

CHAPTER IV

RESULT OF THE RESEARCH

As it has been mentioned in the previous chapter that the sample was taken from one class of Madrasah Aliyah Negeri (MAN) 4 Tangerang. It is the second years students. The class consist of 25 students. There are two data in this research, the first is data from speaking test and the second is data from questionnaires. It has been analyzed the results of student self confidence and speaking achievement. Then, this chapter shows the correlation between them. The whole data is as follow:

A. Data Self-confidence from questionnaires

The data of self-confidence questionnaires and statistic analyzed can be seen below:

Table 4.1

The conversion of whole X variable

No.	Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	X
1	AUN	2	2	1	3	3	3	3	5	5	3	2	2	3	2	2	2	43
2	AF	1	1	1	4	2	2	1	4	3	1	2	1	2	2	2	3	32
3	A	1	1	1	2	1	2	2	4	3	4	2	2	2	1	2	2	32
4	AW	2	3	2	3	4	3	3	4	4	3	3	2	2	2	2	3	45
5	DAG	3	2	2	3	3	4	3	4	4	4	2	3	2	2	1	2	44
6	EK	2	1	2	3	3	2	2	5	4	3	3	2	2	3	3	3	43
7	HN	1	1	1	3	2	2	1	5	3	2	2	2	1	1	2	2	31
8	HM	1	1	1	2	3	1	1	3	2	3	1	2	1	2	1	1	26
9	II	1	1	1	2	2	1	2	3	2	1	1	1	1	1	2	1	23
10	IL	1	2	1	2	1	1	2	3	2	2	2	1	1	1	2	1	25
11	L	2	1	2	4	3	2	3	4	3	4	3	3	2	1	2	3	42
12	MM	3	4	2	4	4	4	4	5	2	2	3	3	2	3	2	1	48

13	MU	3	3	3	3	4	4	3	5	5	3	3	4	3	4	3	4	57
14	M	2	4	3	3	4	4	4	5	2	2	3	4	3	3	2	3	51
15	NZN	5	3	2	5	4	5	5	5	5	3	5	4	4	1	4	5	65
16	NA	2	1	1	2	2	3	3	5	3	3	2	2	4	3	4	3	43
17	SN	2	1	1	3	1	2	2	3	2	3	2	2	1	1	2	3	31
18	YS	2	1	1	4	3	2	2	5	3	3	1	2	1	3	3	3	39
19	HT	2	2	2	4	3	4	3	5	3	2	1	1	1	1	1	1	36
20	IO	1	2	2	3	3	3	2	4	3	3	2	2	3	2	2	2	39
21	AD	5	3	2	5	4	5	5	5	5	3	5	4	4	1	4	5	65
22	DD	2	1	1	2	2	3	3	5	3	3	2	2	4	3	4	3	43
23	KRT	2	1	1	3	1	2	2	3	2	3	2	2	1	1	2	3	31
24	MS	3	3	3	3	4	4	3	5	5	3	3	4	3	4	3	4	57
25	SM	1	1	1	4	2	2	1	4	3	1	2	1	2	2	2	3	32
Total																		1023
Average/Mean																		40.92

The table shows that total scores from 25 students are 1023. The mean or average is 40,92.

In addition, the value of each student is sorted from the smallest to the largest, it will be easier to analyze. As can be seen below:

An analysis of whole X variable

23 25 26 31 31 31 32 32 32 36

39 39 42 43 43 43 43 44 45 48

51 57 57 65 65

Those data analyze to variable X condition by using statistical formulation in the following:

a. Find out ranges

$$\begin{aligned} R &= X_{\max} - X_{\min} \\ &= 65 - 23 = 42 \end{aligned}$$

b. Looking for the class interval (K)

$$\begin{aligned} K &= 1 + 3,3 \log (n) \\ &= 1 + 3,3 \log (25) \\ &= 5,61 \text{ round } 6 \end{aligned}$$

c. Looking for long class interval (P)

$$\begin{aligned} P &= \frac{R}{K} \\ &= \frac{42}{6} \\ &= 7 \end{aligned}$$

Explanation:

P = Long class interval

R = Ranges

K = Class interval

Table 4.2

Distribution Frequency of Self Confidence

Interval	F	Xi (midpoint)	FX	X	X ²	FX ²
23 – 29	3	37,5	112,5	-3,42	11,6964	35,0892
30 – 37	7	48,5	339,5	7,58	57,4564	402,1948
38 – 44	8	60	480	19,08	364,0464	2912,371
45 – 51	3	70,5	211,5	29,58	874,9764	2624,929

52 – 58	2	81	162	40,08	1606,406	3212,813
59 – 65	2	91,5	183	50,58	2558,336	5116,673
Total	25		1488,5			14304,07

According to the table above, there are 6 class of interval, then long class interval is 7. Additionally, total Frequency is 25. After calculates from the data obtained $\sum FX$ is 1488,5 and $\sum FX^2$ is 14304,07. Some explanation about table can be seen below:

F = Frequency

Xi(midpoint) = $\frac{\text{Lower class limit} + \text{upper class limit}}{2}$

FX = F x midpoint

X = Xi – mean

Based on the table distribution frequency of self-confidence.

