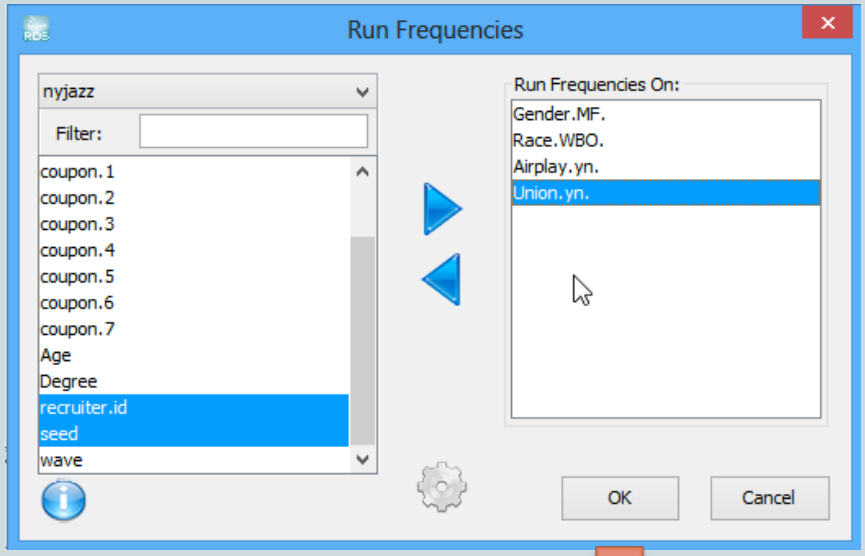
Exploratory Data Analysis

THE BREAD AND BUTTER OF STATISTICS

Getting to Know your Variables

- Continuous Variables
  - Look at descriptive statistics (Sample > Descriptives)
  - Plot histograms (Plots > Quick > Histogram)
- Categorical Variables
  - Look at Frequencies (Sample > Frequencies)
  - Make bar charts (Plots > Quick > bar)
- Relationships
  - Crosstabs (Sample > Contingency Tables)
  - Descriptives with strata (Sample Descriptives)

Getting to Know your Categorical Variables



Console View | Element View

Frequencies

Frequencies (Gender.MF.)

	Value	# of Cases	%	Cumulative %
1	1	191	73.70	73.70
2	2	68	26.30	100.00

Case Summary (Gender.MF.)

	Valid	Missing	Total	% Missing
1	259.00	5.00	264.00	1.90

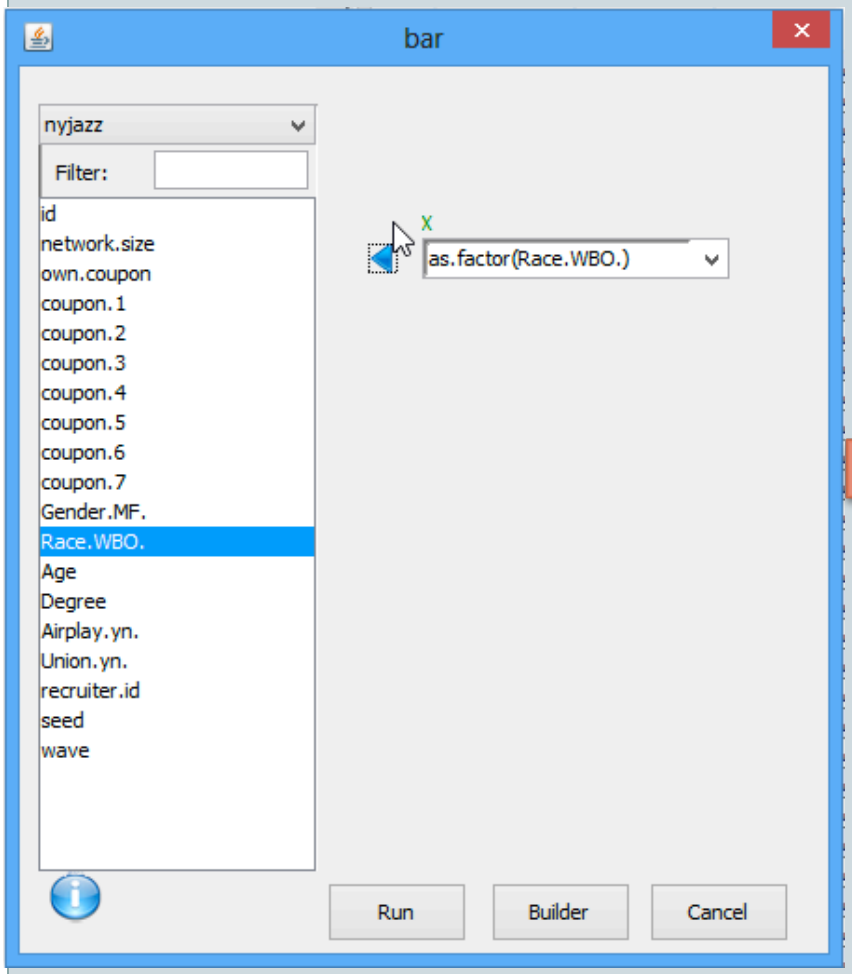
Frequencies (Race.WBO.)

