

The Effect of Information Technology Advancement, Management Participation, and Work Motivation on Employee Performance at PT Cladtek Bi-Metal Manufacturing Indonesia

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Abstract. This study aims to determine the effect of advances in information technology, management participation, and work motivation on employee performance at PT Cladtek Bi-Metal Manufacturing Indonesia. The administrative and managerial sections are the most important part in the process to determine the company's performance. Employee performance can be improved through the use of information technology, management participation, and work motivation. The population in this study includes employees working in the fields of production, engineering, research and development, document control, projects, procurement and logistics, finance, IT, Epicor software, QC/QA, HSE, and human resource development. The research sample amounted to 150 respondents, selected using purposive sampling method. Using primary data obtained through the distribution of questionnaires. The data analysis technique used is the classical assumption test and hypothesis testing. The results of this study indicate that advances in information technology, management participation and work motivation have a positive and significant effect on employee performance.

Key words: Technology Advances, Management Participation, Motivation, Employee Performance

1. Introduction

Advances in information technology are currently facing a very fast revolution, so that it is very influential in several ways, one of which is in the field of work. Utilization of technological sophistication will continue to increase; this is the impact of technological developments which is now a necessity because it can help the community or association in completing work. Advances in technology have changed the mentality in the eyes of the public. So continuous improvement and data greatly affect monetary life universally, both globally and in Indonesia in particular.

With the advancement of information technology that is increasingly rapid and fast, people can use technology appropriately according to their needs. Advances in information technology have brought the Indonesian nation towards a more advanced life. Progress and data provide convenience for the local area. That, however also contributes to having the ability to understand data enhancement so that individuals can share or mingle with whoever and wherever they are in a productive way.

According to [12] the term performance comes from the word work execution or serious implementation (work achievement or real achievement achieved by someone). Performance is the result of the quantity and quality of work carried out by a person or representative in carrying out their duties in accordance with the assigned tasks. An employee has an important role in an organization.

According to [13] if an employee or group of employees has set criteria or standards of success to be measured, then performance can be known and measured. If you don't set targets and goals in the measurement, it is impossible to determine individual or organizational performance because there will be no standard by which to judge success. Managing employee performance is necessary to determine whether an organization's employees meet the professional standards or requirements that the company seeks.

Advances in information technology will be in vain if it is not used optimally during its implementation. The management organization must have the option to change the progress of data information technology that will be controlled by the organization. With the support of the executives, representatives will get a post in completing the exercise properly. Support from management greatly influences authoritative and individual execution.

One of the representative implementation variables in the organization is work motivation. Motivation is something that upholds the way people behave, so they will try sincerely and passionately to achieve ideal results. According to [19] Motivation is the drive to exert or use a lot of energy to achieve hierarchical goals while meeting personal requirements.

Every employee wants to feel satisfied when completing his work because high job satisfaction indicates that an organization can successfully carry out management tasks and provide happiness to employees in carrying out their duties. A good attitude towards one's work resulting from an assessment of its quality is known as job satisfaction [19]

The current phenomenon is Covid-19, which affects various sectors, especially the company's employment system. To overcome this, the company divides the tasks that are the responsibility of each employee. Some of the company's employees are currently unemployed, while others are working from home. The effectiveness of company personnel is greatly influenced by this. The company anticipates that staff members will be able to adapt to the work from home method. Activities are carried out by employees through online media platforms such as WhatsApp, telegram, zoom, google meet, and the company website.

Employees must master how to use the online media application. Employee performance will be disrupted if employees are constrained when using internet media applications. Employee performance has a significant influence on the success of a company. Every business always aims to improve employee performance in order to meet its goals. The effectiveness of quality human resources, the volume of work completed, and the timeliness of employees at work must of course complement this.

For work involving metal materials, particularly Weld Overlay and Lining procedures on carbon steel pipes for the oil and gas industry, PT. Cladtek Bi Metal Manufacturing provides industrial services. The company with the largest pipe cladding production quota in Indonesia is PT Cladtek. In addition, to achieve its goals as effectively as possible during the current pandemic, PT. Cladtek Bi-Metal Manufacturing works to improve employee performance. In addition, there has been little change in staff performance, according to data collected internally.

Based on previous research on advances in information technology on employee performance, [2] concluded that the sophistication of information technology affects individual performance.

Based on previous research on management participation on employee performance conducted by [2] stated that management participation has a positive influence on individual performance.

