

Example Summary of Analysis

If this were my dissertation or study to be published, I would summarize the analyses we have just worked through as follows (eliminating much of the detail you would cover, such as sampling and measurement).

The initial analysis predicting salary from institution size indicated several potential problems. First, there seemed to be substantial heterogeneity, and possible nonlinearity. Second, examination of standardized residuals and DfFit indicators of influence suggested 11 cases that were inappropriately influential ($DfFit > 33 SD$ from the mean; $ZRE > |3.0|$). After they were removed, a curvilinear regression analysis was performed entering the original (linear) effect first, and then the squared, cubed, and quartic terms on separate steps.

All four steps led to significant improvement in model variance accounted for, as you can see in Table 7.2. Ultimately, this model is relatively strong, accounting for over 44% of the variance in salary. Furthermore, after data cleaning and entry of curvilinear terms, normality of residuals was improved and assumption of homoscedasticity was met. Thus, all terms were retained, and the regression line equation from the final model was graphed and is presented in Figure 7.10.

As you can see in Figure 7.10, the salary of associate professors is strongly related to institution size (or our proxy for size, the total number of faculty) when the institutions are below average; however, for those institutions above the mean, there is little added effect of size on faculty salary.