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The Effectiveness of Selection and Financial Incentive Systems in Enhancing Employee Performance

Dr. GK Sharma

Assistant Professor, India

ABSTRACT

Nowadays, Human Resource play important role in the organization success because Employees' performance is the key aspects that support the company's operation. The management needs to select the employees that suitable for the jobs and also apply some strategies to enhance the employees' productivity. Some of the strategies are by giving incentives to increase the employees' work motivation. High employees' motivation will also increase employees' performance while the selection process will also help the company to choose the qualified employees which will have high performance. In this research, the writer used descriptive research and causal research. The writer also gave questionnaires to the employees which are 30 employees. In this research study, the writer proposes 3 variables which are Selection (Variable X1), Financial Incentive System (Variable X2) and Employees performance (Variable Y). Since the data collected from the research is reliable and valid, thus the writer applies the collected data for the process of this study research. The result of this research is Selection has influence to the employees' performance. We can see from the T test result which T count > T table, which is 10.6 >2.042.We can also see from the determination test that 16.81% of employees' performance is affected by selection. Financial incentive system has influence to the employees' performance. We can see from the T test result which T count > T table, which is 5.72 >2.042. We can also see from the determination test that 43.56% of employees' performance is affected by financial incentive system. Selection and Financial incentive system have influences to the employees' performance. We can see from the F test result which F count > F table is 16.3 > 1.84 We can also see from the determination test that 54.76% of employees' performance is affected by selection.

Keywords: Effectiveness, employee, financial incentive system, performance

INTRODUCTION

Nowadays in the era of globalization, business competitions tend to increase. A lot of foreign companies interested to make investment in Indonesia. In order to compete with the foreign companies, every company in Indonesia must seek for the best and potential ways to fulfill or complete their business activities. Business activity is an activity that transforms inputs into outputs, which can be goods and services.

The purposes of the company's business activities are to reach the company's goal and also to gain profit. As what the company targeted, a company must use their production factor as efficient as possible. The way that the company need to do in order to make the production factor can be used efficiently is by managing the Human Resources aspect. Human Resources Management plays important role in the success of the business because Employees' performance is the key aspects that support the company's operation.

The management needs to select the employees that suitable for the jobs and also apply some strategies to enhance the employees' productivity. Some of the strategies are by making Proper job designs, setting suitable salaries and giving incentives to increase the employees' work motivation. High employees' motivation will also increase employees' performance while the selection process will also help the company to choose the qualified employees which will have high performance. High performance employees also will result in better outputs which are goods and services that are being delivered to the customer. Actually the success of a business largely depends on the ability of the manager to select the suitable employees and motivate the employees to achieve the company's objectives.

Selection process is very important because by doing selection, the company can hire the right employees that suitable for the job. By hiring the right employees the company can have good employees' performance, successful employment relationship and a positive impact on the work environment.

There are many ways to motivate the employees and one of the ways is by giving incentives based on the employees' work performance. Incentives are generally defined as tangible or intangible rewards that enable or motivate a particular course of action. Giving incentives will increase the employees' work performance because they will be motivated to do their job better. Besides increasing the employees' motivation, giving incentives also will increase the moral and loyalty of the employees to the company.

The company also needs to motivate the employees to work better by giving rewards to the employees beside their based salary. As according to Marbun, (2005, p.104), *"Insentifadalahpemberiansesuatu, biasanyadalambentukuang, yang dapatmendorongsemangatpekerjauntukbekerjalebihproduktif." (Meaning: "Incentive is giving something, which is generally in the form of money that can inspire the employees to work more productively.")*. In every company problems seem to occur, whether it is in a big company or a small company. Problems can be identified as a challenge whereby the company has to face in achieving its objectives or goals. When a company is faced to employees' performance problems, the company has to immediately find out the solution because employees' performance will impact the company's profit.Based on the explanation above, the writer does a research to find out whether selection and incentives system can affect the employees' performance or not.

RESEARCH METHOD

A. Research Design

Research design is used to assist the researcher to conduct a research in a systematic way and to determine whether there are any correlations between variables.

To complete this *skripsi*, the writer will use two ways to analyze the data on this research. The research designs used by the writers are descriptive research design and causal research

Descriptive research is also known as statistical research. Descriptive research is the most commonly used in completing research. Descriptive research is the scientific method which involves observing and describing the characteristic of the population that being studied.

Causal research is used to identify the relationship of the two variables by using the hypothesis and the theories which will establish the causal relationship between variables. In this research, the investigation type that used by the writer is the causal relationship.

In this research design, the context study that will be used by the writer is the questionnaire that consists of a set of questions to know about the responses from the employees related to the selection and financial incentive system at PT. Surya Jaya Medan.

B. Population and Sample

Population is the whole research objects as the source of data with a certain characteristics in the research.

Sample is the selection of a fraction of the total amount of units of interest to decision makers, for the ultimate purpose of being able to draw general conclusions about the entire body of units.

C. Definition of Operational Variable

In this research, the writer distributed questionnaire which are arranged in question form to the employees as respondent. In measuring the variables, the writer used Likert's Scale.

