

DVA LAB EXAM

NAME :- P SAI VARUN

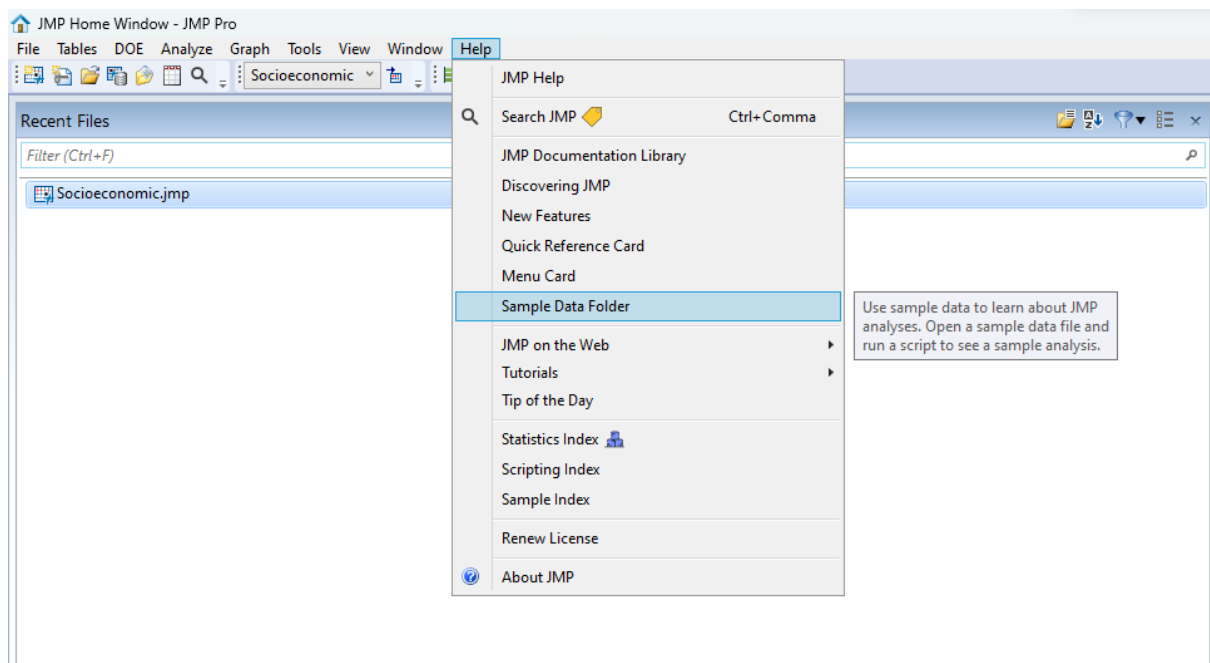
USN :- 1BM21AI110

QUESTION - 3

STEP 1-> OPEN JMP SOFTWARE

->CLICK ON HELP ->SAMPLE DATA FOLDER ->DATA SET

-> OPEN ANY DATABASE FROM THE GIVEN AVAILABLE DATABASE .EX- SOCIO ECONOMIC DATABASE



Name	Date modified	Type	Size
Design Experiment	30-12-2023 12:03	File folder	
Functional Data	30-12-2023 12:03	File folder	
Life Sciences	30-12-2023 12:03	File folder	
Loss Function Templates	30-12-2023 12:03	File folder	
Nonlinear Examples	30-12-2023 12:03	File folder	
Quality Control	30-12-2023 12:03	File folder	
Reliability	30-12-2023 12:03	File folder	
Time Series	30-12-2023 12:03	File folder	
Variability Data	30-12-2023 12:03	File folder	
2D Gaussian Process Example	28-01-2023 10:30	JMP Data Table	3 KB
Abrasion	28-01-2023 10:30	JMP Data Table	4 KB
Academic Achievement	28-01-2023 10:30	JMP Data Table	35 KB
AdverseR Split	28-01-2023 10:30	JMP Data Table	26 KB
AdverseR	28-01-2023 10:30	JMP Data Table	43 KB
Air Traffic	28-01-2023 10:30	JMP Data Table	411 KB
Aircraft Incidents	28-01-2023 10:30	JMP Data Table	755 KB
Airline Delays	28-01-2023 10:30	JMP Data Table	290 KB
Alcohol	28-01-2023 10:30	JMP Data Table	3 KB
Amplitude 21	28-01-2023 10:30	JMP Data Table	6 KB
Amplitude 100	28-01-2023 10:30	JMP Data Table	7 KB
Analgesics	28-01-2023 10:30	JMP Data Table	6 KB
Animals Subset	28-01-2023 10:30	JMP Data Table	3 KB
Animals	28-01-2023 10:30	JMP Data Table	8 KB
Anscombe	28-01-2023 10:30	JMP Data Table	5 KB
Antibiotic MICs	28-01-2023 10:30	JMP Data Table	7 KB
Arrhythmia	05-04-2023 19:00	JMP Data Table	1,117 KB
Attribute Gauge	28-01-2023 10:30	JMP Data Table	10 KB