Based on previous research on work motivation on employee performance, Bagus Ikhsan Bagaskara and Edy Rahardja (2018) stated that work motivation has a positive effect on the performance of PT. Cen Courier Indonesia, Jakarta.

According to previous research, companies should be able to manage these factors effectively to enable employees to do their jobs in a relaxed, comfortable manner without experiencing tension or anxiety. This will enable the company to achieve the organizational goals that have been set. This problem is not only related to the physical work environment but also to the social and psychological climate there. Employees will work optimally if they are in a positive work culture.

Despite the fact that this study draws on previous research, there are differences in the subjects or samples selected, the time and place of the study, and the sample size. In this study, PT Cladtek Bi-Metal Manufacturing Indonesia became the object of choice.

2. Theory & Literature Study

2.1 Maslow's Need Hierarchy Theory

Maslow, A. H. (1943) put forward this theory, which explains that the first principle of Maslow's hierarchy of requirements is that people are social beings who have desires. He consistently wanted and would stop when his time on earth was up. Second, consumer motivation factors are limited to unmet needs. According to Maslow's theory of needs, every person has five wants, namely physiological needs, security, social ownership, self-esteem and self-actualization. Before higher-level requirements are motivated, lower-level wants must be satisfied

2.2 Information Technology Advances

Technology users find implementation to be simple due to the diversity of technologies. With sophisticated corporate information technology (computerized and integrated) and applications supporting the latest technology, it is projected to increase the sustainability of the company's performance. According to [2], the application of information technology if carried out in company activities will produce high quality products. Meanwhile, according to [6] it is "The type, complexity, and independence of information technology usage and management in an

organization are all considered to be aspects of information technology sophistication, which is a multi-dimensional concept. As a result, the concept of information technology sophistication incorporates both system information management and consumption aspects. With reference to the type, complexity, and independence of the use and administration of information technology within an organization, it is clear from this definition that the sophistication of information technology is multi-dimensional. As a result, the notion of information technology sophistication combines the use of management systems and the use of information systems. The use of sophisticated information technology by the company has increased the company's activities. This requires consideration of a number of factors to select the appropriate information technology for the company.

2.3 Management Participation

The role of management in an organization is very important, with the help of top management in carrying out the work well. As pointed out by George S. Odiorne interpreted by Anwar Prabu Mangkunegara [12] that support is a dictator's way of administrative behavior that has something like two perspectives, specifically limiting work strategies for subordinates and controlling subordinate change. According to Ratnaningsih and Agung [3] management support as a board contributes in monitoring the development of performance and quality of work in the company. The definition of management participation according to Sugian [22] is the cooperation of authorities at the highest level with the ultimate goal of working on the nature of their association. As part of their involvement, they create and maintain a quality committee, establish quality policies and objectives, communicate these goals to lower levels of the quality improvement team, monitor changes across the business, present what they do well, and work on proper preparation and organization to achieve the expected goals.

2.4 Work Motivation

According to [14], motivation plays an important role for both employees and leaders because it affects how enthusiastically the work is done, which can result in excellent performance, and will undoubtedly help fulfill the desired goals efficiently and effectively. From the previous description it can be concluded that Motivation is the drive to exert or use a lot of energy to achieve hierarchical goals while fulfilling personal requirements. Employees who are motivated at work are more likely to perform as expected, which helps to achieve company goals.

2.5 Employee Performance

The word "performance" comes from "work performance" or "real performance" (job performance or real achievements achieved by someone). In a business, performance can take the form of individual or group activities. According to [21], performance is the implementation of a task and completion of work in accordance with its obligations in order to provide the desired results. This definition shows how performance focuses more on processes, where adjustments are made while work is being done to maximize the achievement of work results or performance. Performance, according to [18] is the extent to which an individual has contributed to the implementation of organizational goals, either by achieving certain goals related to the individual's work or by demonstrating competencies that are recognized as relevant to the organization. Performance is a multifaceted notion with three components:

achievement, ability, and attitude. Employee performance is the result that an employee achieves when his work matches the specific requirements for a particular job. Performance measures whether the set organizational goals are met with success or failure. To ascertain whether the organization's performance procedures to date have been in accordance with the anticipated goals or not, organizational performance information is very important. Performance is the result of work associated with organizational goals such as: quality, efficiency, and other work effectiveness criteria, according to [6].

