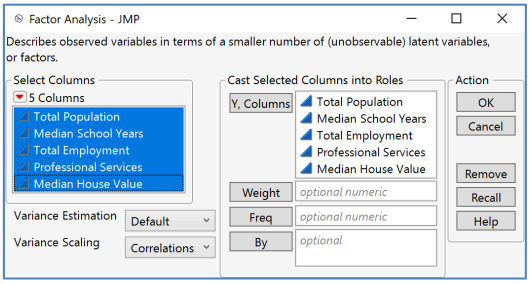
Factor Analysis

Factor Analysis is an analysis technique that seeks to describe the variation in a set of observed variables in terms of a smaller number of unobserved latent variables or factors.

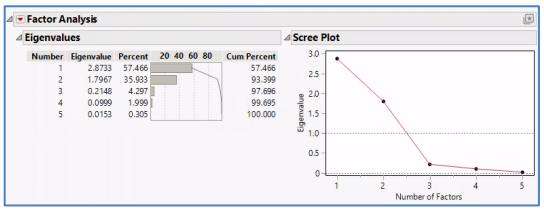
Factor Analysis

Socioeconomic.jmp (Help > Sample Data Folder)



1. From an open JMP® data table, select **Analyze > Multivariate Methods > Factor Analysis**.
2. Select continuous variables from **Select Columns**, and Click **Y, Columns** (continuous variables have blue triangles).
3. Click **OK**.

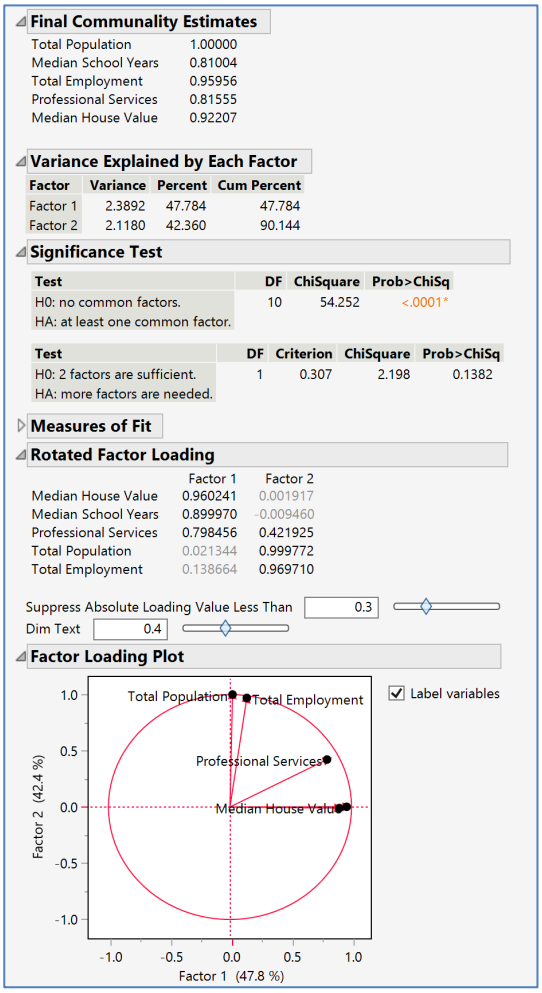
   JMP displays an Eigenvalue report and a Scree Plot, along with a **Model Launch** dialog.



4. Click **Go** in the **Model Launch** dialog to run the factor analysis at the default settings.

   The following results are provided (additional options are available under the red triangles):

   - Final communality estimates
   - The variance explained by each factor
   - Significance tests for the factor analysis
   - Rotated factor loadings
   - Factor loading plot



Interpretation of results:

- Factor 1 seems to be related to socioeconomic status, as Median House Value and Median School Years have large loadings on the factor.
- Factor 2 seems related to the labor force condition, as Total Population and Total Employment load highly on this factor.
- Professional Services loads on both factors.

Tips:

- The default factoring method is **Maximum Likelihood**, the **number of factors** to extract is 2, and the rotation method is **Varimax**. These options can be changed in the Model Launch dialog (shown above).
- To save the factor scores as new columns to the data table, click on the **red triangle** and select **Save Rotated Components**.

Visit **Multivariate Methods > Factor Analysis** in **JMP Help** to learn more.