

CHAPTER III METHOD OF RESEARCH

A. Method of Research

According to Sugiyono (2017:2) “*Method of research is basically a scientific way to get a data with the purpose and functions*”. In this research, the researcher uses quantitative research, that is associative clausal, because there are variables that will be examined the relationship between them and the purpose is to give a picture of the relationship between those variables.

According to Sugiyono (2017:8), quantitative research is “*A research method that is based on positivisme philosophy that is used for searching specific sample or population, collecting data using research instrument, quantitative data analysis or statistic with the purpose of examining the*

hypothesis". Associatif research, is defined by Sugiyono (2017:37) as "*A formulation of problem that research the connection between two variables or more*". According to Sugiyono (2017:37) "*Clausal relationship is the cause and effect of a relationship*".

The method used, is the same as the research purpose which is "The Influence of Leadership and Discipline to Employee Performance in PT. Bank Mandiri Tbk. Bogor Branch".

B. Measurement Variable

According to Sugiyono (2017:39) variable is "An attribute or the nature or value of people object or an activity that has types of variant that is established by the researcher to study and to get a conclusion. According to the title "The Influence of Leadership and Discipline to Employee Performance in PT. Bank Mandiri Tbk. Bogor Branch", so the variables of research are two kinds which is independent variable and dependent variable.

1. Independent Variable (X)

According to Sugiyono (2017:39) "Independent variable is a variable that is called often as stimulus variable, predictor, antecedent". In this

research, there are 2 types of independent variable which is Leadership (X1) and Discipline (X2).

2. Dependent Variable (Y)

According to Sugiyono (2017:39) “Dependent Variable is often called output variable, criteria, consequences”. Attached Variable, is a variable that is influenced or is the cause because there is an independent variable. The dependent variable, in this research is the Employee Performance (Y).

From the above explanation, the operational variable is:

Table 3.1.
Operational Variable

Variable	Indicator	Scale of Measurement
Leadership (X1)	a. Analytical Ability b. Skills 1. Skills in Communicating 2. Skills in Problem Solving 3. Agent of Change	Ordinal
Discipline (X2)	a. Purpose and Skill b. Leader as a role model c. Remuneration d. Supervise e. Punishment f. Responsible g. Absent Rate	Ordinal
Performance (Y)	a. Quality b. Quantity c. On Time d. Effectively using its resource	Ordinal

Variable	Indicator	Scale of Measurement
	e. Independent f. Commitment	

Operational variable is a process of defining a concept to operational definition and ordinal scale is a scale that gives information in a relative amount of characteristics that is different, that is owned by an object or a specific individual. An example is an answer to question's according to the rate such as strongly disagree, disagree, neutral, agree and strongly agree that is given using a symbol from 1,2,3,4 and 5.

C. Research Population and Sample

1. Population

According to Sugiyono (2017:80) *Population is a generalization area, that consist of objects or subjects that has the quality and specific characteristics that is going to be researched by the researcher and pulled into conclusion.* The population in this research, is all of the employees in PT. Bank Mandiri Bogor Branch with a total of 150 employees.

2. Sample

According to Sugiyono (2017:81) *Sample is defined as Sample is a part of the total and characteristics that a population has. If the population is big and the researcher is unable to learn all there is in the population because of limit of funds, power and time, then the researcher can use a sample, that is taken from the population.* In this research, the sample technique that is used is sampling probability, that is approaching to

random sampling and simple random is used. According to Sugiyono (2017:81), *Sample technique is the technique of taking a sample.* According to Sugiyono (2017:82), *Sampling is a technique of getting a sample, that gives a chance to every member to be chosen to be the sample members.* According to Sugiyono (2018:85) "Purposive Sampling is a technique to determine a sample with criteria's.

The amount of sample that will be taken using the Slovine equation is :

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

Information:

N= Amount of Population

n=Sample size that will be used

E=Margin of Error, for inaccuracy due to sampling errors that can still be tolerated by 5%

By using the above formula, the sample that is used is:

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

$$n = \frac{150}{(1 + (150)(0,05)^2)}$$

$$n = 109 \text{ sample}$$

So, the number of sample that will be used in this research is 48 respondents

According to Sugiyono (2017:86). it discusses about the total sample. *The total members, of a sample is often called the sample size. The 100% of a sample, representing a population is the same as the population itself.* The bigger the sample, as the population then the chance of getting mistakes smaller and vice versa, the smaller the sample then the bigger the mistake of the population.