Likert's Scale is a psychometric scale commonly used in questionnaire and the most widely used scale in survey research. In Likert questionnaire, the respondent can specify their level of agreement into numbers as following:

1 = strongly disagree
2 = disagree
3 = neither agree nor disagree
4 = agree
5 = strongly agree

Table 1. Indicators of Operational Variables

Variable	Indicator	Sub Indicator	Questionnaires
Variable X1 (Selection)	Formal Education	knowledge	All the employees in the company already have good knowledge in performing the job.
	Experience and Past Performance	Work related attitude	The company already has employees that have experience in their field.
	Physical Characteristics	Appearance	All employees in the company have good appearance.
	Intelligence Test	Intellectual abilities	All employees in the company have good memory and numerical ability.
	Personality Test	Personality	All employees in the company have good personality.
Variable X2 (Financial Incentive System)	Bonus	Good performance	Incentive that given by the company is suitable with the employees' ability.
	Commission	Good sales	Incentive that given by the company motivate the employees to perform better.
	Combination Plan	Good sales and performance	Incentive is needed beside salary.
	Piecework Plan	Straight piecework	Incentive givenmust should be balance with the employees performance.
	Merit Pay	Good performance	Salary increment will be based on the employees' performance.
Variable Y (Employees' performance)	Quantity	Number of product sold	Employees have helped the company to have good sales.
	Quality	The work output redone or rejected	The employees' work outcome is according to the company standard.
	Time	How fast the work performed	All employees finish their job on time
	Capability	Employees' capability	All employees are capable to perform their job well.
	Personal Habits	Employees' Behavior	All employees have good relationship and have good cooperation in doing their job.

D. Data Collection Method

In doing this skripsi, the writer collect the data and other information by using two types of methods, which are:

1. Primary Data
   Primary data is a data which is collected by the writer by using field research. The writers distributed questionnaires to the employees at PT. Surya Jaya Medan to be filled. The writer used Likert's scale to analyze the data. The writer also did interviews to the employees to get additional data that can be used to complete the research.
2. Secondary Data
   Secondary data is data or information that has been gathered for some purpose outside the research process. Secondary data can be collected from books, magazines, journals, research paper, etc. the writer gain secondary data from the library and internet research.

E. Data Analysis Method

In doing the research, the writer uses some methods to analyze the data that have been collected from the research. The methods are as follow:

1. Statistical Method

a. Mean

The mean is the value that helps to summarize an entire set of numbers. A set mean is calculated by adding up all the numbers in the set together and dividing their sum by the number of members of the set.

The formula is:

$$x = \frac{x1 + x2 + x3 + \cdots + x_n}{n}$$

Where:
$\overline{X}$ = Mean
X1, X2, X3, Xn = total data to be added up
n = quantity of the sample

b. Median

Median is described as middle or center value of a set of data that have been collected from the research. To find out the value of median, we need to arrange the data according to the size.

When the n is odd, the formula is:

$$median = \frac{n+1}{2}$$

When the n is even, the formula is:

$$median = \frac{1}{2}[x_k + x_k + 1]$$
$$k = \frac{1}{2}n$$

Where:
n = quantity of the sample

c. Mode

Mode is defined as the value that occurs with the highest frequency.

Table 2. Level of Interpretation

Score	Interpretation
0 - 5	Strongly Disagree
6 - 10	Disagree
11 - 15	Neutral
16 - 20	Agree
21 - 25	Strongly Disagree

2. Validity

Validity is used to show the validity level of an instrument and data. The formula for validity is:

$$r_{xy} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}}$$

Where:
X_n = the value of question number n from each respondent
Y_n = the total value of question from each respondent
x = $X_n - \bar{x}$
y = $Y_n - \bar{y}$
$\bar{x}$ = average score of X_n
$\bar{y}$ = average score of y

Table 3. Level of r_{xy} (validity)

r_{xy}	Validity
0.0 – 0.20	Very low data validity
0.21 – 0.40	Low data validity
0.41 – 0.60	Moderate data validity
0.61 – 0.80	High data validity
0.81 – 1.00	Very high data validity

3. Reliability

Reliability is one of the instruments that are trustworthy enough to be used as one of the tool in collecting data because it has been proven as good instrument. A good instrument will not have the characteristics of tendentious that will lead the respondents in choosing particular answers. A trusted instrument which is reliable will produce trustworthy data as well.

In this research, the data reliability is tested using the Cronbach's alpha formula $\alpha = \left(\frac{k}{k-1}\right)\left(1 - \frac{\sum \sigma^2 b}{\sigma^2 t}\right)$

Where:

$$\sum \sigma^2 b = \sigma 1^2 + \sigma 2^2 + \sigma 3^2 + \ldots$$

$$\sigma^2 = \frac{\sum x^2 - \frac{(\sum x)^2}{N}}{N}$$

$$\sigma^2 t = \frac{\sum t^2 - \frac{(\sum t)^2}{N}}{N}$$

α = reliability coefficient
k = number of questions
$\sum \boldsymbol{\sigma}^2$b = individual question variance
$\boldsymbol{\sigma}^2$t = variance of total value
X = the respondent value of each respondent
N = number of respondents

4. Correlation Coefficient Analysis

The function of correlation analysis is to find out the relations of variable x (selection and financial incentive system) to the variable y (employees' performance) in the company.

The formula for correlation coefficient for two variables is:

$$r_{xy} = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)}(n\sum y^2 - (\sum y)^2)}$$

The formula for correlation coefficient for three variables is:

$$Rx1x2y = \frac{\sqrt{(rX1y)^2 + (rX2y)^2 - 2(rX1y)(rX2y)(rX1X2)}}{\sqrt{1 - (rX1X2)^2}}$$

$$r_{x1x2} = \frac{n\sum x1x2 - (\sum x1)(\sum x2)}{\sqrt{(n\sum x1^2 - (\sum x1)^2)}(n\sum x2^2 - (\sum x2)^2)}$$

Where:

r_{xy} = coefficient of correlation between variable x and y
Rx1x2y = coefficient of correlation between variable x1,x2 and y
x1 = independent variable (selection)
x2 = independent variable (financial incentive system)
y = dependent variable (employees' performance)

The coefficient of correlation (r) can take on any value between -1 and +1. The values of correlation coefficient are shown in the following figure.

