

# Effect of Implementation of E-Procurement on Employee Performance at Procurement Department of PT Indonesia Asahan Aluminium (Persero) Moderated by Supervision Variable

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## ABSTRACT

The purpose of research is to analyze the effect of the implementation of e-procurement to employee performance at procurement department of PT Indonesia Asahan Aluminum (Persero) with supervision moderation variables. The populations in this study were all employees of the Department of procurement of goods and services INALUM, amounting to 49 employees, using the census technique where the entire population was used as research samples. It was collected through questionnaire, interviews and documentation studies. Questionnaire are calculated with a Likert scale measurement unit, and ZAHR are processed using simple linear regression analysis methods and moderating regression analysis (moderating regression analysts), using the SPSS program (statistical product and service solution). The results of the study show that the implementation of E-Procurement has a positive and significant effect on employee performance, the better and more appropriate the implementation of E-Procurement can improve employee performance. The moderating test results prove that supervision cannot yet function as a moderating variable between the applications of E-Procurement to employee performance.

**Keywords:** *Implementation of E-Procurement, Supervision and Performance*

## INTRODUCTION

PT Indonesia Asahan Aluminum (Persero) or often called INALUM is now entering a new phase in an effort to realize a clean corporate governance system, namely by implementing the process of procurement of goods and services electronically (e-procurement). Through this e-procurement system, the process of procuring goods and services in INALUM is expected to be more transparent, effective and efficient. The socialization and training of prospective suppliers of goods and services as well as the procurement providers at INALUM has been carried out. This new system will certainly have an

impact on the performance achievements of its employees. With this new system, it is expected that employee performance can be improved.

Many factors can affect employee performance, including motivation, leadership, work environment, discipline, work culture, communication, commitment, position, information technology, education and training, compensation, job satisfaction, organizational support and many other factors. All of these factors have an effect, depending on the facts that actually occur, some are dominant and some are not (Wahyudi, 2006). But in this study, researchers will only conduct research on

the effect of the application of information technology (e-procurement) and training on procurement of the performance of the Department of Procurement employees at PT INALUM (Persero) which is moderated by supervision.

Every organization or company needs to invest in the smooth operation of the company's operations, for the development of the company and especially for things that play a role in improving performance. According to Mardiasmo (2009), technology investment decisions are needed to support the implementation of programs, activities, and functions that are policy priorities. Expenditures for investment must receive greater attention than routine expenditure, because investment expenditure has a long-term effect.

E-procurement is a form of implementation of the concept of e-governance in the field of procurement. E-procurement is the use of information technology, especially web-based applications in the stages of the process of procurement of goods and services. There are two forms of e-procurement that have been implemented and developed in Indonesia, namely electronic auctions (e-tendering) and e-purchasing. E-tendering is used for the procurement of goods / services carried out through auctions, while e-purchasing is used for procurement carried out through negotiations.

The implementation of e-procurement is expected to increase competition in the procurement of goods / services and reduce corporate spending, in other words increasing efficiency. Walker and Brammer (2012) concluded that e-procurement would enable better communication between buyers and providers so as to facilitate the form of manual procurement with better information exchange between the two parties. In addition, the use of sisteme-procurement can help provide more new ways easier than the procurement operation by manual method.

In its implementation, the system of procurement of goods and services electronically (e-procurement) in INALUM has not been optimal. This is because INALUM is still new in implementing this e-procurement system which is since the beginning of February 2016. So that the features in the e-procurement system must still be developed and equipped to optimize the functions of the e-procurement system used. However, this e-procurement system has provided convenience and many benefits to procurement operators in INALUM in carrying out the process of procuring goods and services in INALUM. The implementation of the e-procurement system that has not been optimal can be seen from the achievement of outstanding procurement items in August 2017 to August 2018, which on average are not reached from the set targets. As explained in the graph 1.1 below that in August to September 2017 the actual achievement of the outstanding procurement items is still close to the target set. Then in October and November 2017 the target is increased and can be achieved. But in December 2017 to August 2018, when the target is increased again, the actual achievement of the outstanding amount of this procurement item cannot be achieved. This phenomenon attracts the author to conduct research related to the effect of the implementation of e-procurement at PT Indonesia Asahan Aluminium (Persero).

