

Bonus 3 – Alan Kessler
PREDICT 410 Section 57

The purpose of the principal component analysis shown in the example is to create a set of orthogonal variables to use in a regression. The correlation matrix printed in the SAS output indicates that collinearity could be a concern. For example, the correlation between Population and Employment is 0.9725.

The analysis indicates that the first two principal components explain over 90% of the variance in the data. The first component shows positive loadings for all variables with the largest loading for Services as it is correlated with all of the other variables. The second component has high positive loadings for Employment and Population, a small negative loading for Services, and larger negative loadings for the other variables. This factor likely relates to high density, low-income areas. These components could be used in regression or clustered for classification purposes.