Step 2:- you will find the desired dataset on the jmp software

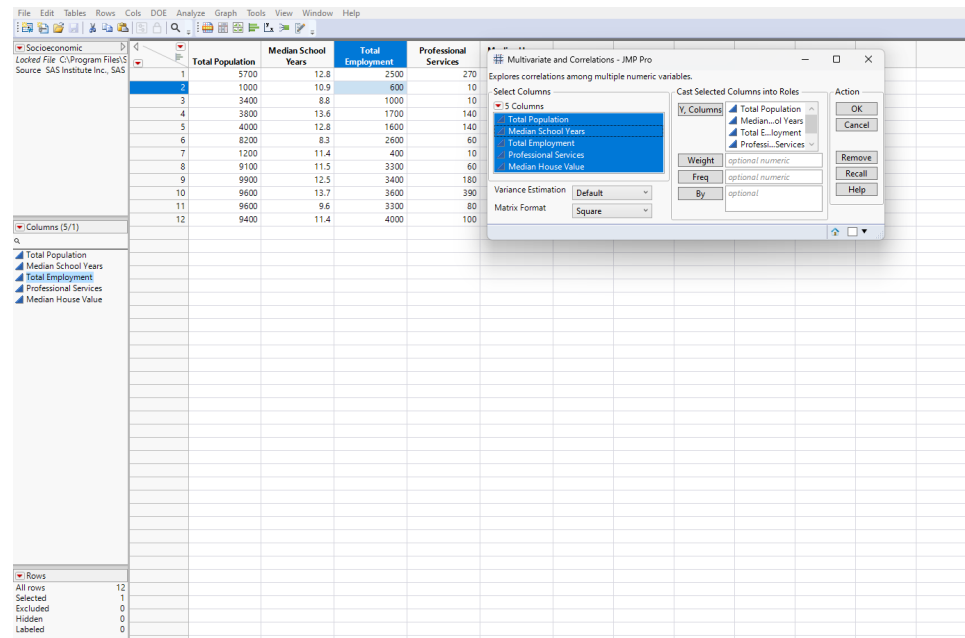
	Total Population	Median School Years	Total Employment	Professional Services	Median House Value
1	5700	12.8	2500	270	25000
2	1000	10.9	600	10	10000
3	3400	8.8	1000	10	9000
4	3800	13.6	1700	140	25000
5	4000	12.8	1600	140	25000
6	8200	8.3	2600	60	12000
7	1200	11.4	400	10	16000
8	9100	11.5	3300	60	14000
9	9900	12.5	3400	180	18000
10	9600	13.7	3600	390	25000
11	9500	9.6	2300	80	12000
12	9400	11.4	4000	100	13000

Step3:- click on analyse and then click on multivariate methods

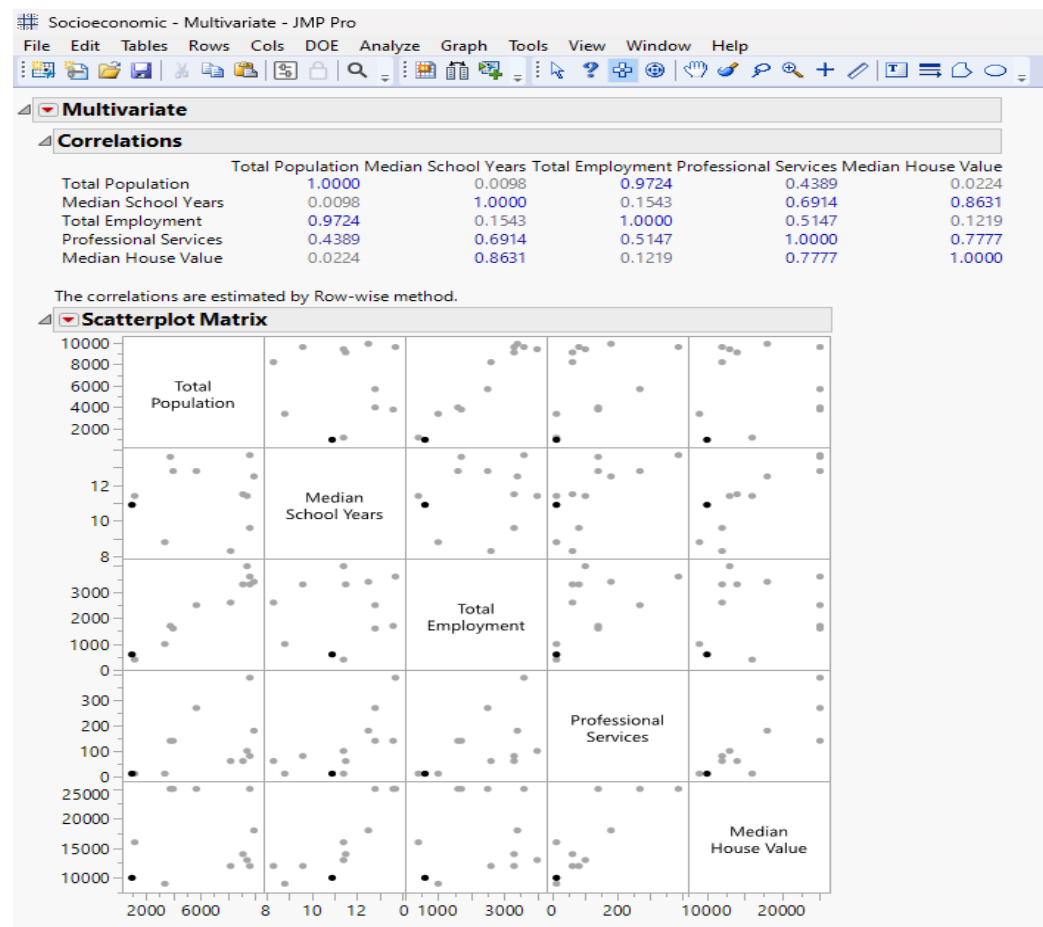
	Total employment	Professional Services	Median House Value
1	2500	270	25000
2	600	10	10000
3	1000	10	9000
4	1700	140	25000
5	1600	140	25000
6	2600	60	12000
7	400	10	16000