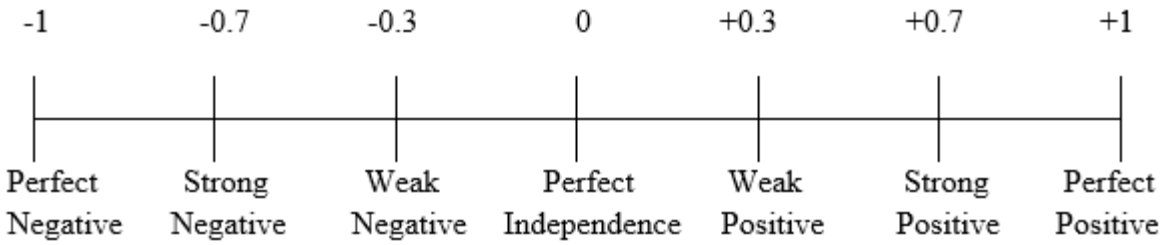


Figure 1 Values of correlation coefficient

Table 4. Interpretation Coefficient Correlation Value

Coefficient Correlation Value	Interpretation
+1.00	Perfect Positive
-1.00	Perfect Negative
0.85 – 0.99	Very High
0.70 – 0.84	High
0.50 – 0.69	Average
0.30 – 0.49	Low
0.10 – 0.29	Very low

5. Coefficient Determination

The writer also use test of determination to measure the influences of selection and financial incentive system to the employees' performance at the company in percentage

$$D_{xy} = r^2.100\%$$

Where:

D_{xy} = coefficient of determination
r = coefficient of correlation between variable x and y

6. Regression Analysis

Regression Analysis includes any techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. Regression analysis help us to understand how typical value of dependent variable changes when any one of the independent variable is varied, while the other independent variables are held fixed.
Linear regression equation:

$$y = a + bx$$

Multiple linear regression equation:

$$y = a + bx_1 + bx_2$$

Where:

x1 = independent variable 1 (selection)
x2 = independent variable 2 (financial incentive system)
y = dependent variable (employees' performance)
a = constanta
b = regression coefficient
n = total sample

$$a = \frac{\sum y - (b.\sum x)}{n} \qquad b = \frac{(n.\sum xy) - (\sum x\,.\sum y)}{n.\sum x^2 - (\sum x)^2}$$

$$r^2 = \frac{b1\sum yx1 + b2\sum yx2}{\sum y^2}$$

F. Hypothesis Test

The writer set the alpha level or level of significance is 0.05 or establishing a 95% confidence interval means there is a 5% chance of being wrong if the null rejected.

Test hypothesis is to test the hypothesis whether it is accepted or rejected.

The T-test formula is:

$$t = \sqrt{\frac{r^2\,.df}{(1-r^2)}}$$

$$df = N - 2$$

Where:

t = hypothesis test
r = coefficient of correlation
n = number of respondents
df = Degree of freedom
N = number of respondents
α = level of significance = 0.05

The result of computation will be compared with the value in the t-table.
-Ttable < Tcount<+Ttable = null hypothesis (Ho) is accepted, alternative hypothesis (Ha) is rejected
Tcount <- Ttable = null hypothesis (Ho) is rejected
Tcount > -Ttable = alternative hypothesis (Ha) is accepted

The F-test formula is:

$$F = \frac{R^2(N-m-1)}{m(1-R^2)}$$

Where:
R = correlation coefficient of variable x to variable y
N = number of respondent
m = total of the dependent variable

The criteria testing of this hypothesis is:

Hypothesis test is an assertion or conjecture about the parameter or parameters of a population. It may also concern the type or nature of population.
Ho : μ1 = μ2
Ha : μ1 ≠ μ2
Ho = null hypothesis
Ha = alternative hypothesis

The result of computation will be compared with the value in the F-table.
-Ftable < Fcount<+Ftable = null hypothesis (Ho) is accepted, alternative hypothesis (Ha) is rejected
Fcount <- Ftable = null hypothesis (Ho) is rejected
Fcount > -Ftable = alternative hypothesis (Ha) is accepted

In this case, if the value of Fcount falls between the value of Ftable and +Ftable, the null hypothesis (Ho) will be accepted and the alternative hypothesis (Ha) will be rejected. However, if the value of Fcount is less than –Ftable or greater than -Ftable, the null hypothesis (Ho) will be rejected and alternative hypothesis (Ha) will be accepted.

RESULTS AND DISCUSSION

A. Test of Data Quality

In this section, the quality of data used in the research has to be determined. The test is implemented to identify the validity, reliability, correlation coefficient, determination and linear regression of the data.

1. Test of Data Validity

The validity test will be given only for 10 respondents of each variable, where the 10 respondents will be representative for the whole set of collected data.