The researcher search standard of deviation by using formula:

$$\begin{aligned}
 SD &= \sqrt{\frac{\sum fx^2}{\sum f}} \\
 &= \sqrt{\frac{14304,07}{25}} \\
 &= \sqrt{572.1628} \\
 &= 23,91
 \end{aligned}$$

To look limits class by using formula:

$$B = \text{lower limits class} - 0,5$$

To look for Z score by using formula

$$Z1 = \frac{B - \text{Mean}}{SD}$$

$$= \frac{22,5 - 40,92}{23,91} = -0,77$$

$$Z2 = \frac{29,5 - 40,92}{23,91} = -0,47$$

$$Z3 = \frac{37,5 - 40,92}{23,91} = -0,14$$

$$Z4 = \frac{44,5 - 40,92}{23,91} = 0,14$$

$$Z5 = \frac{51,5 - 40,92}{23,91} = 0,44$$

$$Z6 = \frac{58,5 - 40,92}{23,91} = 0,73$$

Table 4.3

To arrange the table for expected in frequently

Class Interval	B	Z score	Z table	L	F	Fh
23 - 29	22,5	-0,77	0,2206	-0,0986	3	-2,465
30 - 37	29,5	-0,47	0,3192	-0,1251	7	-3,1275
38 - 44	37,5	-0,14	0,4443	-0,1114	8	-2,785
45 - 51	44,5	0,14	0,5557	-0,1143	3	-2,8575
52 - 58	51,5	0,44	0,6700	-0,0973	2	-2,4325
59 - 65	58,5	0,73	0,7673	-0,0788	2	-1,97

(F-Fh)	(F-Fh) ²	(F-Fh) ² /Fh
5,465	29,86	-12,1135
10,1275	102,56	-32,7929
10,785	116,31	-41,7630
5,8575	34,31	-12,0069
4,4325	19,64	-8,0739
3,97	15,76	-8
Total		-114,7

Degree of freedom can be seen below:

$$k = \text{variables} = 2$$

$$n = \text{respondents} = 25$$

$$DF = n - k$$

$$= 25 - 2$$

$$= 23 \rightarrow X^2 \text{ table} = 1,71387$$

Based on the table above, X^2 score = -114,7 and X^2 table = 1,71387, so X^2 score < X^2 table and that sample is normal. The normality test shows the results of self-confidence is suitable for the normality.

Table 4.4

Data Distribution of Self-Confidence Interval

Score	Number of students	Categories	Percentages
61-80	2	high confidence	8%
38-60	13	Average	52%
16-37	10	Low confidence	40%

It was revealed that from the questionnaire, the three levels of self-confidence were all perceived by the students with different numbers; two of the students in high level self-confidence or the frequency can be seen in the amount of 8%, Thirteen students in average self- confidence or 52%, and ten students who has low self-confidence level or 40%.

B. Data Speaking achievement

This research has two variables. The Y variable is speaking achievement. To get the data from this variable, the researcher conducted oral test. The material of speaking test is about expression of advice. The tables below shows the result of students' speaking achievement.

Table 4.5

The conversion of whole Y variable

No.	Initial Name	Criteria					Score
		Grammar	Vocabulary	Pronunciation	Fluency	Comprehension	
1	AUN	2	3	3	2	3	13
2	AF	2	2	2	2	3	11
3	A	3	2	3	2	4	14
4	AW	3	3	3	3	3	15
5	DAG	2	2	4	3	3	14
6	EK	2	3	4	4	3	16
7	HN	2	2	2	2	2	10
8	HLM	2	2	2	2	2	10
9	II	2	3	4	3	3	15
10	IL	2	3	4	3	2	14
11	L	3	3	5	3	3	17
12	MM	5	5	5	5	5	25
13	MU	4	4	5	4	3	20
14	M	3	3	5	3	5	19
15	NZN	3	4	5	4	4	20

