APPENDIX C

T-Tests

The t-test is probably the most widely used statistical test for the comparison of two means because it can be used with very small sample sizes as well as with large-size samples. It tests the significance of difference between two means. The concept of degrees of freedom is very important in all hypothesis testing. Mathematicians have decided that the best way to use sample averages as estimates of population parameters is to use N-1 which is related to degree of freedom. The number of degree of freedom is important in the t-test, for it determines the shape of the frequency distribution for t values.

It should be compared with the 't' critical value in the 't'-distribution table in the Appendix of statistical books. If the 't'-observed value is greater, one can claim statistical significance and thus reject the null hypothesis. The 't' critical value will vary according to the number of degrees of freedom and the size of the samples that make up the distribution. For the present study the formula used by us calculate the 't' is:

\[ t = \frac{\bar{D}}{S_o} \sqrt{N-1} \]

where:

\[ \bar{D} = \frac{\sum_{i=1}^{N} D_i}{N} \]

\( S_o \) : Standard Deviation
\( N \) : Number of Observations (Students)
\( D_i \) :
\( \bar{D} \) : Mean

Source: Hatch and Farhady (1982)