The implementation of e-procurement at INALUM is expected to improve the performance of the procurement process providers. However, this will not be optimal if it is not supported by reliable human resources. The company is expected to be able to improve human resources by conducting appropriate training to its employees in carrying out their work. Training helps shape the performance of an employee in carrying out his work. Considering the importance of training work for company employees, every company should conduct employee development through optimal training. This is in addition

to directing employees to carry out their duties properly and correctly, so that employees can follow the development of science and technology that will be applied in the company. With increasing knowledge, the abilities and skills of each employee will also increase. This will have an impact on improving the quality of work which ultimately results in the achievement of high employee work performance. Problems that are seen in the Company relating to training issues include the system or method of training employees who are less able to contribute to the work and performance of employees. This is not in accordance with what is expected by the company.

"Ivancevich (2010: 154) expressed his understanding of training and development (education and training) as" a systematic process to change employee behavior directed towards achieving organizational goals ". Training is related to current job skills and abilities. The

orientation is now and helps employees master specific skills and abilities to succeed at work. Whereas according to Fajar (2013: 100), training is a learning process aimed at employees so that the implementation of work is satisfactory.

According to Hariandja (2002: 169), the reason for implementing training for employees is that newly recruited employees often do not understand correctly how to do work, changes in the work environment and workforce, increase the competitiveness of companies and improve employee productivity, and adjust employees with existing regulations.

Another problem is the training carried out related to the implementation of e-procurement for procurement staff employees is also not optimal. This can be seen from the timing of the training which is still too short and the number of employees participating in the training is still too small as shown in table 1.1 below.

**Table 1.1. Implementation of E-Procurement Training**

| Training Activities   | Time  | Jumlah Peserta | Klasifikasi |
|---|-------|----------------|-------------|
| Explanation of procurement administration ( <i>flow chart of e-procurement</i> )  | 3 day | 4 person       | Good        |
| Manufacturing procedure <i>e-procurement plan</i>   | 3 day | 4 person       | Good        |
| Implementation of the implementation of procurement of goods / services with the government <i>e-procurement</i> and <i>e-catalog</i> | 3 day | 6 person       | Good        |

Source: INALUM Procurement Section, 2017

The data above shows that the implementation of the training has not been carried out routinely (less than 1 month) related to the implementation of e-procurement, even though the results of training scores are classified as good but need to be carried out routinely and thoroughly so that the implementation of e-procurement can support the performance of corporate organizations. However, the number of employees participating in the training is still small so that this results in many procurement employees who have not received training related to the use of this e-procurement system.

Good performance is certainly supported by other factors such as supervision by the organization or company to improve employee performance. With the

supervision of the company, it is expected that employees can also comply with the rules set by the Company. Supervision is an important factor in influencing the performance and work discipline of employees because it is a means to control activities within a company / organization. Through this supervision, employees can be monitored properly so that it will have an impact on achieving maximum employee performance (Marpaung and Agustin, 2013).

Supervision in the implementation of e-procurement at PT Indonesia Asahan Aluminum (Persero) includes control activities on system integration, availability of technical procedures, involvement of supervisors in stages, purchase prices obtained, availability of information on

goods / services providers and security of procurement systems. Supervision of the implementation of e-procurement training includes control of training materials, training methods, training aids and instructor skills. The supervision of the implementation of e-procurement and training is expected to be able to optimize the implementation of e-procurement and training so that it will have an impact on improving the performance of employees in the procurement department of PT Indonesia Asahan Aluminium (Persero).

### Hypothesis

Based on the research background and the identification of the relationships between variables, the research hypothesis is as follows:

1. The implementation of E-procurement has a positive and significant effect on the performance of Employees in INALUM
2. Supervision moderates the relationship between the implementation of e-procurement and the performance of employees at PT INALUM.

## MATERIALS AND METHODS

### Method of Collecting Data

This research is quantitative descriptive type in the form of explanatory research, namely research that will prove the relationship between independent variables, namely e-procurement (X), supervision (Z) with dependent variables namely variables performance (Y) (Sugiyono, 2011).

Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics set by researchers to be studied and then conclusions drawn (Sugiyono, 2011). The populations in this study were all 49 INALUM (Persero) procurement department employees.