3. Hypothesis

Figure 1 shows the conceptual framework of the study, which was concluded after analysis of theory and literature. Based on this framework, this study has three hypotheses; First, Advances in information technology have a positive effect on employee performance. Second, Management participation has a positive effect on employee performance. Third, Work motivation has a positive effect on employee performance.

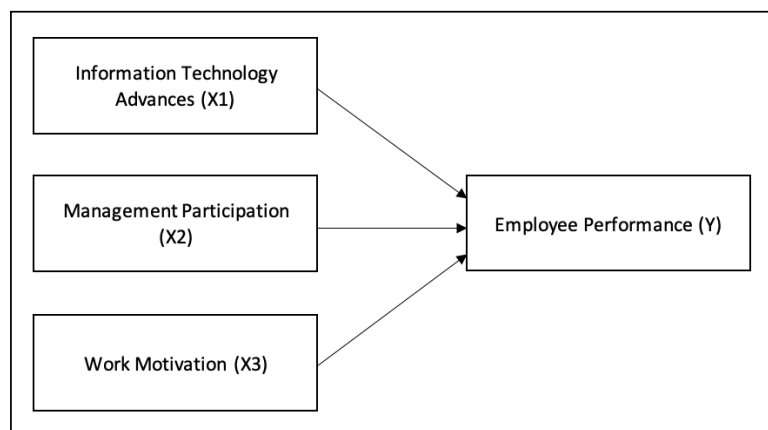


Fig 1. Hypothesis Framework

4. Research Methods

In this study, researchers used explanatory research methods using a quantitative approach. The population in this study were employees of PT Cladtek Bi-Metal Manufacturing totaling 241 people. The sampling technique used was purposive sampling method using the Slovin formula, with a sample of 150 respondents. The sample criteria in this study are employees of PT Cladtek Bi-Metal Manufacturing who work in the administrative and managerial fields. Data collection uses a questionnaire by distributing it to respondents via *Google Form*. Each variable studied used a Likert Scale of 1 to 5. Researchers processed the data that had been recapitulated using the SPSS Ver. 20 application. The slovin formula used was:

$$n = \frac{N}{1+Ne^2} \quad (1)$$

Information:

n =Number of Samples

N =Total Population

E =error tolerance (5%)

5. Results and Discussion

5.1 Validity Test Results

Table 1. Validity Test Results

Question Group	Question	Invalid Question	Valid Question
Information Technology Advances	12	0	12
Management Participation	7	0	7
Work Motivation	8	0	8
Employee Performance	10	0	10

Source: SPSS 2022 Data Processing 20

Based on Table 2 it is stated that each statement item from each variable is declared valid, because the r count of each statement is greater than the r table, which is 0.361, it can be concluded that each variable statement item is valid.

5.2 Reliability Test Results

Table 2. Reliability Test Results

Variable	Alpha Cronbach	Sig	Note:
Information Technology Advances	0.826	0.6	Reliable
Management Participation	0.898	0.6	Reliable
Work Motivation	0.759	0.6	Reliable
Employee Performance	0.859	0.6	Reliable

Source: SPSS 2022 Data Processing 20

Based on Table 3, the value of Cronbach's Alpha for each variable is 0.60. Which shows that all indicators used in this study are reliable.

5.3 Classic Assumption Test

Data Normality Test

Normality test is a test carried out to determine whether the data used has or is close to a normal distribution. A data is said to be good if the data reflects a normal distribution pattern. The normality checker in this study can show normal data obtained if the significance is > 0.05 [18]

Table 3. Normality Test Results.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		150
Normal Parameters^{a,b}	Mean	.0000000
	Std. Deviation	1.70897680
Most Extreme Differences	Absolute	.092
	Positive	.066
	Negative	-.092
Kolmogorov-Smirnov Z		1.125
Asymp. Sig. (2-tailed)		.159

Source: SPSS 2022 Data Processing 20

The results in the Kolmogorov-Smirnov test were then compared with 0.05 or a significance rate of 5 to make a decision. From table Asymp. Sig. (2-tailed) is greater than 0.05 (0.159 > 0.05). So that the regression model is declared to be normally distributed.