Step 4:- -> FOR MULTIVARIATE ANALYSIS OUTPUT

->CLICK ON MULTIVARIATE AND PASTE ALL THE COLUMNS IN THE Y-AXIS TO GET MULTIVARIATE ANALYSIS OUTPUT

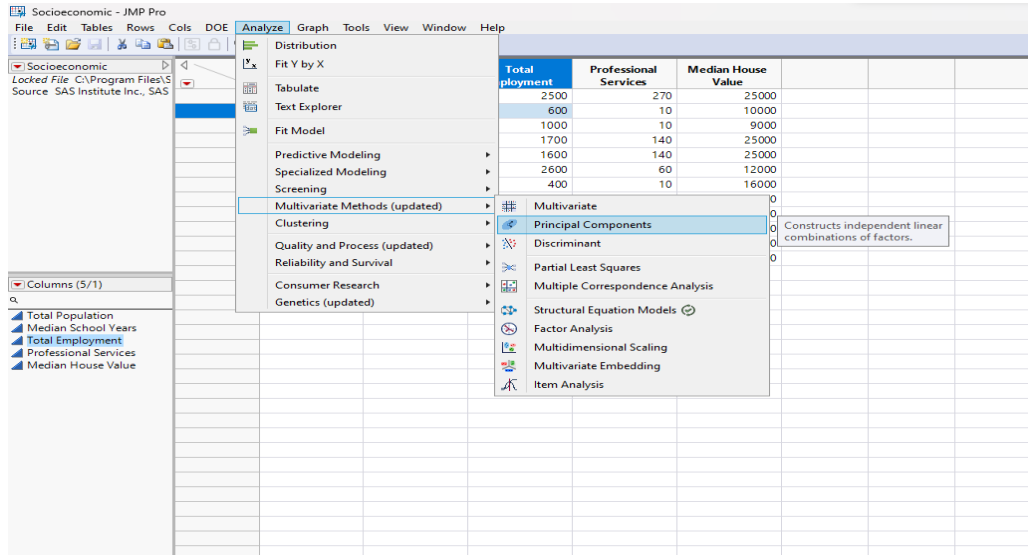


MULTIVARIATE OUTPUT



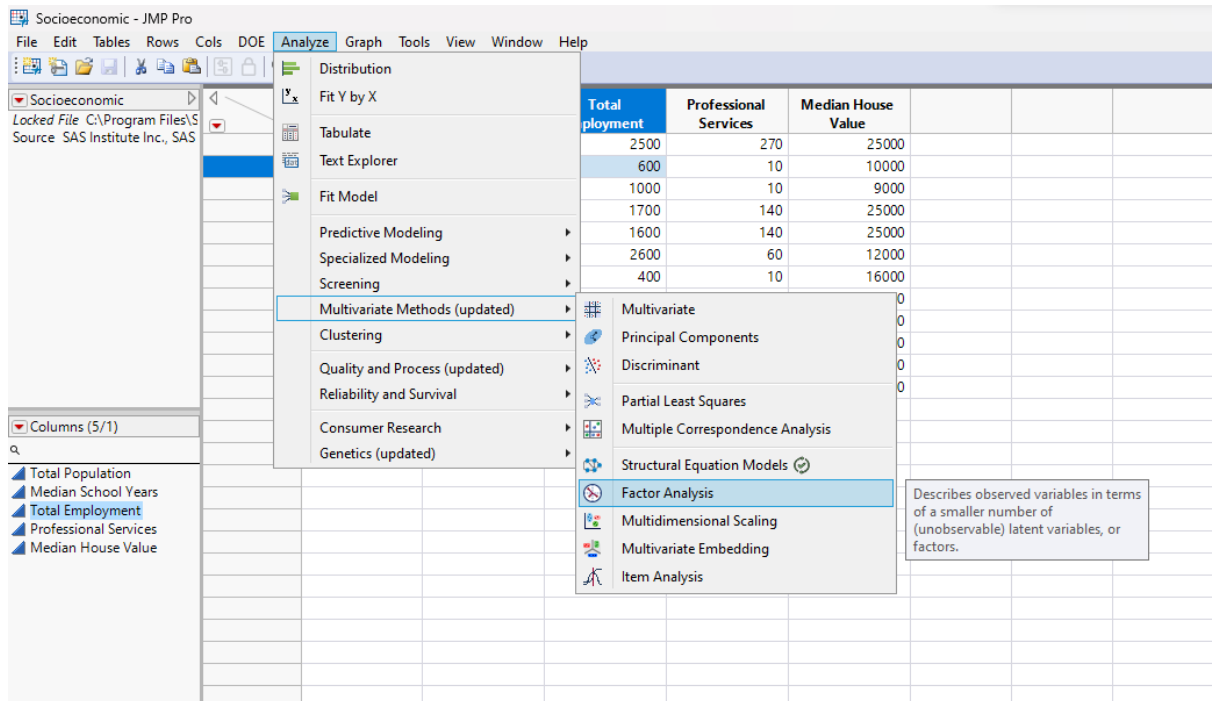
➔ STEPS TO GET PRINCIPLE COMPONENT ANALYSIS (PCA) OUTPUT

STEP 1:- CLICK ON ANALYSE ->MULTIVARIATE METHODS ->PRINCIPLE COMPONENT ANALYSIS TO GET PCA OUTPUT

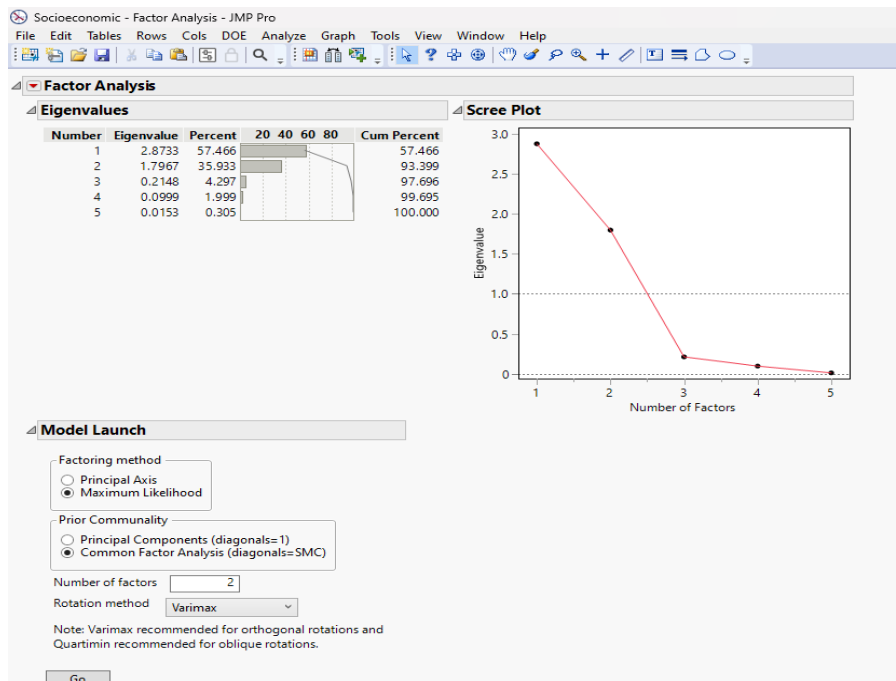


➔ STEPS TO GET FACTOR ANALYSIS

STEP 1 -> CLICK ON ANALYSE ->MULTIVARIATE METHODS -> FACTOR ANALYSIS TO GET THE OUTPUT



FACTOR ANALYSIS



➔ TO FIND DISCREMINANT

STEP 1 :-CLICK ON ANALYSIS -> MULTIVARIATE METHODS ->DISCREMINANT

Socioeconomic - JMP Pro

File Edit Tables Rows Cols DOE Analyze Graph Tools View Window Help

Socioeconomic

Locked File C:\Program Files\SAS
Source SAS Institute Inc., SAS

Columns (5/1)