Variable X1 – Selection

$$r_{xy\,(1)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{7.8}{\sqrt{(2.9)(79.6)}} = 0.51$$

$$r_{xy\,(2)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{8.2}{\sqrt{(2.4)(79.6)}} = 0.59$$

$$r_{xy\,(3)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{18.6}{\sqrt{(9.6)(79.6)}} = 0.89$$

$$r_{xy\,(3)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{18.6}{\sqrt{(9.6)(79.6)}} = 0.67$$

$$r_{xy\,(5)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{20.4}{\sqrt{(10.1)(79.6)}} = 0.72$$

No	r_{xy}	Validity
1	0.51	Valid
2	0.59	Valid
3	0.89	Valid
4	0.67	Valid
5	0.72	Valid

Variable X2 – Financial Incentive System

$$r_{xy\,(6)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{71.8}{\sqrt{(3.6)(44.9)}} = 0.14$$

$$r_{xy\,(7)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{4.8}{\sqrt{(1.6)(44.9)}} = 0.56$$

$$r_{xy\,(8)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{13.8}{\sqrt{(7.6)(44.9)}} = 0.75$$

$$r_{xy\,(9)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{10.8}{\sqrt{(7.6)(44.9)}} = 0.58$$

$$r_{xy\,(10)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{13.7}{\sqrt{(10.1)(44.9)}} = 0.64$$

No	r_{xy}	Validity
6	0.14	Valid
7	0.56	Valid
8	0.75	Valid
9	0.58	Valid
10	0.64	Valid

Variable Y – Employees' Performance

$$r_{xy(11)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{5.9}{\sqrt{(2.1)(22.1)}} = 0.87$$

$$r_{xy(11)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{5.5}{\sqrt{(2.5)(22.1)}} = 0.74$$

$$r_{xy(13)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{3.1}{\sqrt{(4.1)(22.1)}} = 0.33$$

$$r_{xy(14)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{3.5}{\sqrt{(4.1)(22.1)}} = 0.47$$

$$r_{xy(15)} = \frac{\sum xy}{\sqrt{(\sum x^2)(\sum y^2)}} = \frac{4.1}{\sqrt{(2.1)(22.1)}} = 0.6$$

No	r_{xy}	Validity
11	0.87	Valid
12	0.74	Valid
13	0.33	Valid
14	0.47	Valid
15	0.6	Valid

2. Test of Data Reliability

In this section, the writer will determine the data reliability which given to 10 respondents out from sample.

Reliability Test for Variable X1

Respondent	Number of Question for Variable X1					Total Score	Total score ^{2}
	1	**2**	**3**	**4**	**5**		
1	5	5	5	5	5	25	625
2	5	5	4	4	4	22	484
3	5	5	4	4	5	23	529
4	4	5	4	5	4	22	484
5	5	4	4	4	5	22	484
6	5	5	5	5	5	25	625
7	4	4	4	4	4	20	400
8	4	5	4	3	4	20	400
9	4	5	4	4	5	22	484
10	4	4	5	4	5	22	484
∑	**45**	**47**	**43**	**42**	**46**	**223**	**4999**
$\sum x^2$	205	223	187	180	214		
σ	**0.25**	**0.21**	**0.21**	**0.36**	**0.24**	**1.27**	
$\sum \sigma^2$	**1.27**						

$$\boldsymbol{\sigma^2 t} = \frac{\sum \boldsymbol{t^2} - \frac{(\sum \boldsymbol{t})^2}{\boldsymbol{N}}}{\boldsymbol{N}}$$

$$\sigma^2 t = \frac{4999 - \frac{(223)^2}{10}}{10}$$

$$\sigma^2 t = 2.61$$

$$\boldsymbol{\alpha} = \left(\frac{\boldsymbol{k}}{\boldsymbol{k-1}}\right)\left(\mathbf{1} - \frac{\sum \boldsymbol{\sigma^2 b}}{\boldsymbol{\sigma^2 t}}\right)$$

$$\alpha = \left(\frac{5}{5-1}\right)\left(1 - \frac{1.27}{2.61}\right)$$

$$\alpha = 0.641$$

Rtable = 5% …….0.361

Rcount > Rtable = 0.641 >0.361 → questionnaire is reliable

Reliability Test for Variable X2

Respondent	Number of Question for Variable X2					Total Score	Total score ^{2}
	1	**2**	**3**	**4**	**5**		
1	5	5	5	5	5	25	625
2	3	4	5	4	4	20	400
3	4	4	4	5	4	21	441
4	4	5	4	4	5	22	484
5	5	5	5	5	5	25	625
6	4	5	5	5	5	24	576
7	5	5	5	5	5	25	625
8	5	5	4	4	4	22	484
9	4	5	4	4	5	22	484
10	4	4	5	5	5	23	529
	43	**47**	**46**	**46**	**47**	**229**	**5273**
$\sum x^2$	189	223	214	214	223		
σ	**0.41**	**0.21**	**0.24**	**0.24**	**0.21**	**1.31**	
$\sum \sigma^2$	**1.31**						

$$\boldsymbol{\sigma^2 t} = \frac{\sum \boldsymbol{t^2} - \frac{(\sum \boldsymbol{t})^2}{\boldsymbol{N}}}{\boldsymbol{N}}$$

$$\sigma^2 t = \frac{5273 - \frac{(229)^2}{10}}{10}$$

$$\sigma^2 t = 2.89$$

$$\boldsymbol{\alpha} = \left(\frac{\boldsymbol{k}}{\boldsymbol{k-1}}\right)\left(\mathbf{1} - \frac{\sum \boldsymbol{\sigma^2 b}}{\boldsymbol{\sigma^2 t}}\right)$$

$$\alpha = \left(\frac{5}{5-1}\right)\left(1 - \frac{1.31}{2.89}\right)$$
$$\alpha = 0.683$$

Rtable = 5% …….0.361
Rcount > Rtable = 0.683> 0.361 → questionnaire is reliable.

