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# Effect of knowledge management on performance: A case study at PT. Eastern Pearl Flour Mills Makassar

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**Abstract.** This study aims to determine the effect of Knowledge Management on the performance of maintenance department employees at PT. Makassar Eastern Pearl Flour Mills and to find out which Knowledge Management indicators are most influential on employee performance. This study uses the statistical application IBM SPSS 21. The population in this study is employees at PT. Eastern Pearl Flour Mills Makassar, amounting to 78 people. The collection of data is done by using a questionnaire. 78 questionnaire were handed out with 65 questionnaire are valid. The data were processed using multiple linear regression analysis technique. The results of the study indicate that there is the influence of the variable Knowledge Management which consists of Personal Knowledge (X1), Job Procedure (X2), and Technology (X3) against the performance of the employee (Y) with the value of the coefficient of determination of 0.286. Analysis of the data do indicate that the variable Personal Knowledge of the results of the t test for 0.3562 is the most giving effect compared with other variables.

## 1. Introduction

Knowledge as capital has the effect of which is very large in the progress of an organization. In a neighborhood that is very quickly changing it then knowledge usually will undergo obsolescence by because it needs to be kept constantly updated through a process of learning.

Knowledge which is owned by an organization is an asset that is very valuable [1] and is an asset that is not naked eye or intangible assets [2], knowledge is also a resource internal company the most valuable, unique, difficult to replace, and difficult to imitate [3].

Science and technology as a factor of power of competitiveness that is very important to be able to survive and compete so that Knowledge Management is required so that employees, groups , or organizations are constantly developing its capacity to achieve result is optimal, which is commonly called the performance [4]

According to Khammarnia et al. [5], knowledge management is an important component in organizational success, including innovation, strategic, economics, and management. Knowledge management emerges as an important aspect of achieving excellent organization and has been approved and used as an effective organizational management method in a variety of companies.

The maintenance department at PT. Eastern Pearl Flour Mills recognizes the importance of a consistent and ongoing learning process. Then from the department of maintenance do the management of knowledge as a system of management that acts as a means of learning and doing activities transfer or sharing of knowledge one of them to follow training or training in accordance with the field and perform activities of brainstorming. PT. Eastern Pearl Flour Mills particular department maintenance of implementing knowledge management in the form of a briefing every morning and do brainstorming every three months.

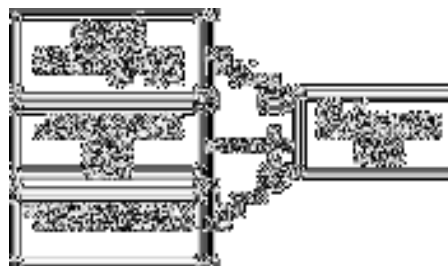


The maintenance department of PT. Eastern Pearl Flour Mills applies the knowledge management method as a tool for managing employee performance in the company's management process and empowering employees to get superior results from the maintenance department's employees to improve company performance, so that it is expected that each employee can continue to explore his knowledge and not just depend on or fixate on the existing system so that each maintenance department employee has a role in improving the quality of the company.

The study is to investigate the construct of Knowledge Management, which consists of three variables, namely personal knowledge, job procedures, and technology by using a method of multiple linear regression analysis. This is a method that is used to determine how large the influence of the management of knowledge on the performance of employees of the department of maintenance, so it can be known variables that most influence on the performance of employee of maintenance department.

## 2. Methods

This research is using primary data obtained by asking the respondent a set of questions in the form of a questionnaire. The respondents of this study were all employees at the Maintenance Department of PT. Eastern Pearl Flour Mills. The employees of the maintenance department that are this research respondents are oddly all male. From the 78 respondents, 45% respondents has education level as high as high school, 31% hold diploma degree or college graduates, 23% respondents hold bachelor degree, and 2% of the respondents hold master degree. Of the 78 questionnaires were distributed as much as 65 questionnaires collected back and can be processed much further. The data analysis technique used is multiple linear regression analysis. The conceptual framework of this study can be seen in Figure 1.



**Figure 1.** Research conceptual framework

The study is concluded the effect of variable independent of the variable dependent by comparing the value of the significance of models in statistics. Constructs Knowledge Management was measured by using three indicators, namely Personal Knowledge (X1), Job Procedure (X2), and Technology (X3). The third indicator is used to measure the effect of Knowledge management of the variable performance Employees (Y). Indicator variables Performance Employees in research is adopted from research Bernardin and Russel [6] which consists on Quality, Quantity, Timeliness, Need for supervision, and interpersonal impact.

## 3. Results

By using the multiple linear regression analysis technique, obtained the results of the processing of data such as that shown in table 1.