Sampling in this study used a census technique in which all population units were sampled because the numbers were slightly <100.

The data used in this study are Primary Data and Secondary Data. Primary data is data that is obtained or collected directly from the data source through interviews (interviews) and a list of statements (questionnaire) given to respondents who were sampled. Secondary data is data that supports primary data obtained through documentation studies of PT INALUM (Persero).

## RESULT

### Normality Test

Data normality test is very important in parametric statistical analysis so that the regression model is free from prediction errors. The SPSS Test results for normality of data can be seen as follows:

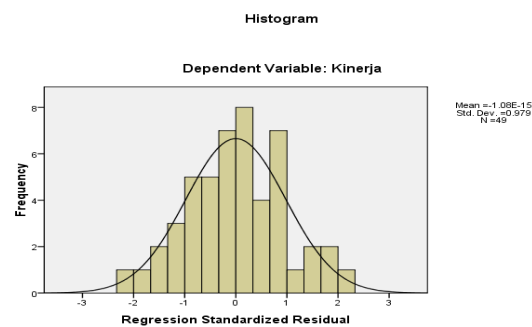


Figure 4.7. Histogram graph  
Source: results of 2018 primary data processing

Based on the histogram graph image in Figure 4.7 it can be concluded that the data has been normally distributed. This can be seen in the data that follows the diagonal line forming a bell in the middle.

Normal P-P Plot of Regression Standardized Residual

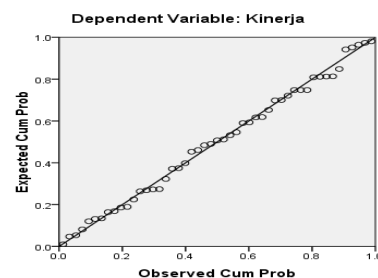


Figure 4.8. PP-Plots Curve

Based on the PP-Plots curve image in Figure 4.8 it can be concluded that the curve has

been normally distributed. This can be seen in the normal PP-Plots curve where scattered points approach the diagonal line.

### Partial Significance Test (t)

The results of testing t statistics (partial test) on the Application E-Procurement of Performance can be seen in table 4.10 below:

**Table 4.10. Statistical Test Results t - Partial Hypothesis**

| Model                          |                         | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|--------------------------------|-------------------------|-----------------------------|------------|---------------------------|-------|------|
|                                |                         | B                           | Std. Error | Beta                      |       |      |
| 1                              | (Constant)              | .583                        | 4.333      |                           | .135  | .894 |
|                                | Penerapan E_Procurement | .781                        | .100       | .752                      | 7.825 | .000 |
| a. Dependent Variable: Kinerja |                         |                             |            |                           |       |      |

Source: results of primary data processing 2018.

Based on Table 4.10 the results of testing the hypothesis the effect of the Application of E-Procurement on Performance obtained a significance value of 0,000 (Sig. <0.05) then H0 was rejected. This means that the Application of E-Procurement has a significant effect on the Performance of Employees of the INALUM procurement department of goods and services.

### Simple Linear Regression Model

Based on Table 4.10 the results of testing the hypothesis of the effect of the implementation of E-Procurement on Performance, a simple linear regression model can be formulated as follows:

$$Y = 0,583 + 0,781(X) + 0,434$$

Y = Performance

X = Implementation E\_Procurement

a = Constant of 0.583

b = Regression coefficient of 0.781

e = standard error of 0.434

Constant value of 0.583 means that if the implementation of E\_procurement still means that the employee increases or decreases, the company's performance is 58.3%.

Value of regression coefficient of 0.781 means that if the implementation of E\_procurement increases by 1%, the performance will increase as much as 78.1%, and vice versa.

Standard error value of 0.434 means that there are still other variables that can affect performance by 43.4%.

### Coefficient of Determination

Test Statistic coefficient of determination in this study the aim is to find out how far the ability of the model in explaining the variation of the dependent variable. The statistical test of the coefficient of determination can be seen in the following Table 4.14:

**Table 4.11. Coefficient of Determination**

| Model Summary                                      |                   |          |                   |                            |
|--|-------------------|----------|-------------------|----------------------------|
| Model  | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1  | .752 <sup>a</sup> | .566     | .557              | 1.55026                    |
| a. Predictors: (Constant), Penerapan E_Procurement |                   |          |                   |                            |

Source: results of primary data processing, 2018.

