Appendix 6

To examine the validity of instrument (measurer), the first finding the correlation score between parts of the test instrument as a whole, namely by correlating every score of items test with a total score. The following steps:

Step 1:

Calculating the score of each item by using the correlation formula of Pearson Product Moment



Example: calculation of item no. 1 in variable reading comprehension



Step 2:

Take a decision by comparing between rcount with rtable. The decision rules are as follows:

if rcount > rtable means valid and

rcount < rtable means not valid

Meanwhile, to determine the internal reliability of the instrument, the formula used is Alpha formula (Ghozali, 2005:44) as follows:



Information of symbol:

 = value of the instrument reliability

 = the numbers of variance of score each item

*St* = the total variance

*k* = the number of items

1: Calculation of the variable reliability of reading comprehension test result



S1 =  = 0,09

S2 =  = 0,24

S3 =  = 0,21

It is calculated from S1 to S20, and the results of all (S1 to S20)is 3.10



St =  = 37,36



r11 = 

r11 = 0,965

2. Calculation of the variable reliability of tenses test result



S1 =  = 0,21

S2 =  = 0,21

S3 =  = 0,16

It is calculated from S1 to S20, and the results of all is 3.74



St =  = 45,56



r11 = 

r11 = 0,966

1. Calculation of the variable reliability of pronouns test result



S1 =  = 0,16

S2 =  = 0,09

S3 =  = 0,09

It is calculated from S1 to S20, and the results of all is 2.97



St =  = 38,09



r11 = 

r11 = 0,971

The next step, making the decisions by comparing r11 withcriteria of reliability

0% ≤ r ≤ 20 % : the reliability is negligible

20% ≤ r ≤ 40 % : the reliability is low

40% ≤ r ≤ 60 % : the reliability is moderate

60% ≤ r ≤ 80 % : the reliability is substantial

80% ≤ r ≤ 100 % : the reliability is high to very high

Based on the data of the try out result, the score of all variables reliability was 80% < r ≤ 100%. It means that the instruments have high reliability. So it can be stated that all the instruments can be used in the research.

Results of the validity and reliability tests can be seen in Table below. Table 1, 2, and 3 shows product moment results by using Excel,

**Table 1**

**Validity and Reliability of Multiple Choice Test about Reading Comprehension**

**Using Product Moment Formula (Excel)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **NAME CODE** | **SCORE** | | | | | | | | | | | | | | | | | | | | **Total (Y)** | **Square** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **Total** |
| **1** | **A1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **0** | **4** | **16** |
| **2** | **A2** | **1** | **0** | **1** | **1** | **1** | **1** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **18** | **324** |
| **3** | **A3** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **4** | **A4** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **5** | **A5** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **6** | **A6** | **1** | **1** | **1** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **0** | **1** | **0** | **1** | **1** | **1** | **1** | **17** | **289** |
| **7** | **A7** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **4** | **16** |
| **8** | **A8** | **1** | **0** | **0** | **1** | **1** | **1** | **0** | **1** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **0** | **15** | **225** |
| **9** | **A9** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **10** | **A10** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **Total Xi** | | **9** | **6** | **7** | **7** | **8** | **9** | **6** | **8** | **7** | **9** | **9** | **9** | **8** | **7** | **9** | **7** | **9** | **8** | **9** | **7** | **158** | **2870** |
| **Total Xi2** | | **9** | **6** | **7** | **7** | **8** | **9** | **6** | **8** | **7** | **9** | **9** | **9** | **8** | **7** | **9** | **7** | **9** | **8** | **9** | **7** |  |  |
| **Total XY** | | **154** | **117** | **135** | **133** | **150** | **154** | **117** | **150** | **135** | **154** | **154** | **154** | **150** | **133** | **154** | **133** | **154** | **150** | **154** | **135** |  |  |
| **r-statistic** | | **0.644** | **0.741** | **0.871** | **0.800** | **0.965** | **0.644** | **0.741** | **0.965** | **0.871** | **0.644** | **0.644** | **0.644** | **0.965** | **0.800** | **0.644** | **0.800** | **0.644** | **0.965** | **0.644** | **0.871** |  |  |
| **r-table** | | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** |  |  |
| **Criteria** | | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **Valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** |  |  |
| **Varian score** | | **0.09** | **0.24** | **0.21** | **0.21** | **0.16** | **0.09** | **0.24** | **0.16** | **0.21** | **0.09** | **0.09** | **0.09** | **0.16** | **0.21** | **0.09** | **0.21** | **0.09** | **0.16** | **0.09** | **0.21** |  | **3.10** |
| **Varian total** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **37.36** |
| **Reliability** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **0.965** |

