CHAPTER IV
THE RESULT OF THE RESEARCH

A. Description of the Data

As it has been mentioned in the previous chapter, the sample was taken from 1 class of TKJ *(Tekhnik Komputer Jaringan)* on second grade of SMK Bismillah Padarincang. The class consists of 30 students that was analyzed their scored in order to know whether there is any correlation between students motivation in learning reading and their achievement.

In this chapter, it will be discussed and explained about the score of students motivation and the result of reading achievement which has been collected. To find out whether there is significance correlation between students motivation in learning reading and their achievement. The whole data is as follow:

1. Measure of Variable X

The result of variable X (opinion about the Student's Motivation)

51 51 53 53 54 54 54 54 54 54

55 55 56 56 56 56 56 56 56 57

57 57 58 58 59 59 60 61 61 62

To know the student's motivation, the writer gives the questionnaire as much as 15 items. Below are the data of the questionnaire:

Table 4.1

The Students' Motivation (Variable X)

No.	Respondens	ITEM															Total
1	Aan Andriyani	4	5	4	3	5	4	4	3	5	4	4	5	5	5	2	62
2	Aan Darwati	5	3	4	3	5	4	4	3	5	5	4	3	3	5	5	61
3	Abdul Haris	5	3	3	4	3	4	4	3	4	4	4	3	5	4	4	57
4	Ahmad Sunhaji	5	3	4	3	5	4	4	5	2	4	4	3	4	4	5	59
5	Ahmad Fuazi	5	5	5	3	5	4	4	3	5	4	4	3	3	4	4	61
6	Aldini Hadisusanti	5	3	4	3	5	4	4	3	5	5	3	3	3	5	5	59
7	Badrudin	4	3	4	3	5	5	4	3	2	5	4	4	2	5	5	57
8	Eva Fahriah	3	3	3	3	5	4	4	2	2	5	5	3	5	5	2	54
9	Haerudin	3	3	5	3	2	5	3	2	2	4	4	5	3	5	5	54
10	Hamdan Taufiq	5	2	5	3	5	3	3	5	5	4	3	3	3	2	2	53
11	Hamdiah	4	4	4	3	1	3	3	4	1	3	5	3	3	5	5	51
12	Iim Sobri	5	3	4	3	4	4	4	3	5	5	4	4	5	2	5	56
13	Izah Fauziah	3	3	4	3	5	4	3	3	5	3	4	5	4	4	4	54
14	Lina Helina	3	5	5	3	5	3	5	3	2	4	3	3	5	2	1	51
15	Lusi Susilawati	4	2	5	5	2	5	4	3	2	3	4	5	3	4	4	55
16	Mahdi Safrudin	4	5	4	5	1	4	4	3	5	4	5	3	3	4	4	58
17	Melita Cipta P.	4	3	4	2	2	4	4	5	5	3	4	3	5	4	4	56
18	Muarifatusolihah	3	5	5	3	5	4	3	5	2	4	4	3	2	4	4	56
19	Muhaemin	4	5	4	3	2	3	2	3	2	4	4	5	4	4	4	53
20	Nasimah	4	3	5	2	2	4	3	3	2	3	4	5	5	4	5	55
21	Nurlena	3	2	4	2	2	4	3	3	5	4	5	5	4	5	5	56
22	Nurma Amelia	4	3	4	3	5	2	3	3	2	5	4	5	5	4	4	56
23	St. Khumaedaah	4	3	4	3	2	5	3	3	5	4	3	4	3	4	4	54
24	St. Rohaniah	4	3	4	3	2	5	3	3	5	4	3	4	3	4	4	54
25	Suherman	4	3	4	3	5	2	3	3	2	5	4	5	5	5	5	58
26	Supyadi	4	4	4	4	5	2	3	3	2	5	4	5	5	5	5	60
27	Tati	4	3	4	3	5	2	3	3	2	5	4	5	5	4	4	56
28	Tating Komalasari	4	3	4	3	5	2	3	3	2	5	4	5	5	4	5	57
29	TB. Lilik Abd. Malik	4	4	5	5	4	5	2	3	3	2	5	3	4	3	4	56
30	Yani Fitriyani	4	3	4	3	5	2	3	3	2	5	4	5	5	4	4	56
	Σ																**1685**