Table 4.11 shows that the R Square value is 0.566 or 56.6%, which means that the percentage effect of the independent variable (E-Procurement Application) on Performance is equal to the determination coefficient value or 56.6%. While the remaining 43.4% is influenced or explained by other variables not included in this research model.

### Test of the MRA Hypothesis

The testing of moderating regression analysis (Moderating Regression Analysis) aims to determine whether the variable Z is able to moderate the relationship of variable X to variable Y. The results of the regression testing are moderating. The condition of testing the moderating hypothesis is that the value of t count must be negative to absolute residual with significance <0.05. The results of the



residual test equation in this study can be seen in Table 4.12.

**Table 4.12. Moderating Residual Test**

| Model |            | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|-------|------|
|       |            | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant) | 3.231                       | 2.412      |                           | 1.339 | .187 |
|       | Kinerja    | -.047                       | .070       | -.097                     | -.669 | .507 |

a. Dependent Variable: AbS\_Res

Source: results of primary data processing, 2018.

Based on testing results moderating. then the residual test model can be formulated in the form of equations as follows:

$$|e| = 3.231 - 0.047(Y) + e$$

The decision-making criteria for the moderating process of Ghozali menurt (2010: 229) are: if the value of negative and significant coefficients can be concluded that the moderating variable. Based on the results of the residual test conducted it is known that the value of t count (-0.669) is greater than -t Table (-1.984) with a

significance of  $0.507 > 0.05$  with negative coefficient direction. it is concluded that the supervision variable has a negative influence on absolute residual values. But it is not significant that it can be concluded that the supervisory variable is not a moderating variable that moderates the relationship between the application of E\_Procurement and trainers to Performance. The results of the research hypothesis testing are summarized in the following Table 4.13:

**Table 4.13. Results of Testing Research Hypotheses**

| No             | Hypothesis   | Path coefficient | Sig.  | Conclusion |
|----------------|--|------------------|-------|------------|
| H <sub>1</sub> | The implementation of E-Procurement has a significant effect on the Performance of Employees of Inalum's procurement of goods and services departments | 0,247            | 0,001 | Accepted   |
| H <sub>2</sub> | Supervision is not a moderating variable that moderates the relationship between implementing E_Procurement on Performance                             | -0,047           | 0,507 | Rejected   |

Source: results of primary data processing, 2018.

## DISCUSSION

### The implementation of E-Procurement has a Positive and Significant Impact on Employee Performance

The test results provide empirical evidence that the application of E-Procurement has a positive and significant effect on performance where it proves the hypothesis is accepted. This means that the better the implementation of E-Procurement will improve the performance of employees of the Inalum procurement department of goods and services. This finding shows that employee performance is directly affected by the existing E-Procurement Application.

From the results of the analysis, it is clear that the Application of E-Procurement Inalum's goods and services procurement department has a positive and significant influence on the performance of its employees. So, if the management wants to improve performance, the implementation

of E-Procurement which plays an important role in the success of the organization in carrying out its various activities, especially seen in the performance of its employees.

However, there are some things that must be corrected related to the implementation of E-Procurement including the indicator Access to users in the e-Procurement system has standards or rules that are in accordance with technical procedures in the process of procurement of goods and services, there are respondents who answer less than 14.3%. This of course can be a note for management in the Procurement of Goods and Services in Inalum in the implementation of the E-Procurement implementation which shows that there are still respondents who provide an assessment that the use of e-Procurement systems does not yet have standards or rules that are in line with technical procedures so that they can slow down itself.

Specifically, the research findings concluded that the implementation of E-Procurement can improve performance. This finding is in line with the findings of Adimaja, (2011) which proves that there is a positive and significant influence between the variables of the Implementation of e-Procurement (X) on the variable Quality of Performance.

Septian (2014) shows the application of E-Procurement on procurement in the Yogyakarta City Government can be categorized as full e-procurement that affects performance. The variables that influence procurement performance include improving the competitiveness of an organization, reducing the need for labor and better utilization of staff.

