

### CHAPTER III

#### RESEARCH METHOD

This chapter will present the description of research method that includes research design, location of the research, population and sample, research instruments, data collection, and data analysis. Below is the description of research methodology:

##### A. Research Design

This research is a quantitative study that utilizes a path analysis design. Path analysis is a theoretical extension of multiple regressions. It extends beyond regression and enables for more complex model analysis. It's a collection of models that show how a set of variables interact with one another. Path analysis, according to Sarwono's book, is a tool for assessing the cause-effect relation in multiple regression analysis.<sup>121</sup> According to Abdurrahman's book, path analysis is used to estimate the amount and significance of postulated causal links between sets of variables represented by path diagrams. This method is sometimes referred to as cause-and-effect modeling.<sup>122</sup> In a path analysis, not only the direct contribution of the independent variable is examined, but also the indirect contribution. It's because path analysis allows the researcher to verify theoretical hypotheses about the cause-effect relationship without manipulating the variables, which means the researcher doesn't treat a specific variable in the measurement. The model's primary premise is that some variables have a very strong association with one another.

The researcher chose this research method because it allowed us to see the relationship between the researched variables as well as the contribution of independent factors to the dependent variable. The path analysis research model employed in this study is the corrected model, which is a combination of a multiple

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<sup>121</sup> Jonathan Sarwono, "Mengenal Path Analysis: Sejarah, Pengertian dan Aplikasi" 11, no. 2 (2011): 12.

<sup>122</sup> Maman Abdurrahman and Sambas Ali Muhidin, *Analisis Korelasi, Regresi Dan Jalur Dalam Penelitian Dengan Aplikasi Program SPSS* (Bandung: Pustaka Setia, 2007).

regression model and a no mediation model. This is due to the fact that there were two types of variables: independent and dependent variables.

## **B. Population and Sample of the Research**

Population means any group that is subject of research interest.<sup>123</sup> In line with this that the population is the set the entire subject. It is large group to which researcher wants to generalize their sample result.<sup>124</sup> In this research, the researcher chooses all of the eleventh grade students of Senior High School 6 Kediri. It consists of 11 classes, namely 9 science classes and 2 social classes. The total number of students who took science are 315 students and 70 students took social program. So, the total number of the students are 385 students.

According to Goddard and Melville, sample is defined as a subset of population. Sample must be representative of the population being studied.<sup>125</sup> According to Johnson & Larry Cristensen, told that sample is a set of subjects taen from large population based on certain rules. In the similar way, the formula for determining sample size of the population bas virtually no effect on how well the sample is likely to describe the population and as Fowler argues, it is most unusual for it (the population fraction) to be an important consideration when deciding in sample size.<sup>126</sup>

To decide the sample, this research uses probability sampling. Probability sampling is defined as the kind of sampling in which every element. In selecting the research participant, the researcher applies simple random sampling. For a path analysis, the minimum sample size is 100, and the ideal sample size is 400 to 1000.<sup>127</sup>

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<sup>123</sup>Goddard, W. & Melville, Stuart. *An introduction: Research methodology. Second Edition.* (Lansdowne: The Berne Convention. 2001) 34.

<sup>124</sup>Johnson, Burke & Cristensen, Larry. *Education Research, quantitative and qualitative approach.* (United State of America: Allyn and Bacon. 2000). 16.

<sup>125</sup>Goddard, W. & Melville, Stuart. *An Introduction: Research Methodology, Second Edition.* (Lansdowne: The Berne Convention. 2001). 34.

<sup>126</sup>Fowler, F.J. 2002. *Survey research methods*, Newbury Park, CA, SAGE. 65

<sup>127</sup>J. Sarwono, "Mengenal Path Analysis: Sejarah, Pengertian Dan Aplikasi," *Jurnal Ilmiah Manajemen Bisnis Ukrida*, 2011, 289.

**Table 3.1 Population in Each Class**

<b>Class</b>	<b>Students Amount</b>
XI MIPA 1	35
XI MIPA 2	35
XI MIPA 3	35
XI MIPA 4	34
XI MIPA 5	36
XI MIPA 6	33
XI MIPA 7	37
XI MIPA 8	35
XI IPS 1	36
XI IPS 2	34
<b>Total</b>	<b>385</b>

In selecting the sample, the researcher decided to randomly selected the participants of each class. From the process, the accessible sample for the current study was 143 students.

### **C. Research Instrument**

In order to conduct the research, the researcher requires instrument including questionnaires, checklists, interview guides, etc as a tool. The researcher employs two types of instruments in this study: questionnaire and test. The instrument of collecting the data can be explained as follows:

#### **1. Questionnaire**

There is one questionnaire involves in this research. The questionnaire aims at knowing the students' emotional intelligence.