16	NA	3	3	5	3	3	17
17	SN	2	3	4	3	3	15
18	YS	2	2	4	3	3	14
19	HT	2	3	3	3	3	14
20	IO	2	3	3	3	3	14
21	AD	2	3	5	4	3	17
22	DD	2	3	3	3	3	14
23	KRT	2	2	4	4	3	15
24	MS	2	3	5	2	3	15
25	SM	2	2	2	2	2	10
N=25	Total						378
	Average						15.12

Based on students speaking test, total scores from 25 students are 378. Then, mean or average is 15,12. Additionally, the value of each student is sorted from the smallest to the largest, it will be easier to analyze. As can be seen below:

An analysis of whole Y variable

10 10 10 11 13 14 14 14 14

14 14 14 15 15 15 15 15 16

17 17 17 19 20 20 25

Those data analyze to variable Y condition by using statistical formulation in the following:

d. Find out ranges

$$\begin{aligned} R &= Y_{\max} - Y_{\min} \\ &= 25 - 10 \\ &= 15 \end{aligned}$$

e. Looking for the class interval (K)

$$\begin{aligned} K &= 1 + 3,3 \log (n) \\ &= 1 + 3,3 \log (25) \\ &= 5,61 \text{ round } 6 \end{aligned}$$

f. Looking for long class interval (P)

$$\begin{aligned} P &= \frac{R}{K} \\ &= \frac{15}{6} \\ &= 2,5 \text{ round } 3 \end{aligned}$$

Explanation:

P = Long class interval

R = Ranges

K = Class interval

Table 4.6

S

Interval	F	Yi (midpoint)	FY	Y	Y ²	FY ²
10 – 12	4	11	44	-4,12	16,97	67,88
13 – 15	13	14	182	-1,12	1,25	16,25
16 – 18	4	25	100	9,88	97,61	390,44
19 – 21	3	20	60	4,88	23,81	71,43
22 – 24	0	23	0	7,88	62,09	0
25 – 27	1	26	26	10,88	118,37	118,37
Total	25					596,49

Achievement Interval

According to the table above, there are 6 class of interval, then long class interval is 3. Additionally, total Frequency is 25. After calculates from the data obtained $\sum FY^2$ is 596,49. Some explanation about table can be seen below:

F = Frequency

Yi(midpoint) = $\frac{\text{Lower class limit} + \text{upper class limit}}{2}$

Y = Yi - mean

FY = F x midpoint

Based on the table distribution frequency of self-confidence.

The researcher search standard of deviation by using formula:

$$\begin{aligned} \text{SD} &= \sqrt{\frac{\sum fy^2}{\sum f}} \\ &= \sqrt{\frac{596,49}{25}} \\ &= \sqrt{23,8596} \\ &= 4,88 \end{aligned}$$

To look limits class by using formula:

$$B = \text{lower limits class} - 0,5$$

To look for Z score by using formula

$$\begin{aligned}
 Z1 &= \frac{B - \text{Mean}}{SD} \\
 &= \frac{9,5 - 15,12}{4,88} = -1,15 \\
 Z2 &= \frac{12,5 - 15,12}{4,88} = -0,53 \\
 Z3 &= \frac{15,5 - 15,12}{4,88} = -0,38 \\
 Z4 &= \frac{18,5 - 15,12}{4,88} = 0,69 \\
 Z5 &= \frac{21,5 - 15,12}{4,88} = 1,30 \\
 Z6 &= \frac{24,5 - 15,12}{4,88} = 1,92
 \end{aligned}$$

Table 4.7

To arrange the table for expected in frequently

Class Interval	B	Z score	Z table	L	F	Fh
10 – 12	9,5	-1,15	0,1251	-0,173	4	-4,325
13 – 15	12,5	-0,53	0,2981	-0,0539	$\frac{1}{3}$	-1,347
16 – 18	15,5	-0,38	0,3520	-0,4029	4	-10,0725
19 – 21	18,5	0,69	0,7549	-0,1483	3	-3,7075
22 – 24	21,5	1,30	0,9032	-0,0694	0	-1,735
25 – 27	24,5	1,92	0,9726	-0,0217	1	-0,542

(F-Fh)	(F-Fh) ²	(F-Fh) ² /Fh
-17,3	299,29	-69,2
-17,5	306,25	-227,35
-40,29	1623,28	-161,15

-11,12	123,65	-33,35
0	0	0
-0,542	0,29	-0,53
Total		-491,56

Explanations:

$L = 0,1251 - 0,2981$ and so on
until the end of rows interval.

