

Practice 13.5

2-mode Structural Equivalence

We run Tools|Similarities & Distances routine choosing matches on first the rows and then the columns of the Davis dataset. This will give matrices 13.6 and 13.7.

Similarities/Dissimilarities

Files

Input dataset: Davis

...

Output dataset: Davis-Mat-R

...

✓ OK

✗ Cancel

?

Help

Similarity measures:

☐ Pearson correlation

☐ Covariance

☐ Cross-Products

☐ Avg Cross-Products

☒ Matches

☐ Jaccard

☐ Valued Jaccard

☐ Identity Coefficient

☐ Cosine / Tucker's

☐ Cohen's Kappa

☐ Yule's Q

Dissimilarity measures:

☐ Euclidean distance

☐ Manhattan distance

☐ Avg absolute difference

☐ Normed SSD

☐ Proportion of non-matches

☐ Jaccard distance

☐ Hamming distance

☐ Sum of squared differences

Mode:

☒ Rows

☐ Columns

☐ Matrices

For square matrices only:

☐ Diagonal values are valid

Similarities/Dissimilarities

Files

Input dataset: Davis

Output dataset: Davis-Mat-C

Similarity measures:

- ☐ Pearson correlation
- ☐ Covariance
- ☐ Cross-Products
- ☐ Avg Cross-Products
- ☒ Matches
- ☐ Jaccard
- ☐ Valued Jaccard
- ☐ Identity Coefficient
- ☐ Cosine / Tucker's
- ☐ Cohen's Kappa
- ☐ Yule's Q

Dissimilarity measures:

- ☐ Euclidean distance
- ☐ Manhattan distance
- ☐ Avg absolute difference
- ☐ Normed SSD
- ☐ Proportion of non-matches
- ☐ Jaccard distance
- ☐ Hamming distance
- ☐ Sum of squared differences

Mode:

- ☐ Rows
- ☒ Columns
- ☐ Matrices

For square matrices only:

☐ Diagonal values are valid

OK

Cancel

Help

The two output datasets Davis-Mat-R and Davis=Mat-C are then submitted to the weighted average link hierarchical clustering as follows. Note we name the outputs PartWomen and PartEvents

Johnson's Hierarchical Clustering

Data

Input dataset: davis-Mat-R

Similarities or Dissimilarities: Similarities

Output Partition Matrix: PartWomen

Output Ultrametric Matrix (if desired): None

Parameters

Method: WTD_AVERAGE (average between all pairs)

Graphical dendrogram: Dendrogram

Textual dendrogram: Landscape

Maximum label length: 15

Compute ultrametric proximity matrix: NO

OK

Cancel

Help

Johnson's Hierarchical Clustering

Data

Input dataset: davis-Mat-C ...

Similarities or Dissimilarities: Similarities

Output Partition Matrix: PartEvents ...

Output Ultrametric Matrix (if desired): None ...

Parameters

Method: WTD_AVERAGE (average between all pairs)

Graphical dendrogram: Dendrogram

Textual dendrogram: Landscape

Maximum label length: 15

Compute ultrametric proximity matrix: NO

OK Cancel Help

Finally as in previous examples we submit to Transform|Aggregate (includes CSS)|Block aggregate by partitions selecting column 10 for the women and column 9 for the events as shown below

Block - Aggregate matrix by partition

Files

Input dataset:
Davis

Dataset containing Row Partition (which defines set of nodes):
PartWomen 10-0.6786 C I Value Labels

Dataset containing Column Partition (defining groups of nodes):
PartEvents 9-0.5556 C I Value Labels

Output dataset:
Davis-blk

Options

Utilize diagonal (reflexive ties) ☐

Match attributes by ...
☐ Position
☒ Row/Column label

Method
☒ Average ☐ Minimum
☐ Count > 0 ☐ Std Deviation
☐ Maximum ☐ Sum

OK
Cancel
Help

The output will be the partitioned matrix shown in Figure 13.7