Reliability Test for Variable Y

Respondent	Number of Question for Variable Y					Total Score	Total score ^{2}
	1	**2**	**3**	**4**	**5**		
1	5	5	5	5	5	25	625
2	5	3	3	5	3	19	361
3	5	5	5	5	5	25	625
4	4	5	5	4	5	23	529
5	5	5	5	5	5	25	625
6	4	5	5	5	5	24	576
7	4	4	4	3	5	20	400
8	5	4	5	4	4	22	484
9	4	4	4	4	4	20	400
10	5	5	5	5	5	25	625
	46	**45**	**46**	**45**	**46**	**228**	**5250**
$\sum x^2$	**214**	**207**	**216**	**207**	**216**		
σ	**0.24**	**0.45**	**0.44**	**0.45**	**0.44**	**2.02**	
$\sum \sigma^2$	**2.02**						

$$\boldsymbol{\sigma^2 t = \frac{\sum t^2 - \frac{(\sum t)^2}{N}}{N}}$$
$$\sigma^2 t = \frac{5250 - \frac{(228)^2}{10}}{10}$$
$$\sigma^2 t = 5.16$$
$$\boldsymbol{\alpha = \left(\frac{k}{k-1}\right)\left(1 - \frac{\sum \sigma^2 b}{\sigma^2 t}\right)}$$
$$\alpha = \left(\frac{5}{5-1}\right)\left(1 - \frac{2.02}{5.16}\right)$$
$$\alpha = 0.761$$

Rtable = 5% …….0.361

Rcount > Rtable = 0.761 > 0.361 → questionnaire is reliable.

3. Correlation Coefficient Analysis

At this part, the writer will calculate the correlation coefficient between variables.

The correlation coefficient between variable X1(Selection) and Y (Employees' Performance):

Respondent	X1	Y	$X1^2$	Y^2	X1Y
1	23	24	529	576	552
2	21	20	441	400	420
3	17	20	289	400	340
4	22	23	484	529	506
5	25	22	625	484	550
6	25	21	625	441	525
7	20	24	400	576	480
8	16	22	256	484	352
9	22	24	484	576	528
10	21	23	441	529	483
11	18	21	324	441	378
12	21	24	441	576	504
13	20	25	400	625	500
14	25	24	625	576	600
15	22	24	484	576	528
16	19	20	361	400	380
17	19	24	361	576	456
18	22	25	484	625	550
19	21	24	441	576	504
20	20	23	400	529	460
21	21	22	441	484	462
22	17	23	289	529	391
23	15	18	225	324	270
24	21	24	441	576	504
25	25	24	625	576	600
26	17	20	289	400	340
27	25	25	625	625	625
28	23	23	529	529	529
29	24	21	576	441	504
30	25	21	625	441	525
TOTAL	**632**	**678**	**13560**	**15420**	**14346**

$$r_{xy} = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

$$r_{xy} = \frac{30(14{,}346) - (632)(678)}{\sqrt{(30(13{,}560) - (632)^2)\,(30(15{,}420) - (678)^2)}}$$

$$r_{xy} = 0.41$$

The correlation coefficient between variable X1(selection) and variable Y (Employees' Performance) is 0.41 which indicates that there is low relationship between variables.

The correlation coefficient between variable X2 (Financial Incentive System) and Y (Employees' Performance) will be shown in the following tables:

Respondent	X2	Y	$X2^2$	Y^2	X2Y
1	21	24	441	576	504
2	20	20	400	400	400
3	19	20	361	400	380
4	22	23	484	529	506
5	25	22	625	484	550
6	22	21	484	441	462
7	20	24	400	576	480
8	17	22	289	484	374
9	22	24	484	576	528
10	23	23	529	529	529
11	18	21	324	441	378
12	24	24	576	576	576
13	23	25	529	625	575
14	24	24	576	576	576
15	22	24	484	576	528
16	16	20	256	400	320
17	24	24	576	576	576
18	25	25	625	625	625
19	23	24	529	576	552
20	24	23	576	529	552
21	22	22	484	484	484
22	23	23	529	529	529
23	15	18	225	324	270
24	22	24	484	576	528
25	24	24	576	576	576
26	23	20	529	400	460
27	24	25	576	625	600
28	25	23	625	529	575
29	20	21	400	441	420
30	23	21	529	441	483
TOTAL	**655**	**678**	**14505**	**15420**	**14896**

$$r_{x2y} = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)}(n\sum y^2 - (\sum y)^2)}$$

$$r_{xy} = \frac{30(14{,}896) - (655)(678)}{\sqrt{(30(14{,}505) - (655)^2)(30(15{,}420) - (678)^2)}}$$

$$r_{xy} = 0.66$$

The correlation coefficient between variable X2(Financial Incentive System) and variable Y (Employees' Performance) is 0.66 which indicates that there is average relationship between variables.

The correlation coefficient between variable X1(Selection), variable X2 (Financial Incentive System) and Y (Employees' Performance) will be shown in the following tables:

Respondent	X1	X2	Y	X1Y	X2Y	Y2	X1X2
1	23	21	24	552	504	576	483
2	21	20	20	420	400	400	420
3	17	19	20	340	380	400	323
4	22	22	23	506	506	529	484
5	25	25	22	550	550	484	625
6	25	22	21	525	462	441	550
7	20	20	24	480	480	576	400
8	16	17	22	352	374	484	272
9	22	22	24	528	528	576	484
10	21	23	23	483	529	529	483
11	18	18	21	378	378	441	324
12	20	18	24	480	432	576	360
13	18	18	25	450	450	625	324
14	17	19	24	408	456	576	323
15	22	22	24	528	528	576	484
16	18	24	20	360	480	400	432
17	16	24	24	384	576	576	384
18	21	25	25	525	625	625	525
19	20	23	24	480	552	576	460
20	19	24	23	437	552	529	456
21	21	22	22	462	484	484	462
22	20	23	23	460	529	529	460
23	25	24	18	450	432	324	600
24	19	19	24	456	456	576	361
25	23	24	24	552	576	576	552
26	25	23	20	500	460	400	575
27	25	24	25	625	600	625	600
28	25	23	23	575	529	529	575
29	23	24	21	483	504	441	552
30	25	23	21	525	483	441	575
TOTAL	**632**	**655**	**678**	**14254**	**14795**	**15420**	**13908**