Multicollinearity Test

Table 4. Multicollinearity Test			
Coefficients^a			
Model	Sig.	Collinearity Statistics	
		Tolerance	VIF
1 (Constant)	.000		
Information Technology Advances Management Participation Work Motivation	.035	.911	1.098
	.008	.731	1.369
	.000	.756	1.323

a. Dependent Variable: Employee Performance

Source: SPSS 2022 Data Processing 20

Based on the results in table 8, the progress of information technology is an independent variable with a tolerance value of 0.911>0.1 and a VIF value of 1.098<10. Management participation is an independent variable with a tolerance value of 0.731>0.1 and a VIF value of 1.369<10. The tolerance value for the third variable, namely "work motivation" is 0.756>0.1, and the VIF value is 1.323<10. Thus, it can be concluded that the regression equation model does not have symptoms of multicollinearity, so it is stated that this research is ideal.

Heteroscedasticity Test

By using SPSS, scatterplot is used in this study. The graph plot between the predicted value of the dependent variable, ZPRED, and the residual SRESID can be used to determine whether or not heteroscedasticity is present. The presence or absence of heteroscedasticity can be identified by studying the presence or absence of certain patterns on the scatterplot graph between SRESID and ZPRED. According to Ghozali (2018), if there is a certain pattern, such as dots that form a certain regular pattern (wavy, widening, or narrowing), then heteroscedasticity occurs.

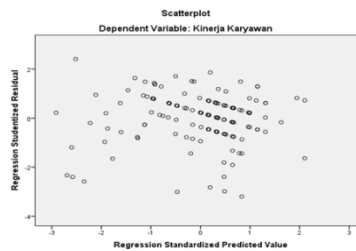


Fig 2. Heteroscedasticity Test Source: SPSS 2022 Data Processing 20

From the scatterplot diagram above, it can be seen that the points spread randomly both above and below the number 0 and the Y axis, it can be concluded that there is no heteroscedasticity in the regression model, so the regression model is feasible to be used in testing.

5.4 Multiple Linear Regression Analysis

This analysis is intended to be able to predict the size of the dependent variable by using independent variable data whose value is known. The form of the multiple linear regression equation obtained is:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e \quad (2)$$

Table 5. Multiple Linear Regression Analysis Results

Coefficients					
Model	Unstandardized Coefficients B	Standardized Coefficients Beta	t	Sig.	
1 (Constant)	19.824		5.279	0	
Information Technology Advances	0.176	0.083	2.129	0.035	
Management Participation	0.162	0.06	2.682	0.008	
Work Motivation	0.327	0.091	3.589	0	

a. Dependent Variable: Employee Performance

Source: SPSS 2022 Data Processing 20

From Table 5, which is the calculation of multiple linear regression analysis using SPSS 25, the multiple linear regression equation can be calculated as:

$$Y = 19.824 + 0.176X_1 + 0.162X_2 + 0.327X_3 + e_3 \quad (3)$$

1. The constant value of 19,824 indicates that if the variables of information technology progress, management participation, and work motivation are considered constant, then employee performance increases by 19,824.
2. The value of the Information Technology Progress variable coefficient is 0.176, which means that an increase of one point in the Information Technology Progress variable (X1) will increase the Employee Performance (Y) 0.176 points. The variable coefficient of Information Technology Progress (X1) is positive, this indicates that there is a positive relationship between Information Technology Progress (X1) and Employee Performance (Y), meaning that the higher the value of information technology progress (X1), it will increase Employee Performance (Y).
3. The value of the coefficient of Management Participation variable is 0.162, which means that an increase of one point in the Management Participation variable (X2) will increase the value of Employee Performance (Y) 0.162 points. The variable coefficient of Management Participation (X2) is positive, this indicates that there is a positive relationship between Management Participation (X2) and Employee Performance (Y), meaning that the higher the value of Management Participation (X2), the higher the Employee Performance (Y).
4. The value of the coefficient of work motivation is 0.162, which means that an increase of one point in the work motivation variable (X3) will increase the value of employee performance (Y) by 0.327 points. The coefficient of work motivation variable (X3) is positive, this indicates that there is a positive relationship between work motivation (X3) and employee performance (Y), meaning that the higher the value of work motivation (X3), it will increase employee performance (Y).

5.5 Data Hypothesis Test

Hypothesis testing conducted in this study aims to determine the effect of the independent variable (Advanced Information Technology, Management Participation, Accounting Information System) on the dependent variable (Employee Performance). This test consists of the T test (partial), and the R2 test (Coefficient of Determination).

