CHAPTER IV

RESEARCH FINDINGS AND INTERPRETATION

This chapter presents (1) research findings, and (2) interpretation.

4.1 Research Findings

There are three kinds of research findings in this study taken from (1) instrument analysis, (2) pre-requisite analysis, and (3) hypotheses testing analysis.

4.1.1 Instrument Analysis

There are three main instruments that had been analyzed in this study taken from the result of temperaments questionnaire, reading preference questionnaire, and the result of the IELTS-like test.

4.1.1.1 The Result of Temperaments Type Questionnaire

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. They conducted their temperaments test to know belonging to any of the four major temperaments type: sanguine, choleric, phlegmatic, or melancholic. The respondents were categorized into the major four temperaments group based on their result of the temperaments test.

The result of temperaments test revealed that majority of the students had Sanguine type 58% (25). Others were categorized in 28% Phlegmatic (12), 7% Choleric (3), and 7% Melancholic (3)

Table 6 Distribution of Students' Temperament Types

No.	Temperaments Type	Frequency	Percentage
1.	Sanguine	25	58%
2.	Choleric	3	7%
3.	Phlegmatic	12	28%
4.	Melancholic	3	7%
	TOTAL	**43**	**100%**

The descriptive statistical analysis of 48-item temperaments questionnaire for the respondents is shown below in table 7. The mean of Sanguine is 0.56 and the standard deviation is 0.502. In addition, the mean of Choleric is 0.07 and the standard deviation is 0.258. Furthermore, the mean of Phlegmatic is 0.30, and the standard deviation is 0.465. Moreover, the mean of Melancholic is 0.07 and the standard deviation is 0.258.

Table 7 Descriptive Analysis of Temperaments Type

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Sanguine	43	0	1	.56	.502
Choleric	43	0	1	.07	.258
Phlegmatic	43	0	1	.30	.465
Melancholic	43	0	1	.07	.258
Valid N (listwise)	43				

4.1.1.2 Reading Preference Questionnaire

The questionnaires were divided into four categories which have a function as predictor. The following terms are predictors that provided in the questionnaire:

1. Preference for Fiction (X1)
2. Preference for Non-fiction (X2)

The descriptive statistical analysis of 20-item reading preference questionnaire for the respondents is shown below in table 8. Variable of Preference for Fiction (X1) has an average of 44.19; minimum value of 36.00; maximum value of 53.00; and the variance of 4,278. Variable of Preference for Non-Fiction (X2) has an average of 31.05; minimum value of 23.00; a maximum value of 39.00 and a variance of 4.418.

Table 8 Descriptive Analysis of Reading Preference Questionnaire

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
X1_PF	43	36	53	44.19	4.278
X2_PNF	43	23	39	31.05	4.418
Valid N (listwise)	43				

4.1.1.3 The Result of Reading Achievement

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 that were 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 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//).

The descriptive statistical analysis of reading achievement for the respondents is defined below in table 9. Variable of Reading Achievement (Y) has an average of 5.1163; the minimum value of 3.00; maximum value of 7.00; and the variance of 1.16923.

Table 9 Descriptive Analysis of Reading Achievement

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Y	43	3.00	7.00	5.1163	1.16923
Valid N (listwise)	43				

For each category, not all of 43 students had very good English achievement, mainly in reading achievement. The distributions are presented in the following table:

Table 10 Distributions of Reading Achievement

No.	Band Score of IELTS Test	Frequency	Category	Percentage
1.	2.5-4.5	16	Low	37.20%
2.	5-6.5	23	Medium	53.48%
3.	7-9	4	High	9.30%

In table 10, there are three reading English achievement categories. 16 students are classified in a low category, 23 students are in a medium category, and only 4 students are in a high category. From the distribution above, it is revealed that “Medium” category is the most frequent level of students’ reading achievement (53.48%).

4.1.2 Perquisite Analysis

4.1.2.1 The Result of Normality Test

The normality test of data is taken into account in determining the type of analysis used (Basuki and Yuliadi, 2014). Normality tests can also be used to determine the data that has been collected normally distributed or taken from the normal population. Furthermore, the test used for the One-Sample Kolmogorov-Smirnov Z with provisions if the of Asymp.Sig (2-tailed) > (α) = 0.05, then the data is normally distributed. The following table is the results of normality test from the data in this study:

Table 11 One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		43
Normal Parameters[a,,b]	Mean	.0000000
	Std. Deviation	.49187490
Most Extreme Differences	Absolute	.113
	Positive	.113
	Negative	-.071
Kolmogorov-Smirnov Z		.743
Asymp. Sig. (2-tailed)		.639

a. Test distribution is Normal.

b. Calculated from data.