a. To look for the range by using formula

$R = H - L + I$

$= 62 - 51 + 1$

$= 12$

b. To look for the number of class interval by using formula

$K = I + 3{,}3 \log 30$

$= I + 3{,}3 (1{,}477)$

$= I + 4{,}8741$

$= 5{,}8741$

$= 6$

c. To look for the length of class interval by using formula

$$I = \frac{R}{K}$$

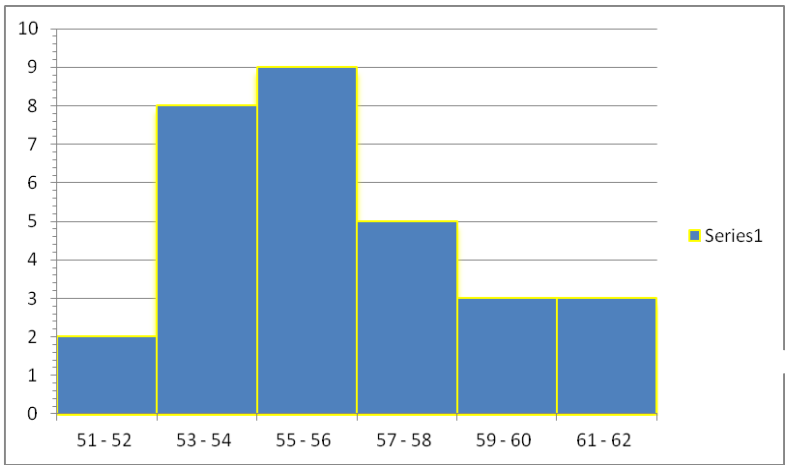
$$= \frac{12}{6} = 2$$

Table 4.2

Distribution of frequently for variable X

Class Interval	F	Xi	fxi	fk
51 - 52	2	51.5	103	2
53 - 54	8	53.5	428	10
55 - 56	9	55.5	499.5	19
57 - 58	5	57.5	287.5	24
59 - 60	3	59.5	178.5	26
61 - 62	3	61.5	184.5	30
Σ	**30**		**1681**	

Characteristic of the distribution curve.



d. Central Tendency

1. Mean

$$\bar{x} = \frac{\Sigma fxi}{N}$$

$$= \frac{1681}{30}$$

$$= 56{,}03$$

2. Median

$$Md = Bb + i\left(\frac{\frac{1}{2}N - fkb}{fi}\right)$$

$$= 54{,}5 + 2\left(\frac{15-10}{9}\right)$$

$$= 54{,}5 + 1{,}1$$

$$= 55{,}6$$

3. Mode

$$Mo = 3\,Md - 2\,\bar{x}$$

$$= 3\,(55{,}6) - 2\,(56{,}03)$$

$$= 166{,}8 - 112{,}06$$

$$= 54{,}74$$

e. Test of Distribution Normality

Table 4.3

Distribution Normality Variable X

Class Interval	f	Xi	X^2	fxi	fx^2
51 - 52	2	51,5	2652,25	103	5304,5
53 - 54	8	53,5	2862,25	428	22898
55 - 56	9	55,5	3080,25	499,5	27722,3
57 - 58	5	57,5	3306,25	287,5	16531,3
59 - 60	3	59,5	3540,25	178,5	10620,8
61 - 62	3	61,5	3782,25	184,5	11346,8
Σ	**30**			**1681**	**94423,5**

f. Standard Deviation, by using formula

$$SD = \sqrt{\frac{\Sigma fx^2}{N} - \left(\frac{\Sigma fx}{N}\right)}$$

$$= \sqrt{\frac{94423,5}{30} - \left(\frac{1681}{30}\right)}$$

$$= \sqrt{3147,45 - 56,03}$$

$$= \sqrt{3091,42}$$

$$= 1,76$$

g. To arrange the table for distribution of observation and expectation frequently.

