



Course Homepage

Quiz

Review Test Submission: MCA

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User	Richa Singh
Course	(MERGED) ACN 7310.002 - HCS 7310.002 - F18
Test	MCA
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Time Elapsed	10 hours, 34 minutes
Results Displayed	All Answers, Submitted Answers

Question 1

10 out of 10 points

A data table to be analyzed by MCA

Selected Answers: a. is geometrically represented as a hypercube
 b. is geometrically represented as a hypnocube
 c. is arranged with observations on the rows and variables on the columns
 d. is geometrically represented as a simplex
 f. can include only 0s and 1s

Answers: a. is geometrically represented as a hypnotoad
 b. is geometrically represented as a hypnocube
 c. is arranged with observations on the rows and variables on the columns
 d. is geometrically represented as a simplex
 e. can include only integers
 f. can include only 0s and 1s
 g. is geometrically represented as a hypnotoad

Question 2

0 out of 10 points

What is a Burt matrix?

Selected Answers: $\mathbf{X}^T \mathbf{X}$, when \mathbf{X} is an indicator matrix

$\mathbf{X}^T \mathbf{X}$, when \mathbf{X} has observation on the rows, and levels of variables on the columns
 It can only have 1s and 0s
 It is a diagonal matrix
 It includes margins of each level of each variable on diagonal

Answers: $\mathbf{X}^T \mathbf{X}$, when \mathbf{X} is an indicator matrix

$\mathbf{X}^T\mathbf{X}$, when \mathbf{X} is a contingency table

$\mathbf{X}^T\mathbf{X}$, when \mathbf{X} has observation on the rows, and levels of variables on the columns

It can only have 1s and 0s

It is a contingency table

It is a diagonal matrix

It includes margins of each level of each variable on diagonal

It includes margins of each level of each variable off diagonal

A close friend of the Ernie matrix

Question 3

2.22222 out of 10 points

Multiple correspondence analysis (MCA) extends **[a]** and **[b]** to analyze the pattern of relationship of multiple categorical variables. The data table that goes into MCA is a(n) **[c]** matrix. In that data table, each **[d]** of each variable is represented as its own column, and coded as a binary variable. This is also called **[e]** coding. MCA and CA computed **[f]** and **[g]** in the same way, and so both rely on the **[h]** distance. MCA is similar to CA in many ways, except that, in MCA, the eigenvalues are **[i]**-estimated.

Specified Answer for: a Correspondence Analysis

Specified Answer for: b Principal Component Analysis

Specified Answer for: c indicator

Specified Answer for: d levels

Specified Answer for: e one-hot

Specified Answer for: f row factor scores

Specified Answer for: g column factor scores

Specified Answer for: h chi-squared

Specified Answer for: i under

Question 4

7.5 out of 10 points

To conduct MCA on \mathbf{X} (with $\mathbf{X} = \mathbf{Z} - \mathbf{rc}^T$) is equivalent to

Selected Answers: a. PCA(\mathbf{MXW}), with $\mathbf{M} = \mathbf{D}_r^{-1/2}$ and $\mathbf{W} = \mathbf{D}_c^{-1/2}$

d. GSVD(\mathbf{X} , \mathbf{M} , \mathbf{W}), with $\mathbf{M} = \mathbf{D}_r^{-1/2}$; $\mathbf{W} = \mathbf{D}_c^{-1/2}$

e. SVD(\mathbf{MXW}), with $\mathbf{M} = \mathbf{D}_r^{-1/2}$ and $\mathbf{W} = \mathbf{D}_c^{-1/2}$

Answers: a. PCA(\mathbf{MXW}), with $\mathbf{M} = \mathbf{D}_r^{-1/2}$ and $\mathbf{W} = \mathbf{D}_c^{-1/2}$

b. PCA(\mathbf{X})

c. SVD(\mathbf{X})

d. GSVD(\mathbf{X} , \mathbf{M} , \mathbf{W}), with $\mathbf{M} = \mathbf{D}_r^{-1/2}$; $\mathbf{W} = \mathbf{D}_c^{-1/2}$

e. SVD(\mathbf{MXW}), with $\mathbf{M} = \mathbf{D}_r^{-1/2}$ and $\mathbf{W} = \mathbf{D}_c^{-1/2}$

f. CA(\mathbf{X})

Question 5

10 out of 10 points

MCA can be used to analyze

Selected Answers: b. Nominal variables

Answers:

- c. Ordinal variables (after binning them)
- e. Quantitative variables (after binning them)
- a. Quantitative variables
- b. Nominal variables
- c. Ordinal variables (after binning them)
- d. Abominable variables
- e. Quantitative variables (after binning them)

Saturday, October 6, 2018 1:11:24 PM CDT

← OK