

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

To investigate the extent of the effect of the four major temperament types and the preference of the genres of literature toward the achievement of reading as a foreign language, in which the second year students at SMA Muhammadiyah 2 Surabaya were being the subject of the study, the necessary details of the analysis phase were based on the formulation of the issue raised, aim and benefits of the study. Therefore, the quantitative research methodology was used in this study so as gain the data. In conducting the research, Multiple Linear Regression was conducted to find out the effect of preference for fiction (X1), preference for non-fiction (X2), and temperament types (X3) toward the achievement of reading as a foreign language (Y).

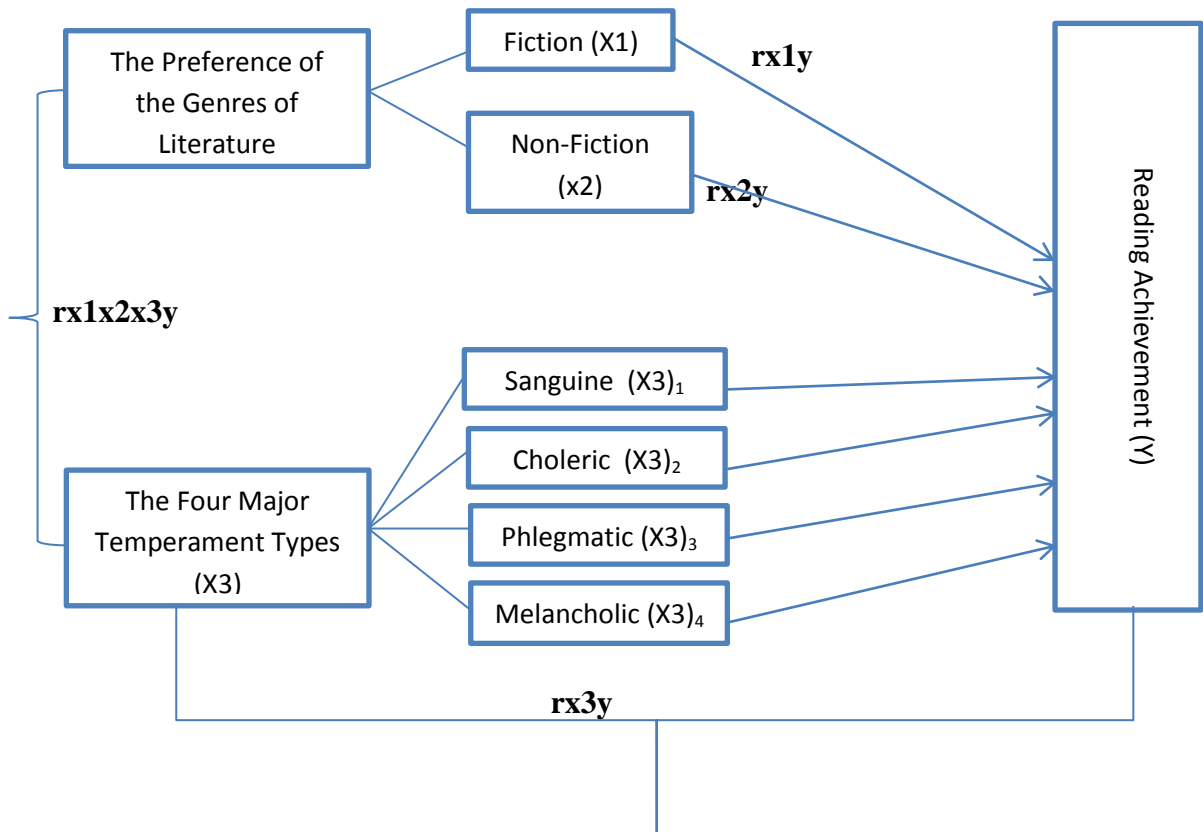


Figure 2. Conceptual Framework

Information :

—————> : Each variable has an effect on Reading Achievement

rx1y : The effect of X1 variable toward Y variable

rx2y : The effect of X2 variable toward Y variable

rx3y : The effect of X3 variable toward Y variable

rx1x2x3y : The effect of X1, X2, and X3 variable toward Y variable simultaneously

3.2 Location and Time of the Research

This study was conducted at the second year students of SMA Muhammadiyah 2 Surabaya on April 2018.