Based on the table above, the data was examined by using One-Sample Kolmogorov-Smirnov Z. The results showed that the value of Asymp. Sign (2-tailed) is 0.639 > 0.05.Thus, it can be inferred that the residual data is normally distributed.

4.1.2.2 The Result of Multicollonierity 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. The multicollinearity test used in this study is using Variance Inflation Factor (VIF) and Tolerance. Furthermore, the criteria used in this test is if VIF <10 then there is no multicollinearity among the independent variables. Here is the result of multicollinearity test in this research:

Table 12 Multicollonierity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.447	.943		-3.654	.001		
	X1_PF	.067	.031	.245	2.160	.038	.393	2.546
	X2_PNF	-.003	.033	-.010	-.079	.938	.324	3.087
	Choleric	.064	.339	.014	.190	.851	.906	1.104
	Phlegmatic	.201	.200	.080	1.005	.322	.797	1.254
	Melancholic	-.440	.350	-.097	-1.259	.216	.850	1.177

a. Dependent Variable: Y

Based on the table of multicollinearity test above, it can be said it did not occur multicollinearity because the value of VIF of the variables of Preference for Fiction, Preference for Non-fiction, and Temperament Types is less than 10. Hence, there is no multicollinearity among the independent variables.

4.1.2.3 The Result of Heteroscedasticity Test

Heterokesdasticity test is utilized to see the deviation of classical assumption which is availability of variant inequality of residual for all observation in regression model (Priyatno, 2014:115). To examine the heterokesdasticity, 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).

Table 13 Heteroscedasticity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.370	.439		.842	.405
	X1_PF	-.012	.014	-.205	-.822	.417
	X2_PNF	.000	.015	-.011	-.042	.967
	Choleric	-.283	.158	-.294	-1.794	.081
	Phlegmatic	.021	.093	.040	.229	.821
	Melancholic	-.043	.163	-.045	-.264	.793

a. Dependent Variable: Res2

From the table above, the result shows that the significant value of independent variables is more than 0.05. Therefore there is no significant relationship between all independent variables with absolute value residual. In short, it can be concluded that there is no assumption of heteroscedasticity.

4.1.2.4 The Result of Autocorrelation Test

Autocorrelation is aimed to examine whether among each variable affects each other in the regression model. The autocorrelation test in this research was conducted with DW approach (Durbin-Watson). A free autocorrelation model is a model that is rated dt larger than dU and its dt value is less than 4-dU, in other words, dU <dt <4-dU (Ghozali, 2011). The dU value is obtained from the benchmark table. The results of the autocorrelation test in this study are shown in the following table:

Table 14 Autocorrelation Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.907[a]	.823	.788	.53882	1.740

a. Predictors: (Constant), Melancholic, Choleric, X2_PNF, Phlegmatic, X1_PF, X4_AR, X3_RH

b. Dependent Variable: Y

Based on the results of Durbin Watson test, statistical test value is obtained (d) of 1.740. The number of n data samples is 43, the number of variables (k) used is 5, the alpha value used is 0.05, the boundary value dL is 1.31655 and dU is 1.72002. In addition, the hypothesis table used as follows:

Table 15 Hypothesis of Autocorrelation Test

Nol Hypotheses (H0)	**Decision**	**Interval**
No positive autocorrelation	Reject	$0 < d < d_L$
No positive autocorrelation	No decision	$d_L \leq d \leq d_U$
No Negative Autocorrelation	Reject	$4 - d_L < d < 4$
No negative Autocorrelation	No decision	$4 - d_U \leq d \leq 4 - d_L$
No positive or negative autocorrelation	Accept	$d_U < d < 4 - d_U$

Based on the results above, the value of statistical test (d) 1.740 is at interval dU <d <4 - dU or 1.72002 <1.740 <2.27997. Therefore, there is no positive or negative autocorrelation.

