DA6823

Exercise #3

Name: Moneeb Abu-Esba

This third exercise is to give you practice at creating and extracting a single construct (abstract constructs) from multiple variables.

This means you are going to repeat the steps for the five point scales for the eight questions that form the two abstract constructs in the principal components analysis. **That is, when you are done and ready to do the PCA, there should be eight happy 5 point scale questions that represent the two abstract constructs you have chosen.**

You can copy and edit code from exercise 2 that created the variables for the market segmentation project and just take the new code for the eight (8) five point questions for the PCA and tack it onto the end of your exercise #2 code.

1. Run your PCA analysis on the eight or more variables that make up the abstract construct variables that you named in exercise #1 and have coded here in this exercise. Then answer the following questions:
   2. Decide which extraction technique to use and tell me why
      PCA because it focuses on all of the variances of each variable.
   3. Decide which rotation method you are going to use and tell me why
      Varimax so I can see a separation between the clusters.
   4. Run the PCA analysis and answer the additional questions below:

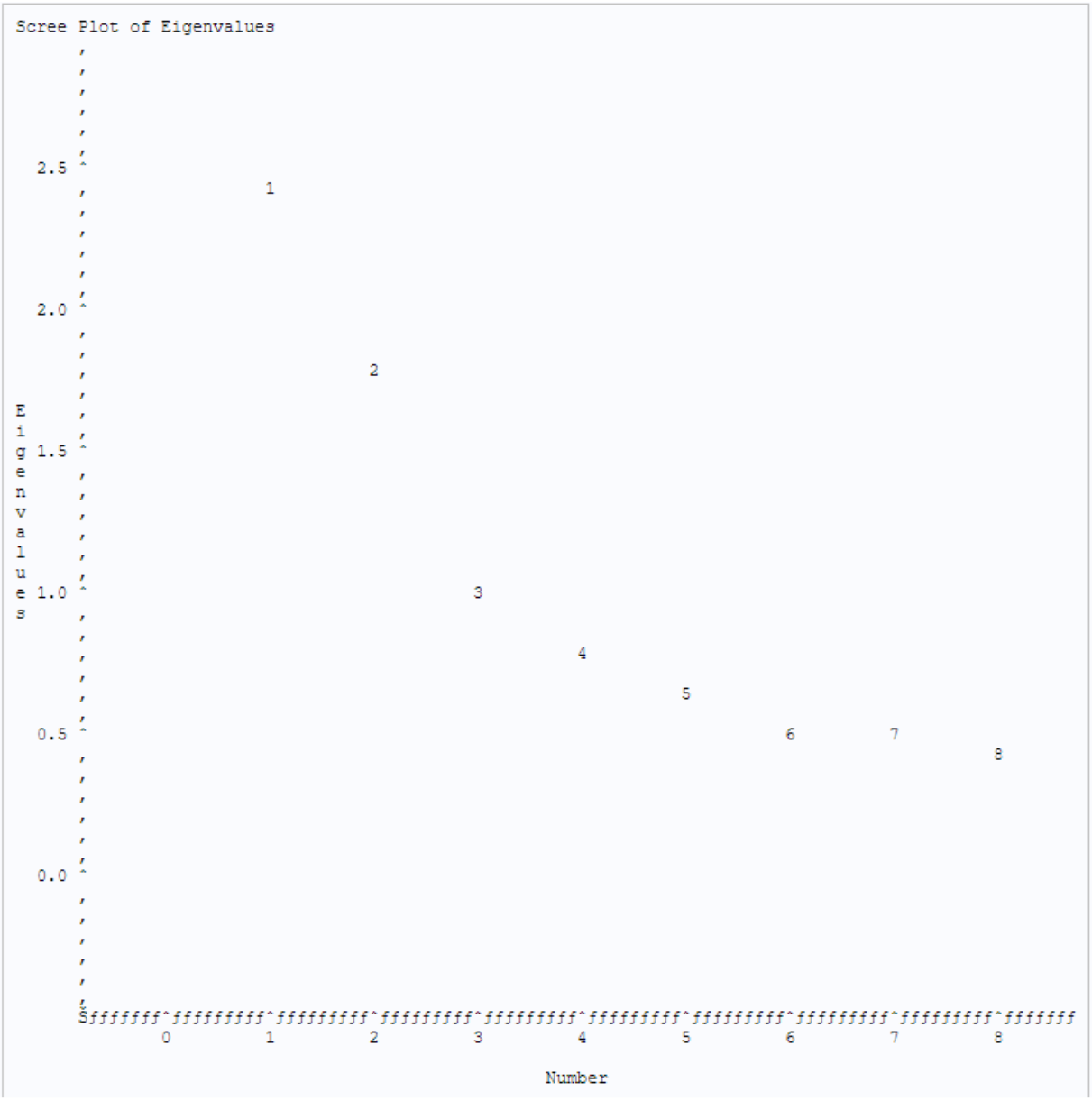
**Eigenvalues of the Correlation Matrix: Total = 8 Average = 1**

| | Eigenvalue | Difference | Proportion | Cumulative |
|---|---|---|---|---|
| 1 | 2.43331271 | 0.63268312 | 0.3042 | 0.3042 |
| 2 | 1.80062959 | 0.82488232 | 0.2251 | 0.5292 |
| 3 | 0.97574727 | 0.22059206 | 0.1220 | 0.6512 |
| 4 | 0.75515521 | 0.14164992 | 0.0944 | 0.7456 |
| 5 | 0.61350528 | 0.11589206 | 0.0767 | 0.8223 |
| 6 | 0.49761322 | 0.01562768 | 0.0622 | 0.8845 |
| 7 | 0.48198554 | 0.03993436 | 0.0602 | 0.9447 |
| 8 | 0.44205119 | | 0.0553 | 1.0000 |

   a. What is the criteria for determining that a factor was extracted?
      Eigen values above 1.0

      = to or above 1.0

b. How many factors were extracted – hopefully just two factors? Was it the number you expected? If not, you may have to replace a variable or two that was not working and may have caused the excess number of factors and rerun it. **You should end up with only two extracted factors that make the Kaiser eigenvalue cutoff point**. Cut and paste the eigenvalue table.



c. What percentage of the variance was explained by the extracted factors?

52.9%

d. Make a not so pretty scree plot in SAS. How do you interpret it? Cut and paste it.

The 2 factors are above an Eigen value of 1.0

e. Find the correct Factor Pattern matrix and cut it and paste it. Circle or highlight which variables go with which factor. **Don't grab the wrong Factor Pattern matrix!!!**

| Rotated Factor Pattern | | |
|---|---|---|
| | Factor1 | Factor2 |
| WMC | 0.00310 | |
| PINFO | 0.05659 | |
| RISKY | -0.00133 | |
| Priv | 0.09391 | |
| Net_Free | | 0.08274 |
| Net_Travel | | 0.15440 |
| Net_Work | | 0.02691 |
| Comp_Fun | | 0.00749 |

but priv has low loadings and also loadings that

f. Interpret the two factors extracted – that is, what does each of the two factors represent.

Factor 1: How has the Internet Changed your life?

Factor 2: How do you feel about companies using your personal information?

g. Turn in your report and the code that created the output.