3.3 Population and Sample

3.3.1 Population

A population is a set of all elements that means the large group in which the researchers want to generalize their sample results (Sugiyono, 2016:80). In short, the population is a large amount of the research object which is going to be investigated in the research study. The subject of the study was conducted at the second year students in even semester of 2017/2018 academic year at SMA Muhammadiyah 2 Surabaya, while the object of this research was the four major temperament types and the preference of the genres of literature toward the achievement of reading as a foreign language.

3.3.2 Sample

In this study, purposive sampling was conducted to investigate the things of respondents. Individuals and sites were purposely selected in this research to pick up and understand the phenomenon which was being occurred. Patton (in Creswell 2012: 206) emphasizes that “information rich” is the standard utilized in electing participant and sites. The participants were intentionally chosen of the second year students who were from science eleventh graders 1 up to science eleventh graders 3 in which the pupils were in international class at the school. 43 students were the sample under study in this research which had been selected from a population of 74 students. High interest of students in reading literature which was fiction and non-fiction were selected after filling out the survey form.

3.4 Research Variable

Research variables are anything in the form of what is determined by the researcher to be researched so as to gain information (Sugiyono, 2016:38). It is also explained by Fraenkel et al. (2012:80) that classifying the variables as independent and dependent is a prevalent and beneficial way to think about the variables. Independent variable is something that had been selected by the researcher to be studied so as assess the possible effects on one or more other variables. The variable that independent variable is assured to affect is called dependent variable. Indeed, the dependent variable depends on what independent variable does to it and how to affects it. In addition, it is possible to explore more than independent (and also more than dependent) variable in a research. Therefore, the independent variables in this research are preference for fiction (X1), preference for non-fiction (X2), and temperament types (X3); Choleric, Phlegmatic, Sanguine, and Melancholic toward the dependent variable which is Reading Achievement (Y).

3.5 Variable Operational Definition

3.5.1 Temperament Types

Temperament is the part of individual's personality which is genetically based innate, in which from birth or even before (Kassachau in Nodoushan, 2011:35). The notion of "temperament" of the individuals can be traced back to the ancient times and mainly to the custom of ancient Egypt and Mesopotamia where the health of the human body was considered to be correlated with the four basic aspect of nature: water, fire, air, and soil (Cited in Montgomery, 2002). As argued by Schultz (2009:8), enduring and picturesque group of traits that may change in perception to diverse condition. Kant categorized the four temperaments into 2 groups, those of feeling and those of activity. Having strong, but short-lasting feelings is the characteristics of Sanguine. Choleric was described as intense, but not persistent, activity. The Phlegmatic was characterized by inactive, but enduring. Finally, Melancholic had weak but enduring feeling (Campbell, 2015).

3.5.2 The Preference of the Genres of Literature

Fiction and non-fiction are the two primary categories separating the diverse genres of literature. Fiction is narrative writing that comes from the author's fantasy. A novel, novella, short story, myths, legends, and fables are the primary sub-genres of fiction. It is supposed to amuse the readers, but it can also inform, persuade or inspire. Furthermore, non-fiction provides idea and presumption on the circumstance (<https://www.cde.ca.gov/ci/cr/rl/litrlgenres.asp>). Autobiography, biography, essay, diaries and journals, and narrative non-fiction are the primary sub-genres of non-fiction. Indeed, it is written based on true events, people, places, and facts that have intent to inform and sometimes to entertain the readers (<https://www.cde.ca.gov/ci/cr/rl/litrlgenres.asp>).