$$r_{x1x2} = \frac{n\sum x1x2 - (\sum x1)(\sum x2)}{\sqrt{(n\sum x1^2 - (\sum x1)^2)(n\sum x2^2 - (\sum x2)^2)}}$$

$$r_{x1x2} = \frac{30(13{,}908) - (632)(655)}{\sqrt{((30(13{,}908) - (632)^2)((30(14505) - (655)^2)}}$$

r_{x1x2} = 0.49

The correlation coefficient between variable X1(Selection) and variable X2 (Financial Incentive System) is 0.49 which indicates that there is low relationship between variables.

The correlation coefficient between variable X1(Selection), variable X2 (Financial Incentive System) and Y (Employees' Performance) will be calculated below:

$$Rx1x2y = \frac{\sqrt{(rX1y)^2 + (rX2y)^2 - 2(rX1y)(rX2y)(rX1X2)}}{\sqrt{1-(rX1X2)^2}}$$

$$Rx1x2y = \frac{\sqrt{(0.41)^2 + (0.66)^2 - 2(0.41)(0.66)(0.49)}}{\sqrt{1-(0.49)^2}}$$

$$Rx1x2y = 0.74$$

The correlation coefficient between variable X1(Selection), variable X2 (Financial Incentive System) and Y (Employees' Performance) is 0.74 which indicate high correlation relationship between the variables.

4. Coefficient Determination

As the value of correlation coefficient has been found, the writer is able to calculate the coefficient determination of the variables.

$$D_{xy} = r^2.100\%$$
$$D_{xy} = (0.41)^2.100\%$$
$$D_{xy} = 16.81\%$$

The coefficient determination result from the calculation indicates that 16.81% of employees' performance (variable Y) is influenced by Selection (variable X1). The remaining 83.19% reflects the influences of other factors.

$$D_{xy} = r^2.100\%$$
$$D_{xy} = (0.66)^2.100\%$$
$$D_{xy} = 43.56\%$$

The coefficient determination result from the calculation indicates that 43.56% of employees' performance (variable Y) is influenced by Financial Incentive System (variable X2). The remaining 56.44% reflects the influences of other factors.

$$D_{xy} = r^2.100\%$$
$$D_{xy} = (0.74)^2.100\%$$
$$D_{xy} = 54.76\%$$

The coefficient determination result from the calculation indicates that 54.76% of employees' performance (variable Y) is influenced by Selection (variable X1) and Financial Incentive System (variable X2). The remaining 45.24% reflects the influences of other factors like working environment, appreciation, training and etc. so it means that the selection and financial incentive system have influences to the employees' performance at PT. Surya Jaya Medan.

5. Regression Analysis

To identify the further relationship between variable X1 and Y, the writer will further determine the linear regression between the variables.

$$b = \frac{(n.\sum x1y) - (\sum x1 . \sum y)}{n.\sum x1^2 - (\sum x1)^2} \qquad a = \frac{\sum y - (b.\sum x)}{n}$$

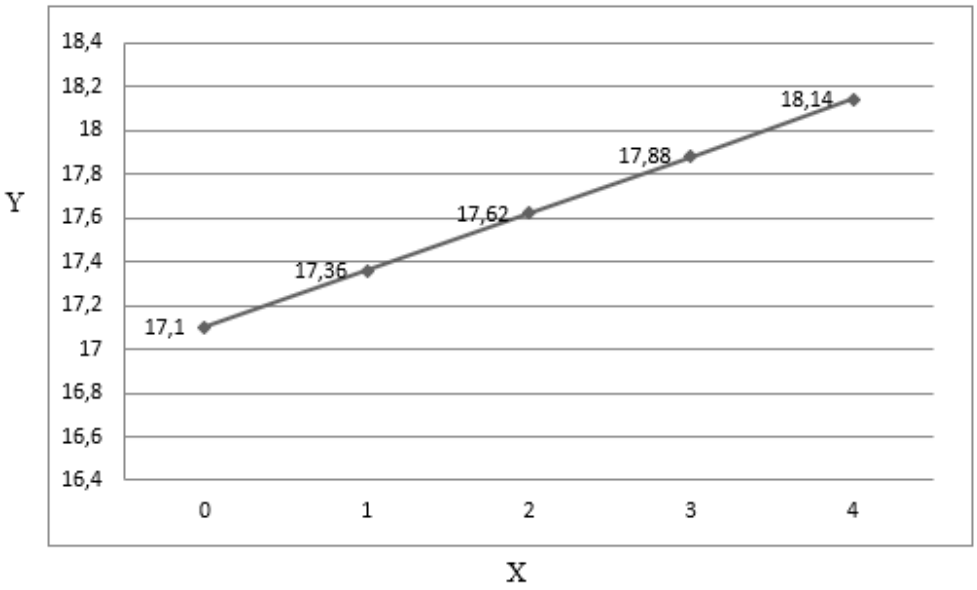
$$b = \frac{(30\,.\,14{,}346) - (632)(678)}{(30\,.\;13{,}560) - (632)^2} \qquad a = \frac{678 - (0.26\,.\,632)}{30}$$

$$b = 0.26 \qquad a = 17.1$$

The substitution of a and b to the linear regression formula.

$$\boldsymbol{y = a + bx}$$
$$y = 17.1 + 0.26x$$

X = 0 → y = 17.1 + 0.26(0) = 17.1
X = 1 → y = 17.1 + 0.26 (1) = 17.36
X = 2 → y = 17.1 + 0.26 (2) = 17.62
X = 3 → y = 17.1 + 0.26 (3) = 17.88
X = 4 → y = 17.1 + 0.26 (4) = 18.14



From the calculation and graphical chart shown above, the line of the graph is positively sloped, which means there is positive relationship between variable X1 (Selection) and variable Y (Employees' performance).

