Assignment 11 (Week - 11)

Due on 2016-04-06, 19:29 IST

Submitted assignment

1) To determine which variables relate to which factors, a researcher would use: ***1 point***

- (•) Factor loadings
- ( ) Communalities
- ( ) Eigenvalues
- ( ) Beta coefficients

2) Which of the followings can be used to determine how many factors to take from a factor analysis: ***1 point***

- ( ) Eigenvalues
- ( ) Scree plots
- ( ) % of variance
- (•) All of the above

3) Which of the following methods should be used when factors in the population are likely to be strongly correlated? ***1 point***

- ( ) Orthogonal rotation
- ( ) The varimax procedure
- (•) Oblique rotation

- None of the above

4) A principal components analysis was run using correlation matrix, R, and the following eigenvalue results were obtained: 2.731, 2.218, .442, .341, .183, .085. How many factors would you retain ***1 point***

- 1
- 2
- 4
- 6

5) Factor analysis may not be appropriate in all of the following situations except: ***1 point***

- a small value for Barlett's test of sphericity is found
- small values of the KMO statistic are found
- the variables are not correlated
- the variables are correlated

6) A factor loading of 0.80 means that: ***1 point***

- The variable is moderately related with the factor
- The variable correlates well with the factor, though not perfectly
- The variable is poorly related with the factor
- There is no relationship between that variable and the factor

7) What technique is used to provide a simpler and interpretable picture of the relationships between factors and variables? ***1 point***

- Rotation
- Regression
- Resistance
- Principal components
- Residual analysis

8) In an exploratory study involving ten variables (X1 to X10), two factors are extracted using sample correlation matrix. The factor ***4 points***

loadings are given below.

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
Factor 1	0.2	0.3	0.4	0.5	0.3	0.2	0.4	0.4	0.5	0.2
Factor 2	0.2	0.3	0.3	0.4	0.3	0.2	0.3	0.7	0.8	0.9

Choose the correct answer of the variability explained by Factor 1 and Factor 2, respectively.

- (11.8%, 15.4%)
- (10.8%, 19.9%)
- (12.8%, 25.4%)
- None of these

9) Choose the correct communality and specificity for the variable X9, based on the data given in table in question 8 ***2 points***

- (0.79, 0.21)
- (0.95, 0.05)
- (0.89, 0.11)
- None of these

10) Choose the correct option in factor rotation (clock-wise) model from below: ***2 points***

- $$\left.\begin{aligned} Z_1 &= x_1 cos\theta + x_2 sin\theta \\ Z_2 &= -x_1 sin\theta + x_2 cos\theta \end{aligned}\right|$$
- $$\left.\begin{aligned} Z_1 &= x_1 sin\theta - x_2 cos\theta \\ Z_2 &= -x_1 sin\theta + x_2 cos\theta \end{aligned}\right|$$
- $$\left.\begin{aligned} Z_1 &= x_1 cos\theta + x_2 sin\theta \\ Z_2 &= -x_1 sin\theta - x_2 cos\theta \end{aligned}\right|$$
- None of these.