### **Supervision is not a moderating variable that moderates the relationship between implementing E-Procurement on Performance**

The results of hypothesis testing using moderating analysis indicate that supervision has not been able to moderate the relationship between the Implementation of E-Procurement to Performance. It should be through the Implementation of E-Procurement that is supported by the capacity of adequate government organizations, good governance. Conversely, weaknesses in the implementation of E-Procurement is one reason for the low performance of employees if it is not implemented properly and correctly. Therefore, supervision is very important in implementing the E-Procurement implementation which is one of the main factors in managing human resources in an organization where with a good E-Procurement Implementation capacity and supported by high performance from employees it will impact on optimal performance so that the achievement of objectives can be realized.

The results of this study do not support the results of the study of Januar an Devi (2016) which proves that supervision can be used as a moderating variable for the

implementation of E-Procurement and organizational culture on the performance of SKPD.

The implication of the results of this study can be the basis of statistical conclusions in the field that supervision has not been able to moderate the relationship of the implementation of E-Procurement to performance. This shows that supervision has not been able to bridge the influence of E-Procurement Implementation on Performance. The better the existing Performance, the stronger the influence of E-Procurement Implementation on Performance

The findings that prove that supervision cannot moderate the relationship The implementation of E-Procurement and training on Performance is due to the phenomenon of a work supervision system that has not been fully implemented. The results of respondents' answers to Supervision indicate that there are not maximal monitoring indicators regarding Supervision giving performance-focused assessment and according to each employee there were 16.3% of the answers that were less agreeable. This shows that management must be able to evaluate its work supervision in accordance with a centralized assessment on each work organization chart so that the work target can run well in order to moderate the relationship of the E-Procurement Application and training to Performance.

In addition, a phenomenon related to the implementation of E-Procurement was also found, including the indicator of access to users in the e-Procurement system having standards or rules that are in accordance with technical procedures in the procurement of goods and services. There were respondents who answered less than 14.3%. This of course can be a note for management in the Procurement of Goods and Services in Inalum in the implementation of the E-Procurement implementation which shows that there are still respondents who provide an assessment that the use of e-Procurement systems does

not yet have standards or rules that are in line with technical procedures so that they can slow down the work process itself. The results of the respondents' answers to the Training also showed that there were indicators of training that had not been maximized regarding training aids in accordance with the training method; there were respondents who answered less agreeably at 16.3%. This shows that there are still employees who assess that the training aids have not maximally supported the training method because there are some employees who find it difficult to carry out the training process.

## CONCLUSION

Based on the results of hypothesis testing, conclusions that can be drawn from each test hypothesis are as follows:

1. There is a positive and significant effect of the implementation of E-procurement on the performance of employees in the INALUM Procurement of goods and services.
2. Supervision cannot moderate the relationship between the application of E-procurement to the performance of employees in the INALUM Procurement of goods and services.

## RECOMMENDATION

The results of the analysis in this study can provide input that can be used by management in the Procurement of goods and services section of Inalum and also subsequent researchers. There are several suggestions that can be used as recommendations from this study:

1. There is an indicator of the implementation of E-procurement that is less than optimal, the head of department must be able to implement the concept of E-procurement in accordance with procedures and techniques to all levels of employees such as giving more trust to employees to develop their ideas in completing work and by always giving direction and treatment which corresponds to the problems faced by employees.
2. The presence of supervision indicators that are not maximal regarding Supervision has not provided a performance-centered assessment and according to each employee, company management must be able to evaluate its work

supervision in accordance with a centralized assessment on each work organization chart so that the work objectives can run well in order to moderate relations Implementation of E-Procurement and training on Performance. Therefore management needs to evaluate the supervision system to maintain the level of discipline of employees where accuracy in work must be improved, work results must be adjusted to the standard (SOP), work targets achieved must be in line with the organization's plan, employees must be able to reduce the number of errors in work, speed up the completion of work, can use time effectively.

3. The next research should be able to test other variables by adding independent variables that have not been discussed in this study such as work ethic, organizational culture, compensation, promotion, work motivation and so forth.

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How to cite this article: Sihombing HS, Matondang R, Lubis AN. Effect of implementation of e-procurement on employee performance at procurement department of PT Indonesia Asahan aluminium (Persero) moderated by supervision variable. *International Journal of Research and Review*. 2019; 6(1):144-152.

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