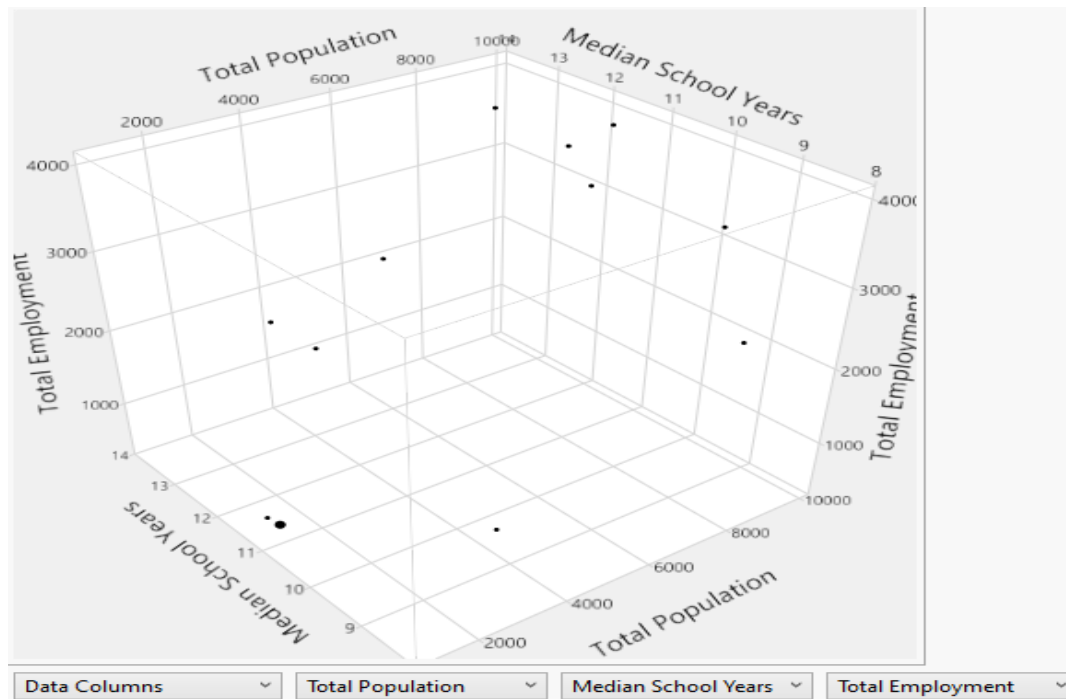
- Total Population
- Median School Years
- Total Employment
- Professional Services
- Median House Value

Analyze

- Distribution
- Fit Y by X
- Tabulate
- Text Explorer
- Fit Model
- Predictive Modeling
- Specialized Modeling
- Screening
- Multivariate Methods (updated)
 - Clustering
 - Quality and Process (updated)
 - Reliability and Survival
 - Consumer Research
 - Genetics (updated)
- Multivariate
 - Principal Components
 - Discriminant**
 - Partial Least Squares
 - Multiple Correspondence Analysis
 - Structural Equation Models
 - Factor Analysis
 - Multidimensional Scaling
 - Multivariate Embedding
 - Item Analysis

Total employment	Professional Services	Median House Value
2500	270	25000
600	10	10000
1000	10	9000
1700	140	25000
1600	140	25000
2600	60	12000
400	10	16000

Classifies categorical group membership based on continuous variables.



➔ STEPS TO GET PARTIAL LEAST SQUARE (PLS)

STEP 1 :- CLICK ON ANALYSE ->MULTIVARIATE METHODS -> PARTIAL LEAST SQUARE(PLS)

STEP 2 :- SELECT THE REQUIRED X AND Y VALUES FROM THE TABEL AND DROP THEM IN THE RESPECTIVE COLUMN

The screenshot shows the JMP Pro software interface with the 'Analyze' menu open. The path to 'Partial Least Squares' is highlighted: **Analyze** > **Multivariate Methods (updated)** > **Partial Least Squares**.