Table 4.4

The Distribution of Observation Frequently

Class Interval	Xi	Z Score	Z Table	L
	50,5	- 3,14	0,4992	
51 - 52	52,5	-2,00	0,4772	-0,022
53 - 54	54,5	0,86	0,3051	-0,1721
55 - 56	56,5	0,27	0,1064	-0,1987
57 - 58	58,5	1,40	0,4192	0,3128
59 - 60	60,5	2,53	0,4943	0,0751
61 - 62	62,5	3,67	0,4999	0,0056

Table 4.5

Tables of calculation form the tables above

Oi	Ei	Oi –Ei	$(Oi-Ei)^2$	$\frac{(Oi-Ei)^2}{Ei}$
2	-0,66	2,66	7,0	-10,6
8	-5,16	13,2	174,2	-33,8
9	-5,96	14,9	222	-37,2
5	9,38	-4,38	-19,18	-2,0
3	2,25	0,75	0,56	0,2
3	0,17	2,83	8,0	47,1

h. To look for the score chisquare (X_2) by using formula

$$X^2 = \Sigma \frac{(Oi - Ei)^2}{Ei}$$

$$= \sum (-10,6 + -33,8 + -37,2 + -2,0 + 0,2 + 47,1)$$

$$= -36,3$$

i. To Determine the degree of freedom (df) by using formula

df = k - 3

= 6 - 3

= 3

j. Determine X^2 table

X^2 table = (0,95) (3) $\Rightarrow$ (3 = 7,81)

= 2,85

Conclusion, because X_2 score { -36,3 } < X^2 table { 7,81} the sample is normal.

2. Measure of Variable Y

The result of variable Y (Achievement in Reading)

5	5	5	6	6	6	6	6	6	7
7	7	7	7	7	7	7	7	7	7
7	8	8	8	8	8	8	8	9	9

In order to easy measure of the score, the writer arrange the data qualification by making the following table:

Table 4.6

The Students' Achievement in Reading (Variable Y)

No.	Respondens	Score
1	Aan Andriyani	9
2	Aan Darwati	9
3	Abdul Haris	8
4	Ahmad Sunhaji	7
5	Ahmad Fuazi	8
6	Aldini Hadisusanti	8
7	Badrudin	7
8	Eva Fahriah	7
9	Haerudin	5
10	Hamdan Taufiq	6
11	Hamdiah	5
12	Iim Sobri	7
13	Izah Fauziah	8
14	Lina Helina	7
15	Lusi Susilawati	7
16	Mahdi Safrudin	7
17	Melita Cipta P.	6
18	Muarifatusolihah	6
19	Muhaemin	5
20	Nasimah	6
21	Nurlena	7
22	Nurma Amelia	7
23	St. Khumaedaah	6
24	St. Rohaniah	6
25	Suherman	7
26	Supyadi	8
27	Tati	8
28	Tating Komalasari	7
29	TB. Lilik Abd. Malik	8
30	Yani Fitriyani	7
	$\sum$	**209**

a. To look for the range by using formula

R = H – L + 1

= 9 – 5 +1

= 5

b. To look for the number of class interval by using formula

K = I + 3,3 log 30

= I + 3,3 (1,477)