##### **a. Emotional Intelligence questionnaire**

The Quick Emotional Intelligence Self-Assessment will be utilized by researcher to assess the emotional intelligence of the students. The instrument is based on Bar-on theory.<sup>128</sup> This instrument has five different sub-scales. There

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<sup>128</sup>Bar-On, R. *The Emotional Quotient Inventory (EQ-i): a test of emotional intelligent*. (Toronto, Canada: Multi-Health System, Inc.1997)

were 40 likert-scales in total. To know further information about the questionnaire, the researcher draws the specification of the questionnaire below:

**Table 3.2**  
**The Spesification of Emotional Intelligence Questionnaire**

<b>Dimension</b>	<b>Aspect</b>	<b>Item Number</b>
<b><i>Intrapersonal EQ</i></b>	Self-regard (SR)	6,35,30
	Emotional self-awareness (ES)	28,37,44,
	Assertiveness (AS)	31,32,39
	Independence (IN)	2,8,11
	Self-actualization (SA)	9,15,41
<b>Interpersonal EQ</b>	Empathy (EM)	24,27,33
	Social responsibility (RE)	13, 17,45
	Interpersonal Relationship (IR)	7,20,42
<b>Stress Management EQ</b>	Stress Tolerance (ST)	1,23, 5,12
	Impulse control (IC)	21,36
<b>Adaptability EQ</b>	Reality testing (RT)	26,29,38
	Flexibility (FL)	3,14,18
	Problem solving (PS)	4,25,40
<b>General Mood</b>	Optimism (OP)	16,22,34
	Hapiness (HA)	10,19,43

Since the instrument was adopted, a face validity had been done with the step of expert judgment (See appendix 5). The face validity or tryout was also used by researcher to evaluate the appearance of the questionnaire in the context of feasibility, readability, consistency of format and style, and the clarity of language used. After the tryout, there were five items invalid (Number 9, 21, 26, 35, 40). Therefore, those items were not taken into account to be measured anymore.

To measure the consistency of the score, the researcher also used reliability. The researcher used coefficient alpha or Cronbach's alpha to estimate internal consistency. If the items were scored as continuous variables (e.g., strongly agree to strongly disagree), the alpha provides a coefficient to estimate consistency of score on an instrument. Therefore, in the present study, researcher used this reliability measurement. The result of reliability test of emotional intelligence

questionnaire showed 0.927 in Cronbach's alpha. This indicated that the instrument is reliable based on the fact that the alpha value is greater than 0.7.

**Table 3.3**  
**Reliability of Emotional Intelligence Questionnaire**

Cronbach's Alpha	N of Items
0,927	35

## 2. Test

The researcher utilizes 2 kinds of tests. The first test is to measure the pragmatic competence of the students and the second one is to know the receptive skill proficiency of the students.

### a. Pragmatic competence test

The Multiple Discourse Completion Test (MDCT) will be used by researcher to measure the level of students' pragmatic competence. To ease the students' comprehension, this study scooped the discourse apology and request. The reason of choosing these two materials is because the students had been given the materials about apology and request in the classroom. This MDCT test is adopted from Parviz Birjandi and Saeed Rezaei.<sup>129</sup> This MDCT test consists of 20 situations with 3 choices of responses. To know further information about the questionnaire, the researcher draws the specification of the questionnaire below:

**Table 3.4**  
**The Spesification of Multiple Discourse Completion Test**

Dimension	Aspect	Item Number
Apology	A regretful acknowledgment of an offense or failure	1, 2, 3,4, 5, 6, 7, 8, 9, 10,

<sup>129</sup>Birjandi, P. &Rezaei, S. "Developing a multiple-choice discourse sempletion test of interlanguage pragmatic for Iranian EFL Learner. *Language Teaching Journal (special Issue: Proceeding of the First Conference on ELT in the Islamic world* 6, no 1 (2010): 43-58"

Request	An act of asking politely or formally for something	11, 12, 13, 14, 15, 16, 17, 18, 19, 20
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Since the instrument was adopted, a face validity had been done with the step of expert judgment (See appendix 6). The face validity or tryout was also used by researcher to evaluate the appearance of the questionnaire in the context of feasibility, readability, consistency of format and style, and the clarity of language used. After the tryout, there were two items invalid (Number 7, 11). Therefore, those items were not taken into account to be measured anymore.