4.1.2.5 Multiple Linear Regression Analysis

Multiple linear regression analysis is a linear regression in which a dependent variable (Y) is associated with two or more independent variables (X). The objective of multiple linear regression is to find out the effect of the independent variables (X1, X2, x3,…, Xn) toward the dependent variable (Y) (Hadi,2009). Multiple linear regression equations use the variable as follow:

$$\mathbf{Y = a + b1\ X1 + b2\ X2 + \ldots + bn\ Xn}$$

Y is the independent variable, and X is the independent variables, **a** is the constant (intercept) and **b** is the regression coefficient on each independent variable.

Based on the calculation using multiple linear regression model, it can be obtained equation in this research as follows:

$$\mathbf{Y = -3{,}447 + 0{,}064\ X1}$$

Based on the calculation above, a variable of preference for fiction (X1) has a significant of 0.064. This means that only one variable that has an influence on the dependent. The regression relationship of each variable is as follows:

a. Variable of Preference for Fiction (X1)

Variable of preference for fiction (X1) has a significant value of 0.064. It means that every increase of one value of the preference for fiction variable (X1) will increase the score of IELTS by 0.064.

4.1.3 Hypothesis Testing Analysis

Hypothesis testing can be done through proving the regression coefficient. Proof of regression coefficient is conducted to examine the influence of independent variables (X). This test is carried out jointly by using F test or using t-test on the dependent variable (Y). Thus, it will be known whether these independent variables really affect the dependent variable in this study. Here are the explanations:

4.1.3.1 Finding out the effect of the independent variables toward the dependent variable

F test is utilized to find out the simultaneous effect of the independent variables; Preference for Fiction (X1), Preference for Non-fiction (X2), and Temperament types (X3); Sanguine, Choleric, Phlegmatic, Melancholic toward the dependent variable which is Reading Achievement (Y).

Hypothesis:

H0: There is no simultaneous effect of the variable of Preference for Fiction, Preference for Non-fiction, and Temperament Types (Sanguine, Choleric, Phlegmatic, and Melancholic) toward Reading Achievement.

H1: There is a simultaneous effect of the variable of Preference for Fiction, Preference for Non-fiction, and Temperament Types (Sanguine, Choleric, Phlegmatic, and Melancholic) toward Reading Achievement.

Table 16 F-Test

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.257	7	6.751	23.253	.000[a]
	Residual	10.162	35	.290		
	Total	57.419	42			

a. Predictors: (Constant), Melancholic, Choleric, X2_PNF, Phlegmatic, X1_PF
b. Dependent Variable: Y

Based on the results in the ANOVA table, a p-value is obtained of 0.000. If p-value / Sig.value is smaller than alpha (0.05) then H0 is rejected. In short, there are simultaneous effects of the variable of Preference for Fiction, Preference for Non-fiction, and Temperament types (Sanguine, Choleric, Phlegmatic, and Melancholic) toward Reading Achievement.

4.1.3.2 Seeking which independent variable is more influential

The T-test is utilized to seek which the independent variable is more influential toward the dependent variable. In other words, it is intended to seek the independent variables which are Preference for Fiction (X1), Preference for Non-fiction (X2), and Temperament types (X3); Sanguine, Choleric, Phlegmatic, Melancholic that is more influential toward dependent variable which is Reading Achievement (Y).

Table 17 T-Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.447	.943		-3.654	.001		
	X1_PF	.067	.031	.245	2.160	.038	.393	2.546
	X2_PNF	-.003	.033	-.010	-.079	.938	.324	3.087
	Choleric	.064	.339	.014	.190	.851	.906	1.104
	Phlegmatic	.201	.200	.080	1.005	.322	.797	1.254
	Melancholic	-.440	.350	-.097	-1.259	.216	.850	1.177

a. Dependent Variable: Y

Excluded Variables[a]

Model		Beta In	T	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Sanguine	.[b]	.	.	.	.000

a. Dependent Variable: SCORE

b. Predictors in the Model: (Constant), Melancholic, Choleric, X2_PNF, Phlegmatic, X1_PF

1. Testing toward Variable of Preference for Fiction (X1)

H0: There is no significant effect of the Preference for Fiction variable toward Reading Achievement variable.

H1: There is a significant effect of the Preference for Fiction variable toward Reading Achievement variable.