3.5.3 Reading Achievement

Achievement is efficacious motivation to settle something. Ability does not refer to what they have conducted, but it refers to something that they can do. Derewianka (1990:44) describes that accomplishing on a test of knowledge or skill is a firm objective of achievement. Hence, for determining the pupils' achievement in reading, a teacher should give the pupils a test in order to find out the score of the pupils in answering the questions of reading. The subject of the study was conducted at the second year students in even semester of 2017/2018 academic year at SMA Muhammadiyah 2 Surabaya in which they were demanded to conduct an IELTS test as an annual school program at the end of the academic year

3.6 Research Procedure

In this research, a preliminary study was conducted by observing some pupils during either conducting the activity or breaking time. Before conducting the research, the reading interest survey was given out to the population. 43 students were the sample under study in this research which had been selected from a population of 74 students. High interest of students in reading literature which was fiction and non-fiction were selected after filling out the survey form. After getting the selected respondents, the temperament types test was conducted to find out their dominant temperament types: sanguine, choleric, phlegmatic, or melancholic. Furthermore, (<https://openpsychometrics.org/tests/O4TS/>) is the available website which provided 48 items of questions of the temperaments test. The students responded in about 25-30 minutes. And then, general preference questionnaires were provided in getting data concerning preference of respondents for the genres of literature. Moreover, conducting the IELTS-like test which is the main data was conducted after filling out the questionnaire that provided in Google form, in order to know how far the pupils' English achievement, particularly in reading achievement. After obtaining all of the data, the instrument,

pre-requisite test, and hypothesis testing were analyzed to know the result of the study.

3.7 Instrument and Technique Data Collection

3.7.1 Instrument

There are three main instruments utilized for the purposes of the current study: (1) temperament types test, (2) reading preference questionnaire, and (3) reading achievement test (IELTS-like test).

3.7.1.1 Temperament Types Test

According to Arikunto (2015:66) Test is a tool or procedure utilized to find out or measure something in an atmosphere with ways and rules that have been determined. The participants that had been selected in sampling, they conducted their personality test to know belonging to any of the four major temperaments type: sanguine, choleric, phlegmatic, or melancholic. The respondents were categorized into the four major temperaments group based on their result of the temperaments test. This test was available on the website: (<https://openpsychometrics.org/tests/O4TS/>) which provided 48 items of questions.

3.7.1.2 Reading Preference Questionnaire

The researcher collected the data regarding the pupils' reading preference of the genres of literature to find out if there are some effects of the preference of the genres of literature toward their achievement, mainly in the achievement of reading as a foreign language. Moreover, types of multiple choice questions were provided for the respondents to have the explicit option. Thus, the pupils would be easier to understand and they do not need to spend much time on reading the questions. Furthermore, the questionnaires are divided into four categories which have a function as predictor. There are two predictors that provided in the questionnaire: preference for fiction (X1) and preference for non-fiction (X2).

There were 20 items given to the students that provided in Google form (<https://bit.ly/2qcZEKm>). This questionnaire was conducted by using five-point-

scales (strongly agree, agree, uncertain, disagree, and strongly disagree) in Likert Scale. For acquiring score the data in this scale was by using numbering system, such as “strongly agree” to “strongly disagree” as a “5” to a “1” (Creswell, 2008:183).

3.7.1.3 Reading Achievement Test

In this study, the IELTS-like test was utilized to measure the pupils' English achievement, particularly in reading skill. The test was distributed to the subjects who are going to conduct an annual school program at the end of academic year. The academic reading test was 60 minutes long. In IELTS Reading, the test takers only had one hour to read 3 passages and answered 40 questions. These questions were divided into variety types of question that must be completed. In addition, each of passage usually had about 3 or 4 variant types of questions to be answered (<http://ieltsliz.com/ielts-reading-question-types//>). Furthermore, 1 point was received for each of the correct answer. Scores out of 40 were converted to the IELTS 9-band scale (<http://ieltsliz.com/ielts-reading-question-types//>).

3.8 Technique of Data Analysis

In this study, the researcher analyzed 3 parts: (1) instrument analysis, (2) analysis of data description, (3) prerequisite test, and (4) hypothesis testing.

3.8.1 Instrument Analysis

3.8.1.1 Analysis of Temperaments Type Test

The study used a ready-made questionnaire. The questionnaire was provided on the website: (<https://openpsychometrics.org/tests/O4TS/>). The questionnaire of temperaments type consisted of 48 items by using the Likert scale from disagreeing to agree. The temperament types questionnaire was categorized into four types: sanguine, choleric, phlegmatic, and melancholic. The questionnaire was on a website as a nexus connecting researchers from around the

world for temperament research. In addition, the researcher did not check the validity of the data because the ready-made questionnaires had been standardized on the website by the reliable experts.

