr>
<tr>
<td>WE → EE → EP</td>
<td>0.222</td>
<td>0.222</td>
<td>0.072</td>
<td>3.083</td>
<td>0.002</td>
<td>Significant</td>
</tr>
<tr>
<td>M → EE → EP</td>
<td>0.172</td>
<td>0.170</td>
<td>0.063</td>
<td>2.730</td>
<td>0.007</td>
<td>Significant</td>
</tr>
</tbody>
</table>
5. The $p$-value of the impact of the work environment variable on employee performance (WE $\rightarrow$ EP) is 0.975 where the original sample has a positive sign. The $p$-value of the work environment on employee performance (WE $\rightarrow$ EP) is positive but does not meet the required $p$-value ($<0.05$). Hence, $H_0$ is accepted, and $H_a$ is rejected, which means the work environment has a positive but not significant effect on employee performance. This indicates that a better working environment is likely to have a good effect on the performance of employees in the company, and vice versa.

6. The $p$-value of the impact of the motivational variable on employee engagement (M $\rightarrow$ EE) is 0.001 where the original sample has a positive sign. The $p$-value of motivation on employee engagement (M $\rightarrow$ EE) is positive and meets the required $p$-value ($<0.05$). Therefore, $H_0$ is rejected, and $H_a$ is accepted, which means that motivation has a positive and significant effect on employee engagement. This indicates that better motivation of the employees can have a good effect on employee engagement in the company, and vice versa.

7. The $p$-value of the impact of the motivational variable on employee performance (M $\rightarrow$ EP) is 0.057 where the original sample has a positive sign. The $p$-value of motivation on employee performance (M $\rightarrow$ EP) is positive but does not meet the required $p$-value ($<0.05$). Hence, $H_0$ is accepted, and $H_a$ is rejected, which means that motivation has a positive but not significant effect on employee performance. This indicates that the better the motivation is likely to have a good effect on the performance of employees in the company, and vice versa.

8. The indirect effect of leadership on employee performance mediated by employee engagement (L $\rightarrow$ EE $\rightarrow$ EP) has a $p$-value of 0.207. Because the $p$-value is larger than 0.05, then $H_0$ is rejected and $H_a$ is accepted. It can be concluded that the employee engagement variable cannot significantly mediate the indirect influence of the leadership variable on employee performance. This explains that better superior leadership will have a direct impact on employee performance without having to be mediated by employee engagement variables.

9. The $p$-value of the indirect effect of the work environment variable on the employee performance variable mediated by the employee engagement variable (WE $\rightarrow$ EE $\rightarrow$ EP) has a $p$-value of 0.002. Because the $p$-value is less than 0.05, $H_0$ is accepted and $H_a$ is rejected. It can be concluded that the work environment variable has a significant effect when mediated by the employee engagement variable. This explains that increasing the work environment will increase employee engagement which also has an impact on increasing employee performance.

10. The $p$-value of the indirect influence of the motivational variable on the employee performance variable mediated by the employee engagement variable (M $\rightarrow$ EE $\rightarrow$ EP) has a $p$-value of 0.007. Because the $p$-value is less than 0.05, $H_0$ is accepted and $H_a$ is rejected. It can be concluded that the motivation variable has a significant effect when mediated by the employee engagement variable. This explains that increasing motivation will increase employee engagement which also has an impact on increasing employee performance.

4. **CONCLUSION**

The work environment has a positive and significant effect on employee engagement. This indicates that a better working environment can also have a good effect on employee engagement, and vice versa.

Motivation has a positive and significant effect on employee engagement. This indicates that better motivation of the employees can also have a good effect on employee engagement, and vice versa.

Leadership has a positive but not significant effect on employee engagement. Because the $p$-value is larger than 0.05 with a significant test result of leadership on employee engagement is 0.176 (does not meet the required $p$-value), which means that leadership has a positive but not significant effect on employee engagement. This also indicates that better leadership may have a positive effect on employee engagement, and vice versa.
Together, the work environment, motivation, and leadership can influence employee engagement by 56.8%. The work environment has a positive but not significant effect on employee performance. Because the p-value is larger than 0.05 with a significant test result of the work environment on employee performance of 0.119 (does not meet the required p-value), which means that leadership has a positive but not significant effect on employee performance. This indicates that a better working environment may have a positive effect on the performance of employees, and vice versa.

Motivation has a positive and significant effect on employee performance. This indicates that better motivation of the employees can also have a good effect on the performance of employees, and vice versa.

Leadership has a positive and significant effect on employee performance. This indicates that better leadership can also have a good effect on the performance of employees, and vice versa.

Employee engagement has a positive and significant effect on employee performance. This indicates that better employee engagement can also have a good effect on the performance of employees, and vice versa. Together, the work environment, motivation, leadership, and employee engagement can influence employee engagement by 60.5%.

REFERENCES