$N = \text{Total of students} = 25$

$Fh = L \times N$

Degree of freedom can be seen below:

$k = \text{variables} = 2$

$n = \text{respondents} = 25$

$DF = n - k$

$= 25 - 2$

$= 23 \rightarrow Y^2 \text{ table} = 1,71387$

Based on the table we can know that $Y^2 \text{ score} = -491,58$ and $Y^2 \text{ table} = 1,71387$, so $Y^2 \text{ score} < Y^2 \text{ table}$ and that sample is normal. The normality test shows the results of self-confidence is suitable for the normality.

Table 4.8

Distribution of Students' Speaking Achievement

No	Score	Number of	Category	Percentage
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	Interval	Students		
1	21 – 25	1	Very good	4%
2	16 – 20	7	Good	28%
3	10 – 15	17	Average	68%
4	5 – 9	-	Poor	-
5	0 – 4	-	Very poor	-

Based on the distribution above, the result showed that one student has very good speaking achievement or the frequency can be seen in the amount of 4%, the students has good speaking achievement are seven students or 28%, the students has average speaking achievement are seventeen students or 68%. Thus, it can be assumed that most of students at Madrasah Aliyah Negeri (MAN) 4 Tangerang on second year have average speaking achievement.

Table 4.9

The Correlation between X and Y Variable

No	X	Y	X ²	Y ²	XY
1	43	13	1849	169	559
2	32	11	1024	121	352
3	32	14	1024	196	448
4	45	15	2025	225	675
5	44	14	1936	196	616
6	43	16	1849	256	688

7	31	10	961	100	310
8	26	10	676	100	260
9	23	15	529	225	345
10	25	14	625	196	350
11	42	17	1764	289	714
12	48	25	2304	625	1200
13	57	20	3249	400	1140
14	51	19	2601	361	969
15	65	20	4225	400	1300
16	43	17	1849	289	731
17	31	15	961	225	465
18	39	14	1521	196	546
19	36	14	1296	196	504
20	39	14	1521	196	546
21	65	17	4225	289	1105
22	43	14	1849	196	602
23	31	15	961	225	465
24	57	15	3249	225	855
25	32	10	1024	100	320
Total	1023	378	45097	5996	16065

According to the table above that total each items of variable, as know X is 1023, Y is 378, X^2 is 45097, Y^2 is 5996, XY is 16065.

C. Correlation Analysis

Based on the result of the score above, it can be described as follows:

$$N : 25$$

$$\sum X : 1023$$

$$\sum Y : 378$$

$$\sum X^2 : 45097$$

$$\sum Y^2 : 5996$$

$$\sum XY : 16065$$

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 follow :

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

$$r_{xy} = \frac{(25 \times 16065) - 1023 \times 378}{\sqrt{((25 \times 45097) - 1023^2) ((25 \times 5996) - (378)^2)}}$$

$$r_{xy} = 0,6$$

Based on the calculation r_{xy} is 0,6. It has indicated that the correlations between two variables is 0,6.

D. Examining Hypothesis significant correlation

After calculates the correlation, the researcher was taking the hypothesis significance of correlation with examining t_{score} . As follow the calculates below:

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

$$= \frac{2,87}{0,8}$$

$$= 3,5$$

The last step is Determining Degree of Freedom (*df*)

$$\begin{aligned} t_{\text{table}} &= n - 2 \\ &= 25 - 2 = 23 = 1,71387 \end{aligned}$$

At the degree of significance 5% = 1,701

At the degree of significance 1% = 2,467

$$t_{\text{score}} > t_{\text{table}}$$

E. The Interpretation of the Data

After the writer preceded the formula, as it has been found out about the result of the correlation, the next step is to give the interpretation of “r” score (r_{xy}).

1. From the data appeared that the correlation between variable X and variable Y is 0,6. It means the correlation is strong enough between two variables. To give the simple interpretation toward a correlation “r” Product Moment (r_{xy}) can be seen by the table of the Interpretation of Product Moment Score.

Table 4.10

Interpretation of Product Moment Score

Coefficient of correlation “r”	Interpretation
0.00 – 0.20	The Correlation is Neglected
0.20 – 0.40	The Correlation is Weak

0.40 – 0.70	The Correlation Strong Enough
0.70 – 0.90	The Correlation Strong
0.90 – 1.00	The Correlation is Very strong

Looking at the score $r_{xy} = 0,6$ that score is between 0,40 – 0,70 which is the correlation between the two variables is strong enough, it means there is correlation between variable X and variable Y.

To know degree of correlation (CD), the researcher using determination coefficient:

$$\begin{aligned}
 \text{CD} &= r^2 \times 100\% \\
 &= 0,36 \times 100\% \\
 &= 36\%
 \end{aligned}$$

It can be identified that the correlation between two variables are 36%