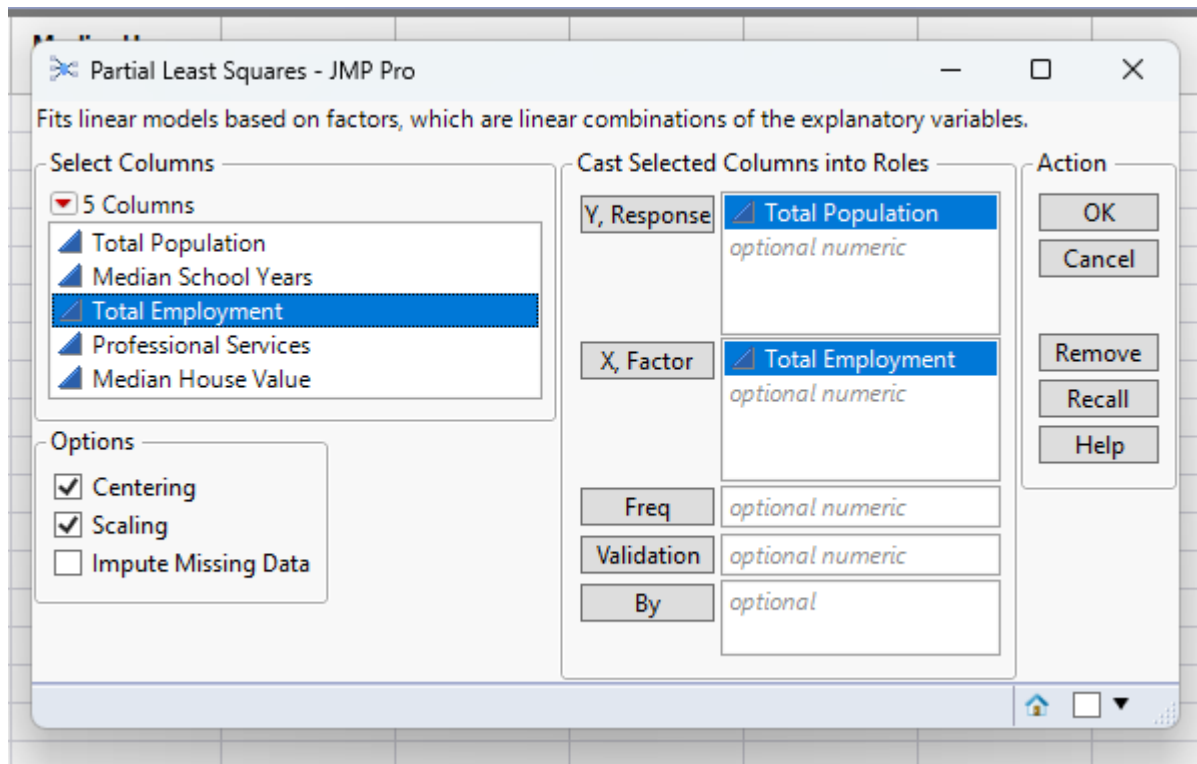
The 'Columns' list on the left includes:

- Total Population
- Median School Years
- Total Employment
- Professional Services
- Median House Value

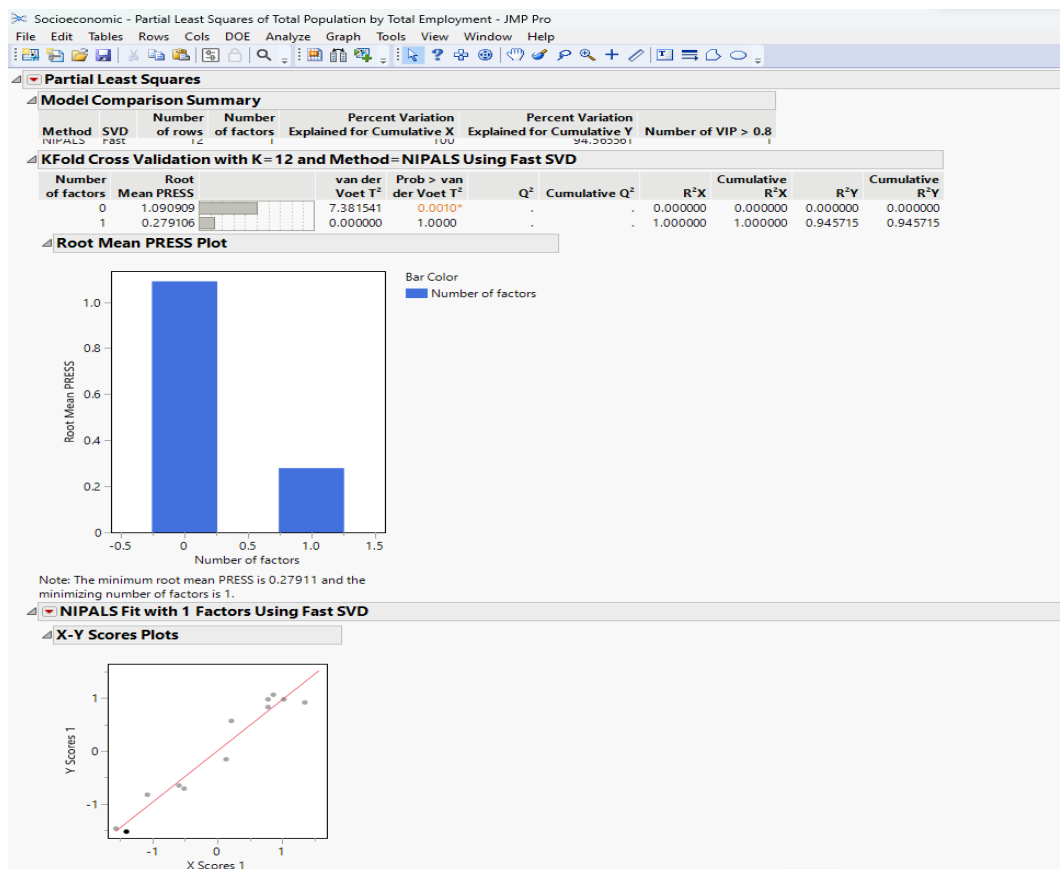
The data table on the right shows the following data:

Total employment	Professional Services	Median House Value
2500	270	25000
600	10	10000
1000	10	9000
1700	140	25000
1600	140	25000
2600	60	12000
400	10	16000

A tooltip for 'Partial Least Squares' states: "Fits linear models based on factors, which are linear combinations of the explanatory variables."