3.8.1.2 Analysis of Reading Preference Questionnaire

The questionnaire was applied to the sample of the study which was the second year students at SMA Muhammadiyah Surabaya to know how far students used questioning as an indicator of the preference of the genres of literature. Before giving out the questionnaire to the sample of the study, the questionnaire had been tested by using software of SPSS 23.0 to examine the validity and reliability of the questionnaire. In addition, the validity test is aimed to measure how far the instrument is appropriate to test what will be tested (Arikunto, 2015:79). In consequences, before giving out the questionnaire to the sample of the study, the researcher had to test the validity to measure whether the instrument was appropriate to be distributed. Furthermore, testing the reliability of instrument was also conducted. Reliability is aimed to measure the consistency of instrument if it is conducted twice or more (Arikunto, 2015:100). It means that reliability test should be conducted in order to make the instrument is reliable and appropriate to be distributed to the sample of the study. To see the validity and reliability test of the instrument, the researcher had distributed questionnaire which consists of 20 items to 43 the second year students at SMA Muhammadiyah Surabaya. The result of questionnaires was calculated by using software of SPSS 23. The level of significance 0.05 was utilized to find the valid items.

Based on the result of the reliability test, the researcher gained Cronbach's Alpha 0.849. The criteria of the data can be determined if the reliability coefficient (r_1) $>$ 0.6. The result of the reliability test was 0.849, or ($0.849 > 0.6$). Therefore, it can be inferred that the questionnaire is reliable.

Based on the result of validity test, in which the questionnaire consisted of 20 items. The items of the questionnaire could be considered valid if r-value is higher than r-table. The r-table is 0.42. Thus, the result revealed that 20 items of the questionnaires were valid.

3.8.1.3 Analysis of Reading achievement (IELTS-like)

Reading is one of the significant skills in conducting an IELTS test. The pupils are required to master in finding the main idea, predicting the continuation of the paragraph, making the inference, classifying information, or identifying the author's purpose. The validation was not analyzed because it was already standardized. According to Liz, there are 14 questions types of question that must be completed. In addition, each of passage usually has about 3 or 4 variant types of questions to be answered (<http://ieltsliz.com/ielts-reading-question-types/>). Furthermore, 1 point was received for each of the correct answer. Scores out of 40 are converted to the IELTS 9-band scale (<http://ieltsliz.com/ielts-reading-question-types/>).

For the *academic* reading test, the proximate band score can be calculated by utilizing this following table (<https://ielts.com.au/get-ielts-results/ban-score-calculation>):

Table 5 Band Score of IELTS

| | | | | | | | | | | | | | | |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|
| Band Score | 9 | 8.5 | 8 | 7.5 | 7 | 6.5 | 6 | 5.5 | 5 | 4.5 | 4 | 3.5 | 3 | 2.5 |
| Score/40 | 39-40 | 37-38 | 35-36 | 33-34 | 30-32 | 27-29 | 23-26 | 19-22 | 15-18 | 13-14 | 10-12 | 8-9 | 6-7 | 4-5 |

3.8.2 Analysis of Data description

Descriptive statistics is analyzing data by describing data which has been obtained without intending to make general inference (Sugiyono, 2016:147). The presentation of data through pie chart, graphs, tables, median, mean, standard deviation, percentage calculation, and mode calculations are included in

descriptive statistics (Sugiyono, 2016:148). Indeed, data that had been obtained in the research was presented in the form of description data of each of variables, either independent variables or dependent variable.