= 1 + 4,8741

= 5,8741

= 6

c. To look for the length of class interval by using formula

$I = \frac{R}{K}$

$= \frac{5}{6} = 0,8$

Table 4.7

Distribution of frequently for variable Y

Class Interval	f	fxi	fk
5	3	15	3
6	6	36	9
7	12	84	21
8	7	56	28
9	2	18	30
∑	**30**	**209**	

d. Central Tendency

1. Mean

$$\bar{x} = \frac{\Sigma fy\, i}{N}$$

$$= \frac{209}{30}$$

$$= 6{,}96$$

2. Median

$$Md = Bb + i\left(\frac{\frac{1}{2}N - fkb}{fi}\right)$$

$$= 6{,}5 + 2\left(\frac{15-9}{12}\right)$$

$$= 6{,}5 + 1$$

$$= 7{,}5$$

3. Mode

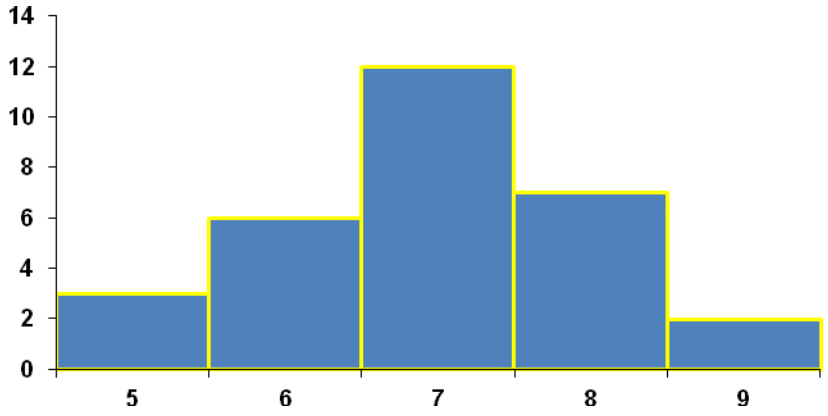
$$Mo = 3\,Md - 2y$$

$$= 3\,(7{,}5) - 2\,(6{,}96)$$

$$= 22{,}5 - 13{,}92$$

$$= 8{,}58$$

Characteristic of the distribution curve.



e. Test of Distribution Normality

Table 4.8

The Distribution of Observation and Expectation Frequently

Class Interval	f	yi	y^2	fy	fy^2
5	3	5	25	15	75
6	6	6	36	36	216
7	12	7	49	84	588
8	7	8	64	56	448
9	2	9	81	18	162
∑	**30**	**∑**	**255**	**209**	**1489**

f. Standard Deviation, by using formula

$$SD = \sqrt{\frac{\Sigma fy^2}{N} - \left(\frac{\Sigma fy}{N}\right)}$$

$$= \sqrt{\frac{1489}{30} - \left(\frac{209}{30}\right)}$$

$$= \sqrt{49{,}63 - 6{,}96}$$

$$= \sqrt{42{,}67}$$

$$= 6{,}53$$

g. To arrange the table for distribution of observation and expectation frequently.

Table 4.9

Table for Distribution and Expectation Frequently

Class Interval	Xi	Z Score	Z Table	L
	4,5	- 0,38	0,1480	
5	5,5	-0,22	0,0871	- 0,0609
6	6,5	-0,07	0,0279	-0,0592
7	7,5	0,08	0,0310	-0,0031
8	8,5	0,24	0,0948	0,0638
9	9,5	0,39	0,1517	0,0569

Table 4.10

Tables of calculation form the tables above

Oi	Ei	Oi - Ei	$(Oi - Ei)^2$	$\frac{(Oi - Ei)^2}{Ei}$
3	-1,83	4,83	23,3	-12,7
6	-1,78	7,78	60,5	-33,9
12	-0,09	12,1	146,4	-1,63
7	1,91	5,09	25,9	13,56
2	1,70	0,3	0,09	0,05

h. To look for the score chi square (X_2) by using formula

$$X^2 = \Sigma \frac{(Oi - Ei)^2}{Ei}$$

$$= \sum (-12,7 + -33,9 + -1,63 + 13,56 + 0,05)$$

$$= -34,64$$

i. To arrange/determine the degree of freedom (df) by using formula

$$df = k - 3$$

$$= 5 - 3$$

$$= 2$$

j. Determine x^2 table

$$Y^2 \text{ table} = (0,95)\ (2)$$

$$= 1,9$$

Conclusion, because X^2 score (-34,64) < X^2 table (5,99) the sample is normal.