Linear regression between variable X2 and Y will be shown below:

$$b = \frac{(n.\sum x1y) - (\sum x1 \,.\sum y)}{n.\sum x1^2 - (\sum x1)^2} \qquad a = \frac{\sum y - (b.\sum x)}{n}$$

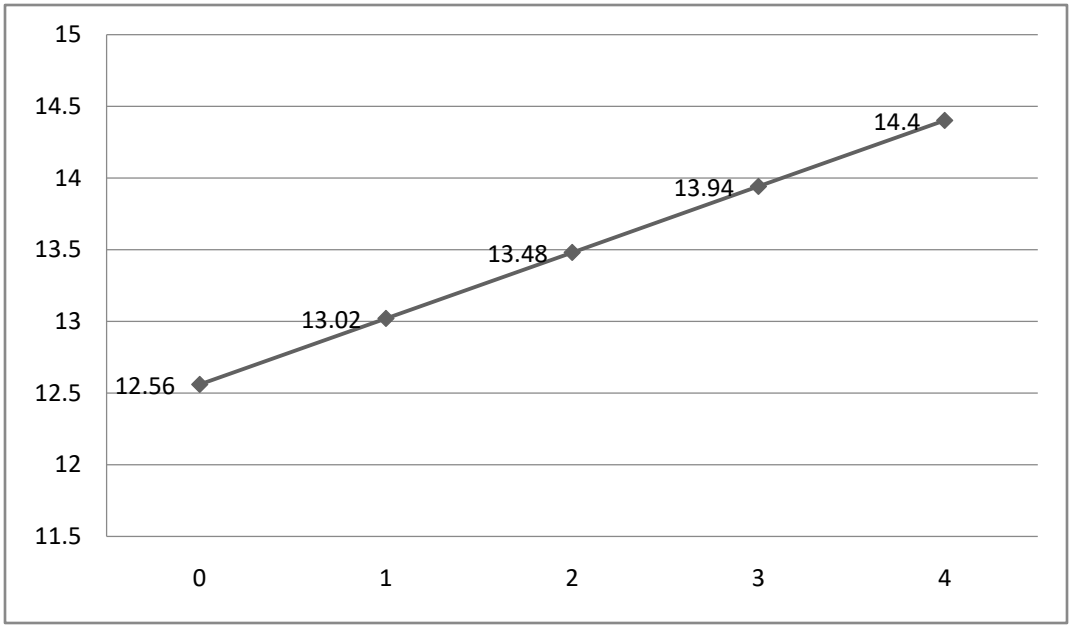
$$b = \frac{(30.\ 14{,}896) - (655)(678)}{(30\,.14{,}505) - (655)^2} \qquad a = \frac{678 - (0.46)(655)}{30}$$

$$b = 0.46 \qquad a = 12.56$$

The substitution of a and b to the linear regression formula:

$$\boldsymbol{y = a + bx}$$
$$y = 12.56 + 0.46x$$

X = 0 → y = 12.56 + 0.46(0) = 12.56
X = 1 → y = 12.56 + 0.46 (1) = 13.02
X = 2 → y = 12.56 + 0.46 (2) = 13.48
X = 3 → y = 12.56 + 0.46 (3) = 13.94
X = 4 → y = 12.56 + 0.46 (4) = 14.40



From the calculation and graphical chart shown above, the line of the graph is positively sloped, which means there is positive relationship between variable X2 (Financial Incentive system) and variable Y (Employees' performance).

To identify further relationship between variable X1, X2 and Y, the writer will further determine the multiple linear regressions between those variables, which will be shown below:

$$\boldsymbol{b1} = \frac{(\sum \boldsymbol{x2^2})(\sum \boldsymbol{x1y}) - (\sum \boldsymbol{x1x2})(\boldsymbol{x2y})}{(\sum \boldsymbol{x1^2})(\sum \boldsymbol{x2^2}) - (\sum \boldsymbol{x1x2})^2}$$

$$\boldsymbol{b1} = \frac{(\boldsymbol{14,505})(\boldsymbol{14,346}) - (\boldsymbol{13,908})(\boldsymbol{14,795})}{(\boldsymbol{13,560})(\boldsymbol{14,505}) - (\boldsymbol{13,908})^2}$$

$$\boldsymbol{b1} = \boldsymbol{0.71}$$

$$\boldsymbol{b2} = \frac{(\sum \boldsymbol{x1^2})(\sum \boldsymbol{x2y}) - (\sum \boldsymbol{x1x2})(\boldsymbol{x1y})}{(\sum \boldsymbol{x1^2})(\sum \boldsymbol{x2^2}) - (\sum \boldsymbol{x1x2})^2}$$

$$\boldsymbol{b2} = \frac{(\boldsymbol{13,560})(\boldsymbol{14,896}) - (\boldsymbol{13,908})(\boldsymbol{14,346})}{(\boldsymbol{13,560})(\boldsymbol{14,505}) - (\boldsymbol{13,908})^2}$$

$$\boldsymbol{b2} = \boldsymbol{0.76}$$

To compute a, we must take the average of each variable.