3.8.3 Prerequisite Analysis

3.8.3.1 Normality Test

In this research, normality was utilized from the collected data of questionnaire and IELTS-like test. This research used Chi-Square test (X^2). According to Sugiyono (2007: 79), testing the normality of data is by using Chi-Square which is conducted by comparing the normal curve formed from data that have been collected with the standard curve. Moreover, the basic formula Chi-Square as follows:

$$X^2 = \sum_{i=1}^k \frac{(f_o - fh)}{fh}$$

X^2 = Chi Squares

f_o = Frequency being observed

fh = Expected frequency

(Sugiyono, 2007:107)

3.8.3.2 Multicollinearity Test

The multicollinearity test is performed to see if there is any relationship among the independent variables. If in the test it turns out got a conclusion that among independent variables are mutually bound, the test cannot be conducted into the next stage. It is occurred because the regression coefficient cannot be determined by the variables, and also the value of the standard error becomes infinite. To find out the test results from multicollinearity test, it can be seen from many ways, namely as follows:

$$VIF = \frac{1}{1 - R^2}$$

(Singgih Santoso, 2012:236)

If the VIF value is more than 10, then the data that the researcher tested has multicollinearity whereas if the VIF value is below 10, then the data that the researcher tested does not have multicollinearity.

3.8.3.3 Heterokedasticity Test

Heterokedasticity test is utilized to see the deviation of classical assumption which is that is availability of variant inequality of residual for all observation in regression model (Priyatno, 2014:115). To examine the heterokedasticity, the Glejser test is performed. If the value of significance between independent variables with absolute residual is more than 0.05 then there is no problem of heteroscedasticity (Priyatno, 2014: 115).

3.8.3.4 Autocorrelation Test

Autocorrelation is utilized to know the correlation between the interference variable so that the estimator is no longer efficient both in small sample model and in large sample. To test the autocorrelation is by experimenting d (Durbin-Watson). The calculation result is conducted by comparing the F-table. The criterion is if the Durbin Watson < F-able, then there is no autocorrelation among the independent variables in the regression equation and vice versa (Singgih Santoso, 2012:241).

3.8.4 Hypothesis Analysis

In analyzing the data, the hypothesis of the research had been analyzed from determining two problems of the study: (1) the effect of independent variables toward the dependent variable, and (2) which independent variable is more influential toward the dependent variable.

3.8.4.1 Finding out the effect of independent variables toward the dependent variable.

F-test is used to explore whether the independent variables have the simultaneous significant or insignificant effects on the dependent variable. The steps are as follows:

a. Create a hypothetical formula

1. $H_0: \beta_i = 0$ (null hypothesis) means that there is no significant effect simultaneously between the independent variables and the dependent variable.
2. $H_0: \beta_i \neq 0$ (alternative hypothesis) means that there is a significant effect simultaneously between the independent variables and the dependent variable.

b. Determine the F-table value by using the level of significance of 0.05. Simultaneous significance test using F test can be formulated with:

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

Information:

R^2 = coefficient of determination

K = number of variables

N = number of data

(Sugiyono , 2014:257)

c. Decision-making

1. If P-value $< \alpha = 0.05$ then H_0 is rejected and H_1 is accepted. It means that there is a significant effect simultaneously between the independent variables toward the dependent variable.
2. If P-value $> \alpha = 0.05$ then H_0 is accepted and H_1 is rejected. This means that there is no a significant effect simultaneously between the independent variables toward the dependent variable.

3.8.4.2 Seeking which independent variable is more influential

In multiple linear regression analysis, T-test is used for the partial test (individually). It aims at determining the effect of each independent variable to the dependent variable with the hypothesis as follows:

If $t\text{-count} > t\text{-table}$, It means that there is a significant effect between the independent variables (X) toward the dependent variable (Y).

If $t\text{-count} < t\text{-table}$, then It means that there is no a significant effect between the independent variables toward the dependent variable.

According to Sugiyono (2014:250), it uses the formula:

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

3.8.4.3 Determination Coefficient Test (R^2)

Determination coefficient test is a means of testing to determine the capability of the independent variables in clarifying the dependent variable with the regression model. The value of the test of the coefficient of relation in regression is shown with value of R. Analysis of determination or R^2 also become benchmark showing how big the independent variables contribute to the dependent variable. Thus, the determination analysis used to see the percentage contribution of independent variables influence simultaneously to the dependent variable.

$$KD = r^2 \times 100\%$$

Information:

KD = Coefficient of Determination

R = Correlation Coefficient