D. Method of Collecting Data

1. Data Resource

The data resource that is needed in this research is primary data. According to Sugiyono (2017:137), *Primer data is a data resource that straight away gives data to the data collector.* The primary data in this resource, is getting data directly from the management parties in PT. Bank Mandiri Tbk, through an interview and also by spreading questioners to all the employees in Bank Mandiri Bogor Branch, that are the respondents and represent the population, in which the respondents gives an answer about the influence of leadership and discipline to employee performance in PT. Bank Mandiri Tbk. Bogor Branch.

2. Collecting data technique

The technique of collecting data is needed to get an answer in this research. The research is done by implementing field research that is used to get primary data straight away that involves the respondents to be the sample in this research. The field research being used is:

a. Questionnaire

Questionnaire is a collecting data technique that is used by spreading questions for the respondents to answer. Questionnaire is a collecting data technique, with the aim of getting relevant information about the variables that will be researched.

b. Library Research

In this library research, the writer collects data and studies all kinds of theories and concept that relates to the problem being researched. The theories and concept is from the books, journals and relevant books that the writer use as a resource.

c. Online Research

The collecting data technique, is from websites that is needed to get information in doing this research.

d. Research Instrument

According to Sugiyono (2017:2012), *Research instrument, is a tool used to measure the phenomenon of the nature or social that is being researched.* The instrument being used in this research, is the communication technique which is questionnaire. According to Sugiyono (2017:142), *questionnaire is a collecting data technique that is done by asking questions or written questions for the respondents to answer.* The type of questionnaire is the close type of questionnaire, which is filled with questions and an alternative answer that the respondents can choose. In the operational variable, the researcher uses ordinal scale. Ordinal scale is used to give information to an answer. Every operational variable is measured using a measurement

instrument in a form of questionnaire with ordinal scale, that fulfills the statement of likert scale type. According to Sugiyono (2017:93), *Likert scale, is used for measuring the behavior opinion and the perception of someone or a group, about a social phenomenon. In the research, social phenomenon is set in a specific way by the researcher and then it would be called research variable.* To measure the respondent behavior, according to every question, it uses a Likert Scale from 1-5 as follows:

Table 3.2
Likert Scale

Statement	Abbreviation	Abbreviation
Strongly Disagree	STS	1
Disagree	TS	2
Neutral	N	3
Agree	ST	4
Strongly Agree	SS	5

E. Method of Data Analysis

The method of data analysis is analysis statistic method with using software

IBM SPSS Statistics 23.

1. Validity Test

According to Sugiyono (2017:121), *A valid tool is a tool used to measure the validity of the data.* Valid which means an instrument that measures what has to be measured. To test the validity in each item, it is used by correlating each items score with the total score. Correlation coefficient produced is later compared with the validation standard. According to Sugiyono (2017:134), The requirement to be valid or no valid is:

- a. if $r > 0,30$ then the instrument item is valid
- b. if $r < 0,30$ then the item instrument is not valid

According to Sugiyono (2017:183) the equation of correlation products is:

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

Information:

r = Coefficient Correlation

$\sum xy$ = The sum of multiple variable x and y

$\sum x$ = The sum of score of x variable

$\sum y$ = The sum of score of y variable

$\sum x^2$ = The sum of squares of variable values x

$\sum y^2$ = The sum of square of the variable value y

n = The amount of sample

2. Reliability Test

According to Sugiyono (2017:121), *A reliable instrument is an instrument in which when it is used a couple of times, to measure the same objects then the data will be the same.* The reliability test, in this research is the researchers using Cronbachs Alpha. Giving interpretation to a variable, reliability is called reliable if the coefficient variable is more then 0,6. The formulation is:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum s_i}{s_t} \right)$$

Information:

α = Reliability Coefficient (cronbach alpha)

k = The amount of questions

$\sum s_i$ = The amount of variant score in each item

S_t = Variance Total

Wiratnya Sujarweni (2015:110) says that, *Reliability with 0,6 score or less then 0,6 indicates it is a non-satisfying reliability.* A questionnaire that is reliable, has a score of Cronbach Alpha > 0,006.

3. Classic Assumption Test

a. Normality Test

Wiratna Sujarweni (2015: 120) says that, *Normality test, is a test to measure if our data has a normal distribution so that it can be used in statistics* “. According to Wiratna Sujarwani (2015:225) the decision made is based on significant which is:

- 1) If significant > 0,05 then the variable is normal distributed
- 2) If significant < 0,05 then the variable is not distributed normally.