X1 = 632 / 30 = 21.06 Y = 678 / 30 = 22.6
X2 = 655 / 30 = 21.83

$$a = \text{y} - \text{b1x1} - \text{b2x2}$$

$$a = 22.6 - (0.71)(21.06) - (0.76)(21.83)$$

$$a = -8.9$$

$$\textbf{So}, \boldsymbol{y = -8.9 + 0.71x_1 + 0.76x_2}$$

It means that, in the increasing of one percent of X1 or X2, the value of Y will increase by 0.71 for X1 and 0.76 for X2.

The substitution of a, b1 and b2 into multiple linear regression formula:

X = 0 → y = -8.9 + 0.71(0) + 0.76(0) = -8.9

X = 1 → y = -8.9 + 0.71(1) + 0.76(1) = -7.43
X = 2 → y = -8.9 + 0.71(2) + 0.76(2) = -5.96

6. Hypothesis Test

In this part, the writer will do hypothesis test by using T – test and F– test. The null hypothesis and alternative hypothesis will be tested for rejection or acceptance.

The test to find out the level significance between selection and employees' performance:

$$t = \sqrt{\frac{r^2 . df}{(1 - r^2)}}$$

$$df = N - 2$$

$$t = \sqrt{\frac{0.41^2 . 28}{(1 - 0.41^2)}}$$

$$t = 10.6$$

The value will be compared with the t-table with the confidence level of 95%.
Tcount = 10.6
Ttable = 2.048
Tcount > Ttable → alternative hypothesis (Ha) is accepted

After the comparison between Tcount and Ttable, the writer conclusion is:
Null hypothesis (Ho) is rejected and Alternative hypothesis (Ha) is accepted.

The test to find out the level significance between Financial Incentive System and employees' performance:

$$t = \sqrt{\frac{r^2 . df}{(1 - r^2)}}$$

$$df = N - 2$$

$$t = \sqrt{\frac{0.66^2 . 28}{(1 - 0.66^2)}}$$

$$t = 5.72$$

The value will be compared with the t-table with the confidence level of 95%.
Tcount = 5.72
Ttable = 2.048
Tcount > Ttable → alternative hypothesis (Ha) is accepted

After the comparison between Zcount and Ztable, the writer conclusion is:
Null hypothesis (Ho) is rejected and Alternative hypothesis (Ha) is accepted.

The test to find out the level significance between selection, financial incentive system and employees' performance, the writer will use F-test as the following:

$$F = \frac{R^2(N - m - 1)}{m(1 - R^2)}$$

$$F = \frac{0.74^2(30 - 2 - 1)}{2(1 - 0.74^2)}$$

$F = 16.3$

After the comparison between Fcount and Ftable, the writer conclusion is:

Fcount > Ftable → alternative hypothesis (Ha) is accepted

Null hypothesis (Ho) is rejected and Alternative hypothesis (Ha) is accepted which mean that selection and financial incentive system have impact towards employees' performance at PT. Surya Jaya Medan.

The writer gains information from all 30 respondents as a sample through questionnaire in this research. There are 24 male respondents and 6 female respondents. There is no respondent with junior high school education level. The minimal education level of the respondents is senior high school. The total respondents with senior high school education level are 66.67%, total respondents with advance diploma education level are 20% and the total respondents with bachelor level of education are 13.33%.

From the calculation above, we can see that:

a. Validity Test for variable X1 is valid.
b. Validity Test for variable X2 is valid.
c. Validity Test for variable Y is valid.
d. Reliability Test for variable X1 is reliable.
e. Reliability Test for variable X2 is reliable.
f. Reliability Test for variable Y is reliable.
g. From the correlation coefficient test, the writer found that the correlation is 0.74 which represent that there is strong relationship between selection and financial incentive system in improving employees' performance.
h. Based on calculation of coefficient determination, the writer found that the determination coefficient is 54.76%, we can see that the percentage that selection and financial incentive system in improving employees' performance is 54.76% and the other 45.24% is influence by other factors.
i. The multiple linear regression show $\boldsymbol{y = -8.9 + 0.71x_1 + 0.76x_2}$ which means that in the increasing of one percent of Selection or Financial incentive system, the value of employees' performance will increase by 0.71 for selection and 0.76 for financial incentive system.
j. Based on the F-test result, we can see that Fcount > Ftable which means that selection and financial incentive system have impact towards employees' performance.

CONCLUSION

The writer can make some conclusions as follow:

1. Selection has influence to the employees' performance. We can see from the T test result which T count > T table, which means null hypothesis (Ho) is rejected and Alternative hypothesis (Ha) is accepted. We can also see from the determination test that 16.81% of employees' performance at PT. Surya Jaya is affected by selection. The correlation coefficient test which is 0.41 shows that selection has relationship to employees' performance.
2. Financial incentive system has influence to the employees' performance. We can see from the T test result which T count > T table, which means null hypothesis (Ho) is rejected and Alternative hypothesis (Ha) is accepted. We can also see from the determination test that 43.56% of employees' performance is affected by financial incentive system. The correlation coefficient test which is 0.66
3. It shows that financial incentive system has relationship to employees' performance.
4. Selection and Financial incentive system have influences to the employees' performance. We can see from the F test result which F count > F table, which means null hypothesis (Ho) is rejected and Alternative hypothesis (Ha) is accepted. We can also see from the determination test that 54.76% of employees' performance is affected by selection. The correlation coefficient test which is 0.74 shows that selection and financial incentive system have relationship to employees' performance.
5. From the validity test for X1, X2 and Y, the result is valid.
6. From the reliability test for X1, X2 and Y, the result is reliable.

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