### 3.1. Multiple Linear Regression Analysis

**Table 1.** Coefficient of multiple linear regression test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	12.286	4.434		2.771	.007

personal knowledge	.426	.120	.669	3.562	.001
job procedure	-.004	.090	-.007	-.041	.976
technology	-.067	.080	-.139	-.838	.405

Table 1 is the result of data processing that shows the coefficients of the multiple linear regression analysis. Table 2 shows the R values of the multiple linear regression analysis. In table 1 can also be known the value of t-calculate.

**Table 2.** R table of multiple linear regression test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.565 <sup>a</sup>	.320	.286	301.848

Based on the results of the data that then can be compiled equation multiple linear regression as follows: M

$$Y = 12.286 + 0.426x_1 - 0.004x_2 - 0.067x_3$$

The regression equation above implies that:

- The constant value is 12.286. This constant value indicates that if there are no personal knowledge variables (X1), work procedures (X2) and technology (X3), so employee performance is valued as 12.286.
- It is proven that the variable of personal knowledge (X1) is 0.426 which is mean that if there is a one-unit increase, the employee's performance (Y) will also increase by 0.426.
- The job procedure variable (X2) is -0.004 which is mean that if there is a one-unit increase, it will also lose the performance of employees (Y) of 0.004.
- The technology variable (X3) value is -0.067 which is mean that if there is a one-unit increase, it will also lose employee performance (Y) of 0.067.
- R value of 0.549 shows that relationship between the performance of employees with the variables of personal knowledge, work procedures and technology are sufficient.
- Adjusted R square value of 0.286 which also shows the relationship between employee performance with personal knowledge variables, work procedures, and technology affect positively or sufficiently on employee performance. The variables of personal knowledge, work procedures and technology on the performance of maintenance employees amounted to 28.6%, and the remaining 71.4% was kept by other variables outside this study.

### 3.2. Partial t-test

Partial t-test was conducted to gain the understanding of the influence of knowledge management to performance. The results of the t-test are:

- t calculate value for variable X1 is 3.562, meanwhile t table value is 1.999 which is imply that X1 influence variable Y significantly.
- t calculate value for variable X2 is 0.127, meanwhile t table value is 1.999 which is imply that X2 does not has significant influence on variable Y.
- t calculate value for variable X3 is 1.158, meanwhile t table value is 1.999 which is imply that X3 does not influence variable Y significantly.

### 3.3. F-test

F test is done to understand the influence of variables X1, X2, and X3 simultaneously influencing variables Y. The results of the F test can be seen in Table 3.

**Table 3.** F value

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	261.230	3	87.977	9.557	.000 <sup>b</sup>
Residual	555.785	61	9.111		

Total	817.015	64
a. Dependent Variable: performance		
b. Predictors: (Constant), technology, job procedure, personal knowledge		

#### 4. Discussion

Based on the table coefficient test of multiple linear regression shows that personal knowledge has an effect that is significant to the performance of the employee. In practice, at PT. Eastern Pearl Flour Mills Makassar employees will attend training activities (training) in accordance with their fields so that each employee's knowledge can be increased to support his work. Employees also usually perform discussion or sharing of knowledge among co-working, so that employees of the department of maintenance can work much better and new knowledge.

Based on the results of the conducted interview, maintenance department employees have more than one year's work experience. With experience that is owned, employees agree that the work that they do will be easy and able to finish the job more quickly than on the other. With so variable personal knowledge or knowledge of personal one only experience will greatly impact on performance.

As shown in the table coefficient test of multiple linear regression analysis indicates that the job procedure does not have the influence that is significant to the performance of the employee. In this study SOP (standard operating procedure) is similar to job procedure. SOP applied by PT. Eastern Pearl Flour Mills Makassar particular department maintenance implement the SOP with quite well. However, according to some employees in companies that do not agree that the SOP in the department have meet the standard because sometimes still often happens implementation of activities that leave behind in the SOP as operators still driving a forklift in which the operator has SIO (operator permit letter) who has passed the limit driving license, this is not in accordance with the SOP.

The third variable used in this research to measure knowledge management is Technology. Based on the table coefficient test of multiple linear regression shows that the technology does not have the influence that is significant to the performance of the employee. In practice, some maintenance department employees do not really use technology in the form of the internet because employees only focus on improving technology in the form of machines.

#### 5. Conclusion

Based on the results of the test regression showed that knowledge management impact positively on the performance of employees of the department of maintenance by 28.6% with the variable of personal knowledge as a variable having influence largest compared to job procedure and technology and the rest of 71.4% is influenced by variables other outside this research. Other similar research as this research are encouraged to including another variables that has been proved that could affect employee performance and not include in this research model such as organization culture to explain more of the influence of knowledge management to employee performance in companies.

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