PLS OUTPUT



➔ STEPS TO GET MULTIDIMENSIONAL SCALING (MDS)

STEP 1 :- CLICK ON ANALYSE -> MULTIVARIATE METHODS -> MULTIDIMENSIONAL SCALING(MDS)

STEP 2:- DRAG AND DROP THE POPULATION INTO Y AXIS TO GET THE OUTPUT

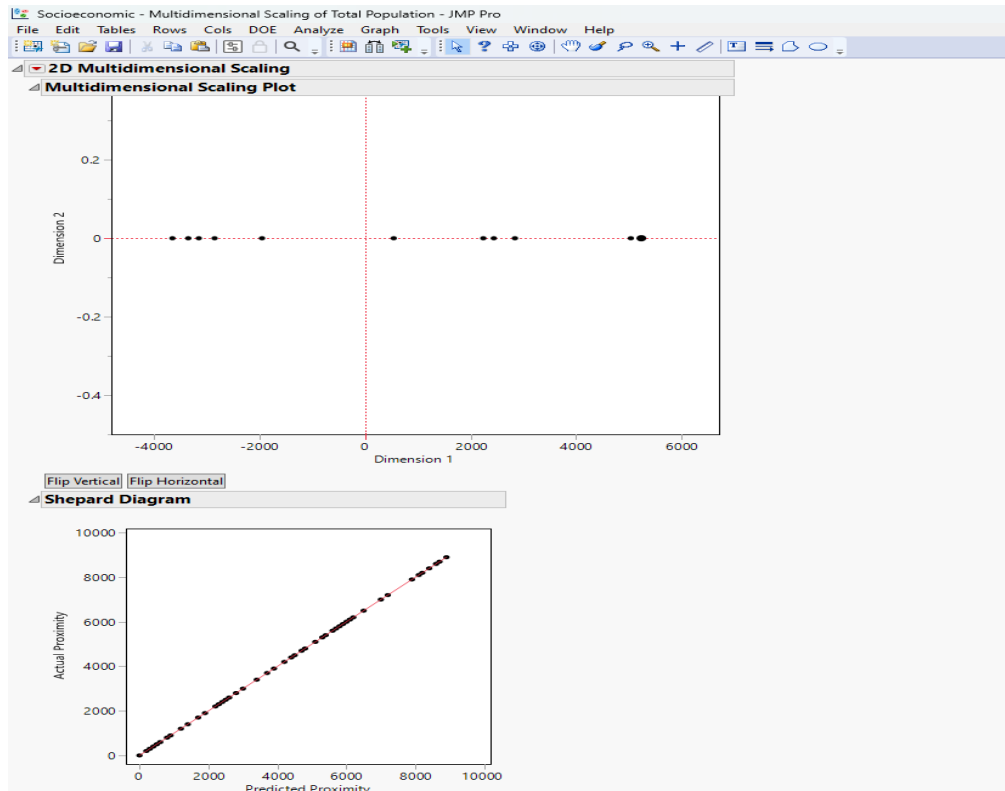
The screenshot shows the JMP Pro interface with the 'Analyze' menu open. The path 'Multivariate Methods (updated)' > 'Multidimensional Scaling' is highlighted. A tooltip for 'Multidimensional Scaling' is visible, stating: 'Creates a visual representation of the pattern of proximities among a set of objects.'

Total employment	Professional Services	Median House Value
2500	270	25000
600	10	10000
1000	10	9000
1700	140	25000
1600	140	25000
2600	60	12000
400	10	16000

This screenshot is identical to the one above, showing the 'Analyze' menu path to 'Multidimensional Scaling' and the associated data table. The tooltip for 'Multidimensional Scaling' is also present, stating: 'Creates a visual representation of the pattern of proximities among a set of objects.'