Based on the results in Coefficient table above, p-value (sig) of 0.038 is obtained. If p-value is smaller than alpha (0.05) then H0 is rejected. However, there is significant effect of Preference for Fiction variable toward Reading Achievement variable.

2. Testing toward Variable of Preference for Non-fiction (X2)

H0: There is no significant effect of the Preference for Non-fiction variable toward Reading Achievement variable.

H1: There is a significant effect of the Preference for Non-fiction variable toward Reading Achievement variable.

Based on the results in Coefficient table above, it is obtained that p-value (sig) of 0.938. If p-value is greater than alpha (0.05) then Ho is accepted. Thus, there is no significant effect of the Preference for Non-fiction variable toward Reading Achievement.

3. Testing toward Variable of Temperaments (X3)

a. Choleric $(X3)_1$

H0: There is no significant effect of the temperament of Choleric variable toward Reading Achievement variable.

H1: There is a significant effect of the temperament of Choleric variable toward Reading Achievement

Based on the results in Coefficient table above, it is obtained that p-value (sig) of 0.851. If p-value is greater than alpha (0.05) then H0 is accepted. Indeed, there is no significant effect of the temperament of Choleric variable toward Reading Achievement variable.

b. Phlegmatic $(X3)_2$

H0: There is no significant effect of the temperament of Phlegmatic variable toward Reading Achievement variable.

H1: There is a significant effect of temperament of Phlegmatic variable toward Reading Achievement variable.

Based on the results in Coefficient table above, it is obtained that p-value (sig) of 0.322. If p-value is greater than alpha (0.05) then H0 is accepted. Thus, there is no significant influence of the temperament of Phlegmatic variable toward Reading Achievement variable.

c. Melancholic $(X3)_3$

H0: There is no significant effect of the temperament of Melancholic variable toward Reading Achievement variable.

H1: There is a significant effect of temperament of Melancholic variable toward Reading Achievement variable.

Based on the results in Coefficient table above, it is obtained that p-value (sig) of 0.216. If p-value is greater than alpha (0.05) then H0 is accepted. Thus, there is no significant influence of the temperament of Melancholic variable toward Reading Achievement variable.

4.1.3.3 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. The following is table of coefficient determination test, 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.

Table 18 Determination Coefficient Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.907[a]	.823	.788	.53882	1.740

a. Predictors: (Constant), Melancholic, Choleric, X2_PNF, Phlegmatic, X1_PF

b. Dependent Variable: Y

Based on the above table, the value of the coefficient of determination or R square is 82.3%. That is, the diversity of Reading Achievement values that can be explained by Preference for Fiction, Preference for Non-fiction, and Temperaments are 82.3% and 17.3% is explained by other variables.

4.2 Interpretation

Table 6, the distribution of the result of temperaments types showed that 58% of the pupils were dominant for Sanguine. Most students agreed that they tend to be hectic, making new friends, and enjoy gatherings. They are conversational and not sheepish. People who are sanguine commonly have an almost barefaced nature, certain that what they are doing is right. In addition, they also have no lack of confidence (Cantrell, 2001:11). In short, people who are in sanguine type are optimistic, lively, pleasant, and warm-hearted. It is line with the study conducted by Nodhousan (2011) in which pupil who got high score was in sanguine. In addition, the Phlegmatic is in principle attentive, quiet and relaxed. As argued by Cantrell (2001:21) defined the people who have the characteristics of Phlegmatic are making friend easily, consistent, faithful friends, and affectionate. Observing and thinking in the surrounding while not getting involved are the characteristics of Phlegmatic. Hence, Phlegmatic type tends to be curious, relaxed, calm, consistent, rational, and observant. Moreover, people who are

fundamentally ambitious and leader-like are in Choleric type. As argued by Cantrell (2001:13) defined the people who have the characteristics of Choleric have lots passion, energy, aggression, and attempt to affect others**.** They tend to focus on getting a work done effectively. In addition, they also can dominate people of other temperaments, mainly the phlegmatic type. They are not only good at planning, but also like to be in charge in everything. Furthermore, the Melancholic people are generally introverted and given to thought. They are often noticed as very cautious and considerate. They are not only organized people, but also schedule oriented. Being highly creative in activities such as art, invention, and poetry is the characteristics of Melancholic. They are not only often perfectionists, but also in high degree of personal excellence for their desire (Cantrell, 2001:10). Thus, melancholic people are independent, preferring to do everything themselves, organized, and perfectionist. Therefore, some students focused on the achievement and others displayed and brought their temperaments type to the society.