**Table 2**

**Validity and Reliability of Multiple Choice Test about Tenses**

**Using Product Moment Formula (Excel)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **NAME CODE** | **SCORE** | | | | | | | | | | | | | | | | | | | | **Total (Y)** | **Square** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **Total** |
| **1** | **A1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **2** | **A2** | **0** | **0** | **1** | **0** | **1** | **0** | **1** | **0** | **0** | **1** | **1** | **1** | **1** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **13** | **169** |
| **3** | **A3** | **1** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **4** | **16** |
| **4** | **A4** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **5** | **A5** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **6** | **A6** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **7** | **A7** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **8** | **A8** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **9** | **A9** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **1** | **0** | **0** | **1** | **0** | **5** | **25** |
| **10** | **A10** | **0** | **1** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **1** | **1** | **0** | **0** | **6** | **36** |
| **Total Xi** | | **7** | **7** | **8** | **7** | **8** | **6** | **7** | **7** | **6** | **8** | **8** | **8** | **8** | **6** | **8** | **8** | **8** | **8** | **8** | **7** | **148** | **2646** |
| **Total Xi2** | | **7** | **7** | **8** | **7** | **8** | **6** | **7** | **7** | **6** | **8** | **8** | **8** | **8** | **6** | **8** | **8** | **8** | **8** | **8** | **7** |  |  |
| **Total XY** | | **124** | **126** | **138** | **124** | **139** | **120** | **133** | **124** | **120** | **137** | **139** | **138** | **138** | **120** | **139** | **138** | **139** | **139** | **138** | **133** |  |  |
| **r-statistic** | | **0.660** | **0.724** | **0.726** | **0.660** | **0.763** | **0.944** | **0.950** | **0.660** | **0.944** | **0.689** | **0.763** | **0.726** | **0.726** | **0.944** | **0.763** | **0.726** | **0.763** | **0.763** | **0.726** | **0.950** |  |  |
| **r-table** | | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** |  |  |
| **Criteria** | | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **Valid** | **valid** | **valid** | **valid** | **valid** |  |  |
| **Varian score** | | **0.21** | **0.21** | **0.16** | **0.21** | **0.16** | **0.24** | **0.21** | **0.21** | **0.24** | **0.16** | **0.16** | **0.16** | **0.16** | **0.24** | **0.16** | **0.16** | **0.16** | **0.16** | **0.16** | **0.21** |  | **3.74** |
| **Varian total** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **45.56** |
| **Reliability** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **0.966** |

**Table 3**

**Validity and Reliability of Multiple Choice Test about Pronouns**

**Using Product Moment Formula (Excel)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **NAME CODE** | **SCORE** | | | | | | | | | | | | | | | | | | | | **Total (Y)** | **Square** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **Total** |
| **1** | **A1** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **0** | **4** | **16** |
| **2** | **A2** | **1** | **1** | **1** | **1** | **1** | **1** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **19** | **361** |
| **3** | **A3** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **4** | **A4** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **5** | **A5** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **6** | **A6** | **1** | **1** | **1** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **18** | **324** |
| **7** | **A7** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **4** | **16** |
| **8** | **A8** | **1** | **1** | **1** | **1** | **1** | **1** | **0** | **1** | **0** | **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **0** | **16** | **256** |
| **9** | **A9** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **10** | **A10** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **20** | **400** |
| **Total Xi** | | **8** | **9** | **9** | **7** | **8** | **8** | **6** | **9** | **7** | **7** | **9** | **7** | **8** | **9** | **8** | **9** | **9** | **9** | **8** | **7** | **161** | **2973** |
| **Total Xi2** | | **8** | **9** | **9** | **7** | **8** | **8** | **6** | **9** | **7** | **7** | **9** | **7** | **8** | **9** | **8** | **9** | **9** | **9** | **8** | **7** |  | **161** |
| **Total XY** | | **153** | **157** | **157** | **135** | **153** | **153** | **118** | **157** | **137** | **137** | **157** | **135** | **153** | **157** | **153** | **157** | **157** | **157** | **153** | **137** |  |  |
| **r-statistic** | | **0.980** | **0.654** | **0.654** | **0.788** | **0.980** | **0.980** | **0.708** | **0.654** | **0.859** | **0.859** | **0.654** | **0.788** | **0.980** | **0.654** | **0.980** | **0.654** | **0.654** | **0.654** | **0.980** | **0.859** |  |  |
| **r-table** | | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** | **0.632** |  |  |
| **Criteria** | | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **Valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** | **valid** |  |  |
| **Varian score** | | **0.16** | **0.09** | **0.09** | **0.21** | **0.16** | **0.16** | **0.24** | **0.09** | **0.21** | **0.21** | **0.09** | **0.21** | **0.16** | **0.09** | **0.16** | **0.09** | **0.09** | **0.09** | **0.16** | **0.21** |  | **2.97** |
| **Varian total** | | **8** | **9** | **9** | **7** | **8** | **8** | **6** | **9** | **7** | **7** | **9** | **7** | **8** | **9** | **8** | **9** | **9** | **9** | **8** | **7** |  | **38.09** |
| **Reliability** | | **8** | **9** | **9** | **7** | **8** | **8** | **6** | **9** | **7** | **7** | **9** | **7** | **8** | **9** | **8** | **9** | **9** | **9** | **8** | **7** |  | **0.971** |