Total employment	Professional Services	Median House Value
2500	270	25000
600	10	10000
1000	10	9000
1700	140	25000
1600	140	25000
2600	60	12000
400	10	16000

OUTPUT FOR MDS

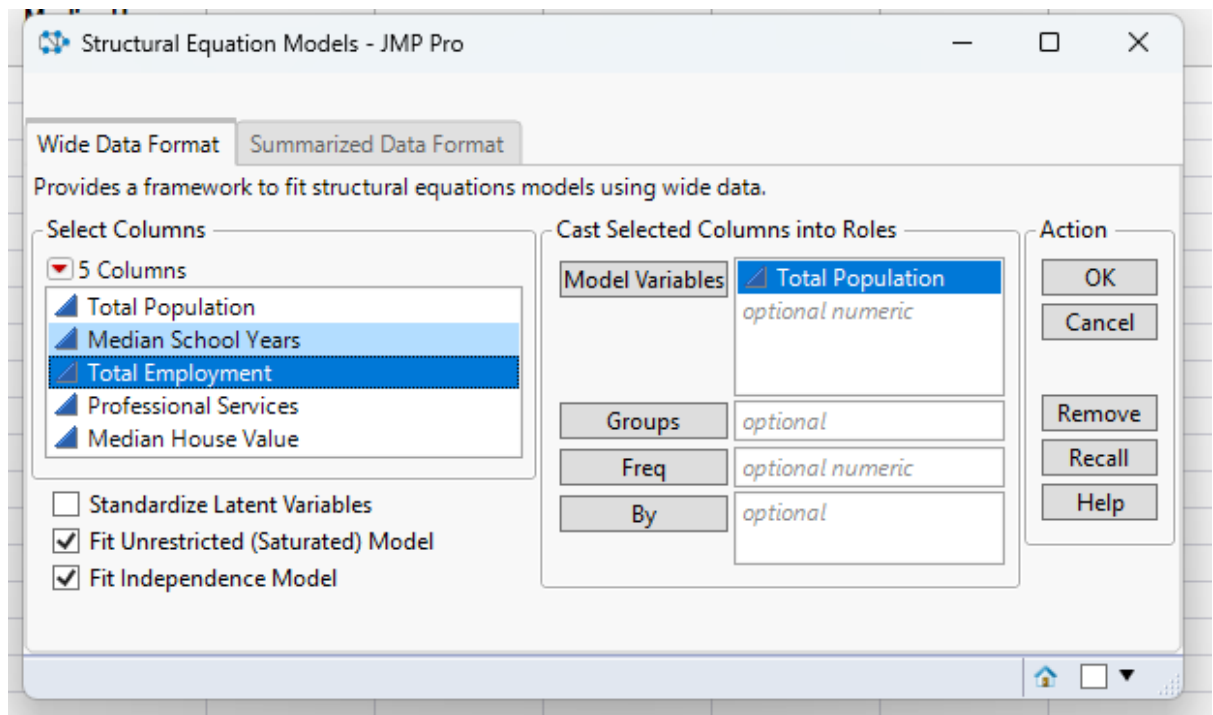


→ STEPS TO FIND STRUCTURAL EQUATION MODELS (SEM)

STEP 1:- SELECT ANALYSE ->MULTIVARIATE METHODS ->STRUCTURAL EQUATION MODELS (SEM)

STEP2 :-DRAG AND DROP THE POPULATION FROM THE TABLE INTO Y AXIS TO GET THE OUTPUT

Total employment	Professional Services	Median House Value
2500	270	25000
600	10	10000
1000	10	9000
1700	140	25000
1600	140	25000
2600	60	12000
400	10	16000



OUTPUT FOR STRUCTURAL EQUATION MODELS

Socioeconomic - Structural Equation Models of Total Population - JMP Pro

File Edit Tables Rows Cols DOE Analyze Graph Tools View Window Help

Structural Equation Models

Model Specification

Model Comparison

Model Name	-2 Log Likelihood	Number of Parameters	AICc	AICc Weight	-2 A .6 .8	BIcu	ChiSquare	DF	Prob>ChiSq	CFI	RMSEA	Lower 90%	Upper 90%
1 Unrestricted (Saturated)	228.44779	2	233.78112	0.5000		0.0000	0.0000	0	-	1.0000	0.0000	0.0000	0.0000
2 ** Independence	-	2	-	-		-	-	0	-	-	-	-	-
3 * Model 1	228.44779	2	233.78112	0.5000		0.0000	0.0000	0	-	-	0.0000	0.0000	0.0000

* Convergence FAILURE
Compare Selected Models Clear Selection

Structural Equation Model: Model 1

Summary of Fit

Maximum Likelihood. Failed: Hessian Not Positive Definite.
Standard errors might not be accurate due to an ill-conditioned Hessian matrix. The model might not be identified.

Sample Size	12
Rows with Missing	0
-2 Log Likelihood	228.44779
Iterations	0
Number of Parameters	2
AICc	233.78112
BIcu	0
ChiSquare	0
DF	0
Prob>ChiSq	-
CFI	-
RMSEA	0
Lower 90%	0
Upper 90%	0

Parameter Estimates

Means/Intercepts	Estimate	Std Error	Wald Z	Prob> Z
Constant → Total Population	6241.6667	950.76419	6.5648946	<.0001*

Variances	Estimate	Std Error	Wald Z	Prob> Z
Total Population → Total Population	10847431	0	-	-

Path Diagram

100%
Total Population
10847430.556