Table 4.11

The Data Variable X and Y

No	X	Y	X2	Y2	XY
1	62	9	3844	81	558
2	61	9	3721	81	549
3	57	8	3249	64	456
4	59	7	3481	49	413
5	61	8	3721	64	488
6	59	8	3481	64	472
7	57	7	3249	49	399
8	54	7	2916	49	378
9	54	5	2916	25	270
10	53	6	2809	36	318
11	51	5	2601	25	255
12	56	7	3136	49	392
13	54	8	2916	64	432
14	51	7	2601	49	357
15	55	7	3025	49	385
16	58	7	3364	49	406
17	56	6	3136	36	336
18	56	6	3136	36	336
19	53	5	2809	25	265
20	55	6	3025	36	330
21	56	7	3136	49	392
22	56	7	3136	49	392
23	54	6	2916	36	324
24	54	6	2916	36	324
25	58	7	3364	49	406
26	60	8	3600	64	480
27	56	8	3136	64	448
28	57	7	3249	49	399
29	56	8	3136	64	448
30	56	7	3136	49	392
	1685	**209**	**94861**	**1499**	**11800**

B. The Data Analysis

After the calculation of whole the data from variable (x), and variable (y), the next step is to statistical data analysis in order to insert the information from the Table into the raw score formula (Product Moment) to find the correlation index, as follows:

1. Testing the influence of variable X and variable Y, by using product moment formula

$$r_{xy} = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{N\Sigma X^2 - (\Sigma X)^2\}\{N\Sigma Y^2 - (\Sigma Y)^2\}}}$$

$$= \frac{30(11800) - (1685)(209)}{\sqrt{(30(94861) - (1685)^2)(30(1499) - (209)^2)}}$$

$$= \frac{354000 - 352165}{\sqrt{(2845830 - 2839225)(44970 - 43681)}}$$

$$= \frac{1835}{\sqrt{(6605)(1289)}}$$

$$= \frac{1835}{2917{,}85}$$

$$= 0{,}63$$

C. Coefficient of Correlation

To look for correlation between students' motivations and their achievement in reading is used the technique of product correlation as follow:

1. Test significance of coefficient correlation

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

$$= \frac{0{,}63\sqrt{30-2}}{\sqrt{1-0{,}63^2}}$$

$$= \frac{3{,}333}{\sqrt{0{,}603}}$$

$$= \frac{3{,}333}{0{,}776}$$

$$= 4{,}295$$

2. Determine t score by using test of significant

df = N – 2 (Nr)

= 30 – 2

= 28

3. Determine t table

t table = (0,95) (28)

= 26,6

4. Coefficient determinacy variable X and variable Y

CD = r^2 x 100%

= $(063)^2$ x 100%

= 0,3969 x 100%

= 39,69%

D. Hypothesis Testing

In this section, the writer test H_0 which is saying that there is no correlation between students' motivation in learning reading and their achievement. and the alternative hypothesis (Hi) says that there is correlation between students' motivation in learning reading and their achievement.

To test hypothesis, the writer uses product moment correlation technique with the criterion.

Ho : It is accepted of "r" observed is less then "r" table

Hi : It is accepted if "r" observed is greater then "r" table

Form of the calculation abase, The writer gets the correlation coefficient of both variables is "r" table in which df = N – 2 = 30 –

2 = 28 in significance level 5% is 0,361 and significance level 1% is 0,463.

Since “r” observed is greater than “r” table (ro > r table) so he can conclude that value is significant and it means there is significance between students’ motivation in learning reading and their achievement.

E. Interpretation

For the result of compotation coefficient correlation, the writer has decided the formula for the degree of freedom (df) – df = N – 2 (df = 30 – 2 = 28) and level significance chosen is 5%, it is obtained that “r” observed is 0,361 (ro > r table). It means that there is significance relationship between students’ motivation and their achievement in reading.