To examine there is or no the correlation between X1 and Y or X2 and Y, it can be done by calculating the score of correlation among variables. The following steps:

Step 1:

Calculating the score correlation by using formula of Pearson Product Moment



1. Calculation of the score of correlation between X1 and Y



1. Calculation the score of correlation between X and Y



Step 2.:

Making the decisions by comparing rcount with rtable. The decision rules are as follows:

If rcount  > rtable it means significant

rcount < rtable it means not significant

the interpretation criteria of correlation index (r) are as follows:

|  |  |
| --- | --- |
| Coefficient (r) | Relationship |
| 0,00 to 0,20 | Negligible |
| 0,20 to 0,40 | Low |
| 0,40 to 0,60 | Moderate |
| 0,60 to 0.80 | Substantial |
| 0,80 to 0.100 | high to very high |

**Table 10**

**Results of Product Moment Between Mastery Tenses and Reading Comprehension Test By Using Excel**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NO | NAME CODE | X2 | Y | Square |
| Total |
| 1 | B1 | 16 | 16 | 256 |
| 2 | B2 | 15 | 15 | 225 |
| 3 | B3 | 9 | 4 | 16 |
| 4 | B4 | 20 | 17 | 289 |
| 5 | B5 | 18 | 18 | 324 |
| 6 | B6 | 19 | 18 | 324 |
| 7 | B7 | 18 | 15 | 225 |
| 8 | B8 | 16 | 15 | 225 |
| 9 | B9 | 18 | 16 | 256 |
| 10 | B10 | 18 | 15 | 225 |
| Total Xi | | 167 | 149 | 2365 |
| Total Xi2 | | 2875 |  | 2875 |
| Total XY | | 2591 |  |  |
| r statistic | | 0.919 |  |  |
| rtable | | 0.632 |  |  |
| Criteria | | Significant | |  |

**Table 11**

**Results of Product Moment Between Mastery Pronoun and Reading Comprehension Test By Using Excel**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NO | NAME CODE | X2 | Y | Square |
| Total |
| 1 | B1 | 20 | 16 | 256 |
| 2 | B2 | 16 | 15 | 225 |
| 3 | B3 | 7 | 4 | 16 |
| 4 | B4 | 20 | 17 | 289 |
| 5 | B5 | 18 | 18 | 324 |
| 6 | B6 | 18 | 18 | 324 |
| 7 | B7 | 17 | 15 | 225 |
| 8 | B8 | 19 | 15 | 225 |
| 9 | B9 | 15 | 16 | 256 |
| 10 | B10 | 16 | 15 | 225 |
| Total Xi | | 166 | 149 | 2365 |
| Total Xi2 | | 2884 |  | 2884 |
| Total XY | | 2596 |  |  |
| rstatistic | | 0.899 |  |  |
| rtable | | 0.632 |  |  |
| Criteria | | Significant | |  |

1. Based on the calculation result, it is obtained that rcount = 0,919 > 0,632, so it can be included that there is significant correlation between X1 (*tenses mastery*) with Y (*reading comprehension competence*), and the correlation is very strong.
2. Based on the calculation result, it is obtained that rcount = 0,899 > 0,632, so it can be included that there is significant correlation between X2 (*tenses mastery*) with Y (*reading comprehension competence*), and the correlation is very strong