Assignment #7: Factor Analysis (0 points)

Data: The data for this assignment will be the correlation matrix input from the Stoetzel article in the course reserves.

'A Factor Analysis of Liquor Preference' by Stoetzel (Journal of Marketing Research)

Assignment Instructions:

Use the sample code from the Linden example provided in the Lecture Video Index to manually input the correlation matrix and estimate Stoetzel's factor model. Note that the Linden sample code has all of the SAS code needed to estimate these factor models.

Here is Stoetzel's correlation matrix.

1.000	0.210	0.370	-0.32	0.000	-0.31	-0.26	0.090	-0.38
0.210	1.000	0.090	-0.29	0.120	-0.30	-0.14	0.010	-0.39
0.370	0.090	1.000	-0.31	-0.04	-0.30	-0.11	0.120	-0.39
-0.32	-0.29	-0.31	1.00	-0.16	0.25	-0.13	-0.14	0.900
0.00	0.120	-0.04	-0.16	1.000	-0.20	-0.03	-0.08	-0.38
-0.31	-0.30	-0.30	0.25	-0.20	1.000	-0.24	-0.16	0.180
-0.26	-0.14	-0.11	-0.13	-0.03	-0.24	1.000	-0.20	0.040
0.090	0.010	0.120	-0.14	-0.08	-0.16	-0.20	1.000	-0.24
-0.38	-0.39	-0.39	0.900	-0.38	0.180	0.040	-0.24	1.000

(1) Estimate the factor model using principal factor analysis. Did you get the same results as Stoetzel?

   a. Are the results the same numerically, i.e. did you get the same factor loadings as Stoetzel? Do you expect to be able to reproduce a factor analysis and get the same factor loadings?

   b. Are the results the same qualitatively, i.e. did you get the same factor interpretations as Stoetzel? Do you expect to be able to reproduce a factor analysis and get the same factor interpretation?

(2) Repeat the exercise outlined in (1) but use principal factor analysis with a VARIMAX rotation.

(3) Repeat the exercise outlined in (1) but use maximum likelihood estimation.

(4) Repeat the exercise outlined in (1) but use maximum likelihood estimation with a VARIMAX rotation.

Assignment Document:

All assignment reports should conform to the standards and style of the report template provided to you. Results should be presented and discussed in an organized manner with the discussion in close proximity of the results. The report should not contain unnecessary results or information. The document should be submitted in pdf format. Name your file Assignment7_LastName.pdf.