

Appendix 8

The Reliability of the Data Collecting Instrument

a. Reliability of the half test

(Pearson Product Moment Formula on Hening, 1987: 60)

$$r_{xy} = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2][N \sum y^2 - (\sum y)^2]}}$$

$$r_{xy} = \frac{(30)(16870) - (683)(740)}{\sqrt{[30 \times 15835 - (683)^2][30 \times 18482 - (740)^2]}}$$

$$r_{xy} = \frac{506100 - 505420}{\sqrt{[475050 - 466489][554460 - 547600]}}$$

$$r_{xy} = \frac{680}{\sqrt{[8561][6860]}}$$

$$r_{xy} = \frac{680}{\sqrt{58728460}}$$

$$r_{xy} = \frac{680}{7663.44}$$

$$r_{xy} = 0.08$$

b. Reliability of the whole test

(Spearman Brown's Prophecy Formula on Hatch and Fardhady, 1982: 246)

$$r_k = \frac{2r_{xy}}{1 + r_{xy}}$$

$$r_k = \frac{2(0.08)}{1 + 0.08}$$

$$r_k = \frac{0.16}{1.08}$$

$$r_k = 0.15$$