To measure the consistency of the score, the researcher also used reliability. The researcher used coefficient alpha or Cronbach's alpha to estimate internal consistency. The result of reliability test of MDCT test showed 0.832 in Cronbach's alpha. This indicated that the instrument is reliable based on the fact that the alpha value is greater than 0.7.

**Table 3.5**  
**Reliability of Multiple Discourse Completion Test**

Cronbach's Alpha	N of Items
0,832	18

b. Receptive skill test

The receptive skill is divided into 2 parts (listening and reading), and both will be tested by TOEFL test. The TOEFL Test will be employed by the researcher to measure the students' receptive skill. This test is developed by professional test developers at ETS (Educational Testing Service).<sup>130</sup>TOEFL Test is developed by ETS as a meaningful measurement to know the level of English language comprehension which has been used in more than 65 countries. It consists of 50 questions for each reading and listening skills.

<sup>130</sup>Retrieved from [https://www.ets.org/s/toefl/pdf/free\\_practice\\_test.pdf](https://www.ets.org/s/toefl/pdf/free_practice_test.pdf)

To know further information about the reading test, the researcher draws the specification of the questionnaire below:

**Table 3.6**  
**The Spesification of TOEFL Reading Test**

<b>Competency</b>	<b>Indicator</b>	<b>Item Number</b>
Reading Factual Information	Determine explicit information in the form of the main idea	1,37
	Determine explicit information in the form of supporting ideas	21,32,38,49
Inference and Rhetorical	Determine the implied information in the form of the main idea	8,13,23,39,42,50
	Determine implied information in the form of supporting ideas	4,5,9,31,33,40,41,44,45,47
Reading Vocabulary	Determine the reference of the word	2,3,6,7,10,12,15,16,17,18,24,25,27,28,29,30,35,36,46,48
Sentence Simplification	Identify sentences that basically have the same meaning	14,19,20,26,34
Prose Summary	Identify the main ideas and the relative importance of the information in the reading	11,22,43

The face validity or tryout was also used by researcher to evaluate the appearance of the questionnaire in the context of feasibility, readability, consistency of format and style, and the clarity of language used. After the tryout, there were eight items invalid (Number 1, 3, 11, 13, 15, 24, 30, 47). Therefore, those items were not taken into account to be measured anymore.

To measure the consistency of the score, the researcher also used reliability. The researcher used coefficient alpha or Cronbach's alpha to estimate internal consistency. The result of reliability of reading test showed 0.923 in Cronbach's alpha. This indicated that the instrument is reliable based on the fact that the alpha value is greater than 0.7.

**Table 3.7**  
**Reliability of TOEFL Reading Test**

Cronbach's Alpha	N of Items
0,923	42

To know further information about the listening test, the researcher draws the specification of the questionnaire below:

**Table 3.8**  
**The Spesification of TOEFL Listening Test**

Competency	Indicator	Item number
Short conversation	Determine the main idea and meaning	1,2,3,4,5,6,7,8, 10,11,12,14
	Determine the inference	9,13,17,18,19, 20,22, ,26
	Determine the suggestion in the conversation	21, 27,28,30
	Predict the possibility of the conversation	23,24,25,29
Long conversation	Determine the topic and main idea of long conversation	35, 38, 45, 50
	Understand the detail information	31, 32, 33, 34, 36, 37
Short lecture or talk	Determine the topic and main idea in the monologue lecturer	46, 47, 48, 49
	Understand the detail information in the monologue lecturer	39, 40, 41, 42, 43, 44

The face validity or tryout was also used by researcher to evaluate the appearance of the questionnaire in the context of feasibility, readability, consistency of format and style, and the clarity of language used. After the tryout, there were seven items invalid (Number 6, 11, 13, 27, 30, 45, 49). Therefore, those items were not taken into account to be measured anymore.

To measure the consistency of the score, the researcher also used reliability. The researcher used coefficient alpha or Cronbach's alpha to estimate internal consistency. The result of reliability of listening test showed 0. 925 in Cronbach's



alpha. This indicated that the instrument is reliable based on the fact that the alpha value is greater than 0.7.

**Table 3.9**  
**Reliability of TOEFL Listening Test**

Cronbach's Alpha	N of Items
0,925	43

#### **D. Data Collection**

In collecting the data, the researcher uses some steps. The researcher prepares the questionnaire for knowing students' emotional intelligence and 2 tests for measuring students' pragmatic competence and receptive skill. Before distributing the instruments to the sample, the researcher distributes the questionnaire and tests to one class in order to try out the instruments. This step is necessary to make sure that the instruments are valid and reliable. Therefore, the researcher will take one class of eleventh grade at SMAN 6 Kediri as the respondents. After conducting the try out, the researcher will analyze the validity and reliability using SPSS.