Based on the result of the research, the writer concluded that there is significant correlation or there is correlation between students’ motivation in learning reading and their achievement. The writer has stated the criteria based on Anas Sudijono, as follow:

"r" Product Moment (r_{xy})	Interpretation
0,00 – 0,20	Between variable X and Y there are correlation, but the correlation is very low until ignored.
0,20 – 0,40	Between variable X and Y there are low correlation
0,40 – 0,70	Between variable X and Y there are fair correlations.
0,70 – 0,90	Between variable X and Y there are high correlation
0,90 – 100	Between variable X and Y there are very high correlation.

"r" obtained that the writer is 0,63 and is lies between 0,40 – 0,70, so the correlation is fair.

Based on the research, it is clear that there is significant correlation between students' motivation and their achievement in reading.

F. The Heterogeneity and Normality Test of the Data

1. Heterogenity Test of the Data

One important assumption of the classical linear regression model is that the disorder εIthat obtained from the population of regression is homoskedastik and all disturbances have the same variance. Heteroscedasticity is one of the classical linear regression assumption violations, in example where the variance of the interference is no longer constant. Usually heteroskedasticity problems often occur in cross-sectional data than in time series data.

To see homokedastisitas or heterogeneity of the data, the hypothesis must be concluded as follows:

Ho : There is no heterokedastisitas

H1 : There is heterokedastisitas

If the probability value of *Sig* > 0.05 Ho is accepted. If the probability of *Sig* < 0.05 Ho is rejected. To see the result of heterokedastisitas, the writer use SPSS data analysis to find out the result, the result and the explanations are belows:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-187.008	92.94		-2.012	.054
	Motivation	3.973	.900	.640	4.413	.000

a. Dependent Variable: Students' Motivation

Based on the tabe above table, it can be seen that the value of *Sig* variable 0.54 > 0.05, therefore Ho is accepthed. It means that there is no heterokedastisitas between the two variable, and the data given is homogen. In conclusion, there is a homogeniety on the data.

2. Normality Test of the Data

The purpose of the normality test of the data is to find of whether the whether the distribution of the data is normal or not. There are two ways to find out whether the distribution of the data is normal. The first is through histogram graphic and the second is through the Normal P-Plot Standard Residual. If the distribution of the data is normal, it will show a line it means that the distribution of the data spread normally.

To analyze the data, the probability value must be decided, and the probability value (α) for the normality test of the data is 0.05.

The Hypothesis:

Ho : Distribution of the data normal

H1 : Distribution of the data is not normal

If the probability value α is > . Ho is accepted, but if the probability value α is < than . Ho is rejected and H is accepted. To find out whether the distribution is normal, the result of the distribution can be seen on the table below:

One-Sample Kolmogorov-Smirnov Test

		Achieve Reading	Motivation
N		30	30
Normal Parameters[a]	Mean	6,96	56,03
	Std. Deviation	6,53	1,76
Most Extreme Differences	Absolute	.146	.119
	Positive	.072	.119
	Negative	-.146	-.102
Kolmogorov-Smirnov Z		.801	.651
Asymp. Sig. (2-tailed)		.543	.791

a. Test distribution is Normal.

Based on the table above, the value of probability of α is normal. The value of reading speed and reading motivation is bigger than the probability value. The assumption is 543 and 791 > 0.05, which means that the data distributed normally. Therefore Ho is accepted and H1 is rejected.

G. Discussion

The acceptance of the alternative hypothesis implies that there is a correlation between students' motivation and their achievement in reading. One interesting finding in this study is that better the students apply their knowledge.

During the field research the writer did not find that the students mostly found it more difficult to use the words English language. On the previous chapter, has been discussed about the mastery of students.

From the above quotation, it can be concluded that the value for calculated "r" obtained that the writer is 0,63 and is lies between 0,40 – 0,70. It is said that the classification of the correlation can be categorized as fair correlation. It means that there is a fair correlation between students' motivation in learning reading and their achievement.