The results of the reading preference questionnaire in table 8 show that only one independent variable that has significant effect as a predictor. It is the variable of Preference for Fiction (X1) that has an average of 44.19; the minimum value of 36.00; maximum value of 53.00; and the variance of 4,278.

Based on the result of the students' Reading Achievement, table 10, there are three reading achievement categories. 37.20% (16) students are in a low category, 54.48% (23) students are in a medium category, and only 9.30% students are in a high category. From the distribution above, it is revealed that "Medium' category is the most frequent level of students' reading achievement 53.48% (4). For this case, the second year students of SMA Muhammadiyah 2 Surabaya showed that they got some factors in achieving the result of English.

The SPANOVA was conducted to analyze the effect of the independent variables (X) toward the dependent variable (Y). Based on the analysis of the two questionnaires and the IELTS score, table 16 revealed that there is a simultaneous effect between the variables of Preference for Fiction, Preference for Non-fiction, and Temperament Types (Sanguine, Choleric, Phlegmatic, Melancholic) toward Reading Achievement of the second year students at SMA Muhammadiyah 2 Surabaya, in which p-value / Sig.value is smaller than alpha (0.05). Furthermore, the second problem of the study could be analyzed. Furthermore, T-test is used to find out which independent variables; Preference for Fiction (X1), Preference for Non-fiction (X2), and Temperament types (X3) is more influential toward the dependent variable, which is Reading Achievement (Y). Based on the results in the Coefficient table, the variable of preference for fiction (X1) has p-value (sig) of 0.038, in which p-value is smaller than alpha (0.05) then H0 is rejected. In short, there is significant effect of the Preferences for Fiction variable toward Reading Achievement. In other words, there is only one independent variable that consists of preference for fiction (X1) which is more influential toward the dependent variable. The students tended to read fiction because it is supposed to amuse the readers, but it can also inform, persuade or inspire. In the same line, Bouchamma, et al (2013) identified the reading preference of boys and girls. The findings showed that boys prefer to read newspaper article which is found on the internet, textbook, and magazine. On the contrary, girls are more interested to read novel, fiction book, and book from the school or local library. Among these preferences, Bouchamma, et al (2013) also identified those that determine reading achievement, which in fact are the same for both boys and girls: reading novels or fiction, informative or non-fiction texts, and books or other reading material from the school library. On the other hand, there is no significant effect of the variable of temperament types in the study because p-value of the temperaments type variable is bigger than alpha (0.05) then H0 is accepted. In short, there is no significant effect of the temperament types on Reading Achievement. In addition, Yahya (2012) found that there were none of the personality traits showed a significant correlation between reading proficiency. It is also the same line with Ghazi, Shahzada, and Ullah (2013) found that the students' personality traits and

their overall academic were not a significant relationship. On the contrary, some researchers are like Bagheri and Faghih (2012) and Ali and Bano (2012) found significant correlation between personality and other variables.

In this study, the researcher revealed that the pupils' temperament types had no significant effect toward their reading achievement. It was caused that some factors on each side of variables happened. When joining the test, the pupils appeared more serious to achieve, controlled emotion, and focus on the test and others brought out more to the society than to the achievement.

The pupils considered that the questions of each section were complex, thus some factors had been the reason for the pupils when joining the test. In Indonesia, junior and senior students learn English course which is only four hours every week and taught by educator having the limited own L2 competence (Lamb, 2002:36). It can be defined that the pupils have some factors either inside or outside which impact to their language learning achievement. As argued by Susanto (2016:135), the limited atmosphere and the use of learning English are the reasons for the success in achieving competence in English for the foreign learner. Intelligence, self-concept, gender, study habit, maturation, home background, and being responsible are the factors in achieving the success of English (Eyong et.al., 2014:12). From those statements, it can be considered that the students had either the diversity of intelligent or home background and got limited atmosphere on going the test. However, the temperament types and English achievement, mainly in reading achievement were not associated. The result of the study revealed that the second year students of SMA Muhammadiyah 2 Surabaya sometimes utilized their temperament types at all-time into their life and environment which was the most dominant factor. Furthermore, temperament types can be also made use in either academic or specific achievement, students' motivation, or another variable.