After all the instruments are valid and reliable, the researcher distributes the instruments to four classes that represent each department of the school (Science, Social, Language, and Religion) of eleventh grade with total 120 students.

##### **1. Questionnaire of emotional intelligence**

Firstly, the researcher distributes the questionnaire of emotional intelligence to the students. The questionnaire consists of 45 questions. Therefore, the researcher provides an hour to the students to accomplish the questionnaire.

##### **2. Test for pragmatic competence and receptive skill**

For the pragmatic competence and receptive skill tests, the researcher utilizes two tests, those are MDCT and TOEFL Test.

- a. MDCT is distributed to the student a day after they accomplishing the questionnaire. This test consists of 20 questions of multiple choice. The researcher gives an hour for the students to complete the MDCT.
- b. TOEFL Test is distributed to the students a day after they finish the MCDT. The overall questions are 100 which 50 for listening and 50 reading. The researcher allocates 90 minutes for the students to complete the test.

After the data is completely collected, the researcher calculates and tabulates data of emotional intelligence questionnaire, MDCT, and TOEFL test in *Ms. Excel* program.

### **E. Data Analysis**

In this study, the researcher will analyze three parts: (1) instrument analysis, (2) prerequisite test, (3) hypothesis testing.

#### **1. Instrument analysis**

##### **a. Emotional intelligence questionnaire**

In analyzing the data of emotional intelligence questionnaire, the researcher input the result of likert scale in *Ms. Excel*. The likert scale consists of 4 options; strongly agree, agree, disagree, and strongly disagree. Every option in the likert scale equals to score 1-4. Strongly agree will be scored 4, agree will be scored 3, disagree will be scored 2, and strongly disagree will be scored 1.

##### **b. MDCT and TOEFL Test**

In analyzing the data of MDCT, the researcher input the result of the test in *Ms. Excel*. This test consisted of 20 multiple choice question. The correct answer will be scored 1 and the incorrect answer will be scored 0. It means the maximum score of this test is 20

In analyzing the data of TOEFL test, the researcher also input the result in *Ms. Excel*. This test consists of 80 multiple choice questions which divided into 45 listening questions and 45 reading questions. The correct answer will be scored 1 and the incorrect answer will be scored 0. It means the maximum score of this test is 100.

#### **2. Prerequisite test**

In analyzing the data, the researcher employs SPSS 21 to gain the result of prerequisite test. Prerequisite test is divided into normality test, linearity test, heteroscedasticity test, and linear regression.

a. Normality test

The purpose of normality test is to know the research data distribution is normal or not. To test the normality, the researcher uses Kolmogorov-Smirnov test. The data is normally distributed if the significance (sig.) number is greater than 0.05. If it is lower, it can be concluded that the data distribution is abnormal.

b. Linearity test

The linearity test is used by researcher to know the linearity between independent and dependent variables. The linearity test can be known by using ANOVA (test for linearity) on the significance value 0.05. Two variables are considered linear if significance value of deviation from linearity is greater than 0.05.

c. Heteroscedasticity test

Test for heteroscedasticity is used to test whether the variance of the errors from regression is dependent on the values of the independent variables. If there is no error with the heteroscedasticity which means that the assumption that the errors are independent and identically distributed if the dots at the scatter plot is spread without any clear pattern.

d. Linear Regression

In linear regression, there is a part when the reseacher aimed at knowing the correlation between independent and dependent variables. Correlation is statistical measure that indicates the extent to which two or more variables fluctuate together, while contribution is how independent variable help produce or achieve dependent variable. Therefore, the parameter to determine whether the correlation is strong or not is needed. The table bellow shows the parameter of correlation.

**Coefficient Variable**

No	Value (r)	Degree
1	0.00 – 0.199	Very weak

2	0.20 – 0.399	Weak
3	0.40 – 0.599	Sufficient
4	0.60 – 0.799	Strong
5	0.80 – 1.00	Very strong

### 3. Hypothesis Testing

To identify the direct and indirect contributions among the variables, the researcher utilized SEM (Structural Equation Model) using AMOS 25.0. It will assist the researcher to know the contribution through path diagram. The model of this path analysis was recursive model. It can be indicated if all arrows go toward same direction. The requirements or the characteristics of this model are the arrows are going to one direction only, there is no arrows head in the reverse direction and there is only one exogenous variable and three endogenous variables.<sup>131</sup> To know the significance of indirect contribution, the researcher calculates the data of direct contributions from the AMOS through Sobel test.

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<sup>131</sup>Sarwono, "Mengenal Path Analysis: Sejarah, Pengertian dan Aplikasi."