So, normality test is used for testing if the variable used is normal or not. The normality test that is used in this research, is Kolmogorov Smirnov Test using SPSS 23 program.

b. Multicollinearity test

Multicollinearity test is used to see if there is or isn't a high correlation between the independent variable, in a multiple regression model linear. The tool used for testing multicollinearity is variance inflation factor (VIF). If the VIF is <10 , then there is no multicollinearity.

c. Heteroscedasticity Test

Heteroscedasticity test is used to see if there isn't a inequality from residual one to another observation. If the variant from residual one to another observation. If the variant from residual one to observation to another observation is the same, then it is called homoscedasticity. But if it is different, it is called Heteroscedasticity. A good regression model is homoscedasticity or if not Heteroscedasticity. In this research,

the researcher uses glejser test. So, if the significant value (Sig) > 0,05, so there isn't Heteroscedasticity.

4. Multiple Linier Regression Analysis

Is a statistical technique, that is useful to find the regression similarities and to research the relationship of variable independent (X1 and X2) which is leadership and discipline, with the variable dependent (Y) which is performance. The equation of Multiple Regression according to Sugiyono (2017:192) is:

$$Y' = a + b_1X_1 + b_2X_2 + e$$

Information:

Y = Performance

a =Constant

b =coefficient regression

X1 = Leadership

X2 = Discipline

e =error

5. Correlation Analysis

The biggest influence, of variable independent component which is leadership and discipline to dependent variable which is employee performance can be known with using Pearson Correlation. To be able to provide an interpretation of the correlation coefficient found, it can be concluded that the provisions to see the level of closeness of correlation according to Sugiyono (2017:184). This table will be used to see the correlation.

Table 3.3.
Guidelines for Providing Interpretation
Correlation coefficient

Coefficient Interval	Relationship Interval
0-0,08	Very Low
0,08-1,6	Low
1,6-2,4	Medium
2,4-3,2	Strong
3,2-4	Very Strong

6. Coefficient Determination Analysis

This analysis is used to know how big the percentage of the influence of independent variable is to dependent variable. The analysis coefficient equation is:

$$Kd = R^2 \times 100\%$$

Information:

Kd = Coefficient Determination

R^2 = Squared Correlation Coefficient

The criteria of doing a coefficient determination analysis is as follows:

- a. If Kd is close to zero, it means the influence of independent variable to the dependent variable is weak.
- b. If Kd is close to one, it means the influence of independent variable to dependent variable is strong.

6. Hypothesis Test

Hypothesis Test, the one that is used in this research is partial test (t test) and simultaneous test (F test).

a. Partially Test (T test)

The test is used with statistic test, with the following steps:

1) The equation of the hypothesis

$H_0: b_1 = 0$, There is not a significant influence of leadership to employee performance in PT. Bank Mandiri Tbk Bogor Branch.

$H_1: b_1 \neq 0$, There is a significant influence of leadership to employee performance in PT. Bank Mandiri Tbk. Bogor Branch.

H0:b2=0, There is no significant influence of discipline to employee performance in PT. Bank Mandiri Tbk Bogor Branch.

H2:b2 ≠0 There is a significant influence of discipline to employee performance in PT. Bank Mandiri Bogor Branch.

2) The test is used using the formulation test with the significant rate of 5%.

T test equation:

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

Information:

t = t level significant (t count)

r = coefficient correlation

n = amount of sample

3) The result of t hypothesis is compared to the t table, with the following terms

a) If t counts is > then t table, then the H0 is declined and H1 is accepted.

b) If t counts is < then t table, then the H0 is accepted and H1 is declined

b. Simultaneous Test (F Test)

F test is used to know, if the independent variable has a significant influence to dependent variable. The F test is done by the following steps:

1) Formulating the Hypothesis

H0: $b_3 = 0$, There is no significant influence, from leadership and discipline to employee performance in PT. Bank Mandiri Bogor Branch.

H3: $b_3 \neq 0$, There is a significant influence, from leadership and discipline to employee performance in PT. Bank Mandiri Bogor Branch.

- 2) To determine the level of significant that is 0,05 or 5% and degrees of (db) = $n - k - 1$, to determine the area of F table.
- 3) To count the F value, with the formula from Sugiyono (2017: 192), as follows:

$$F_n = \frac{R^2/k}{(1 - R^2)/(n - k - 1)}$$

Information

F_n = F test value

R = Coefficient Multiple Correlation

k = The amount of independent variable

n = The amount of sample members

- 4) From the calculation, define the conclusion by seeing the terms as follows:
 - a) H0 is declined if F is counted $> F$ table, which means H1 is accepted (significant).
 - b) H1 is accepted, if F is counted $< F$ table which means H0 is declined (not significant).