Coefficient of Determination Test R2

Table 6. Coefficient of Determination Test Results R2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.514 ^a	.264	.249	1.726

Source: SPSS 2022 Data Processing 20

Table 6 shows the adjusted R2 value, the value is 0.264 or 26.4%. This value indicates that the percentage of the influence of the independent variable in this study can explain 26.4 percent of its effect on the dependent variable. While 73.6% is influenced or explained by other variables not tested in this study.

T Test (Partial)

The main purpose of hypothesis testing in the t-test statistical test is basically to show the extent of the relationship and influence of the independent variables individually in explaining the dependent variable in this study. Hypothesis testing using SPSS 20 as follows:

Table 7. T Test Results (Partial)

Coefficients					
Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	19.824	3.755		5.279	0
Information Technology Advances	0.176	0.083	0.158	2.129	0.035
Management Participation	0.162	0.06	0.223	2.682	0.008
Work Motivation	0.327	0.091	0.293	3.589	0

a. Dependent Variable: Employee Performance

Source: SPSS 2022 Data Processing 20

Based on table 7 t test results obtained the following results:

Hypothesis 1 (H1): The calculated t value for the variable (X1) is 2.129 with a significance level of 0.035. The value of t arithmetic is $2.129 > t$ table is 1.976, then H1 is accepted and H0 is rejected. based on hypothesis 1 which shows that the X1 variable has a significant and partial effect on Y proven.

Hypothesis 2 (H2): The t-count value on the variable (X2) is 2.682 with a significance level of 0.008. The value of t arithmetic is $2.682 > t$ table is 1.976, then H1 is accepted and H0 is rejected. Based on hypothesis 1 which shows that the X2 variable has a significant and partial effect on Y, it is proven.

Hypothesis 3 (H3): The t-count value on the variable (X3) is 3.589 with a significance level of 0.000. The value of t arithmetic is $3.589 > t$ table is 1.976, then H1 is accepted and H0 is rejected. Based on hypothesis 1 which shows that the X3 variable has a significant and partial effect on Y, it is proven. Based on statistical tests that have been carried out on 3 (three) hypotheses, it is known that the results of 3 (three) hypotheses are accepted.

5.8 Discussion

The Effect of Information Technology Advances on Employee Performance

Based on the results of hypothesis testing, there is a significant and positive influence between information technology advances on employee performance, which means that H1 is supported. This is indicated by the significant value of the information technology progress variable, namely $0.035 < 0.05$, which means it has a significant effect. The value of the coefficient of information technology progress shows a positive value shows that advances in

information technology can improve employee performance. Especially in the current pandemic, it is very easy for work, such as working faster, better performance, increasing productivity, making work more effective, making work easier, and having a positive effect on employee performance. If advances in information technology are implemented properly and appropriately, it will support employee performance optimally. This research is corroborated by previous research by [2] and [17] both of whom found a strong impact of advances in information technology on employee performance.

The Effect of Management Participation on Employee Performance

Based on the results of hypothesis testing, there is a significant and positive effect between management participation on employee performance, which means that H2 is supported. This is indicated by the significant value of the management participation variable, which is $0.008 < 0.05$, which means it has a significant effect. The value of the coefficient of management participation shows a positive value which indicates that the support and management function in a company is very important because it has a large impact on how well employees work. This research is corroborated by previous research by [2] and [17], which found a strong impact of management participation on employee performance.

The Effect of Work Motivation on Employee Performance

Based on the results of hypothesis testing, there is a significant and positive effect between work motivation on employee performance, which means that H3 is supported. This is indicated by the significant value of the work motivation variable, namely $0.000 < 0.05$, which means it has a significant effect. The value of the work motivation coefficient shows a value which indicates that work motivation has a beneficial impact on employee performance. According to previous research by Bagus Ikhsan Bagaskara and Edy Rahardja (2018) and Adelia Rimadhina (2018), which is validated by the current research. The ability of employees to perform well at work can be seen from their motivation when completing work.

6. Conclusion and Recommendation

Based on the research that has been done regarding the influence of advances in information technology, management participation, and work motivation on employee performance, it can be concluded that:

1. The Information Technology Progress variable has a positive and significant influence on employee performance.
2. Management Participation Variable has a positive and significant influence on employee performance.
3. Work Motivation Variables have a positive and significant influence on employee performance.

In this case all independent variables have a positive effect on the dependent variable. The implications and suggestions that are expected from this research are that it can contribute to the company in optimizing the performance appraisal system on the performance of its employees, expanding the sample not only to the administrative and managerial sections, and adding variables from theory development.

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