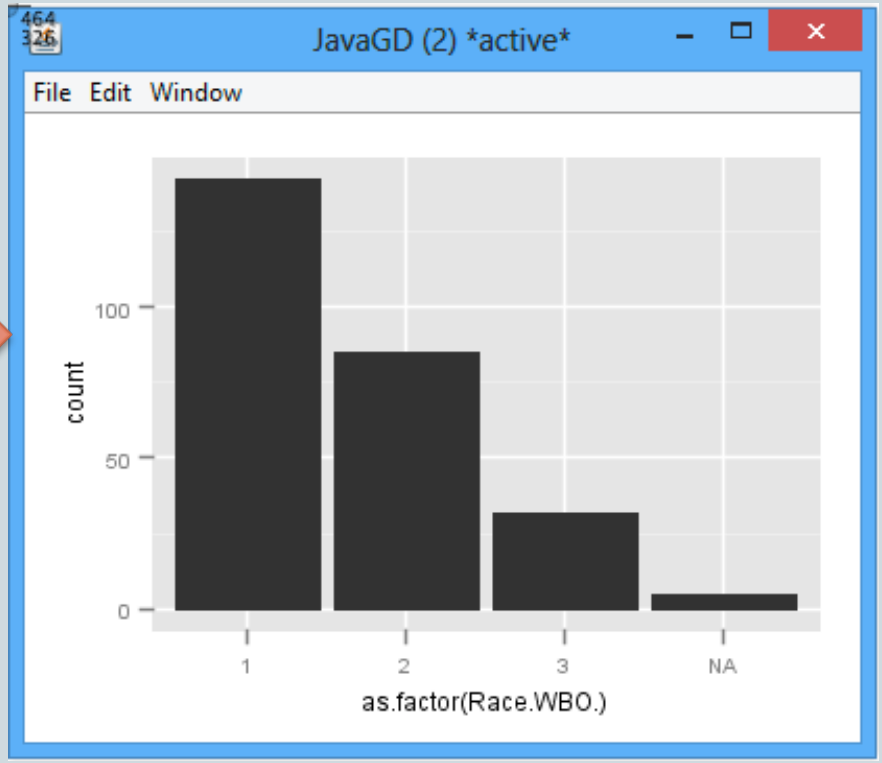
	Value	# of Cases	%	Cumulative %
1	1	142	54.80	54.80
2	2	85	32.80	87.60
3	3	32	12.40	100.00

Case Summary (Race.WBO.)

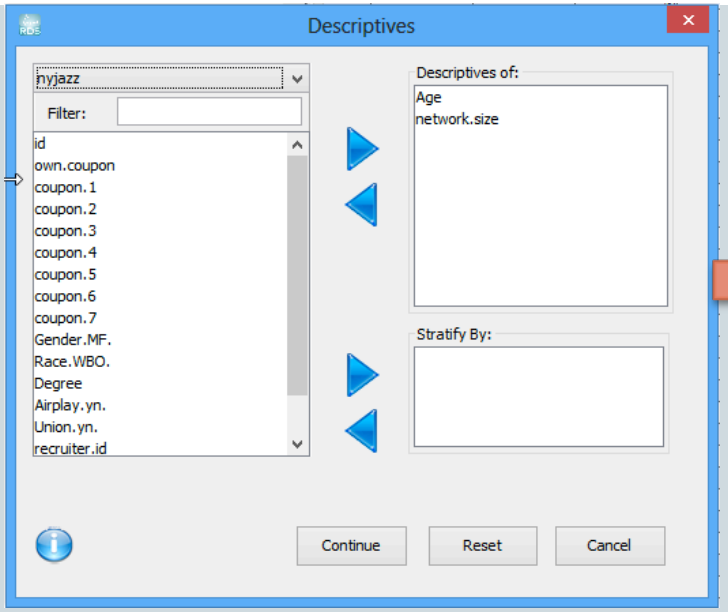
	Valid	Missing	Total	% Missing
1	259.00	5.00	264.00	1.90

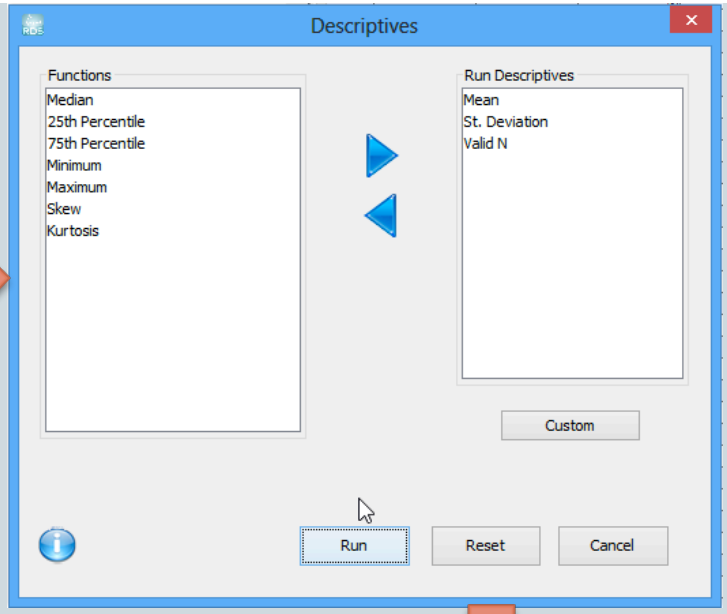
Getting to Know your Categorical Variables





Getting to Know your Continuous Variables

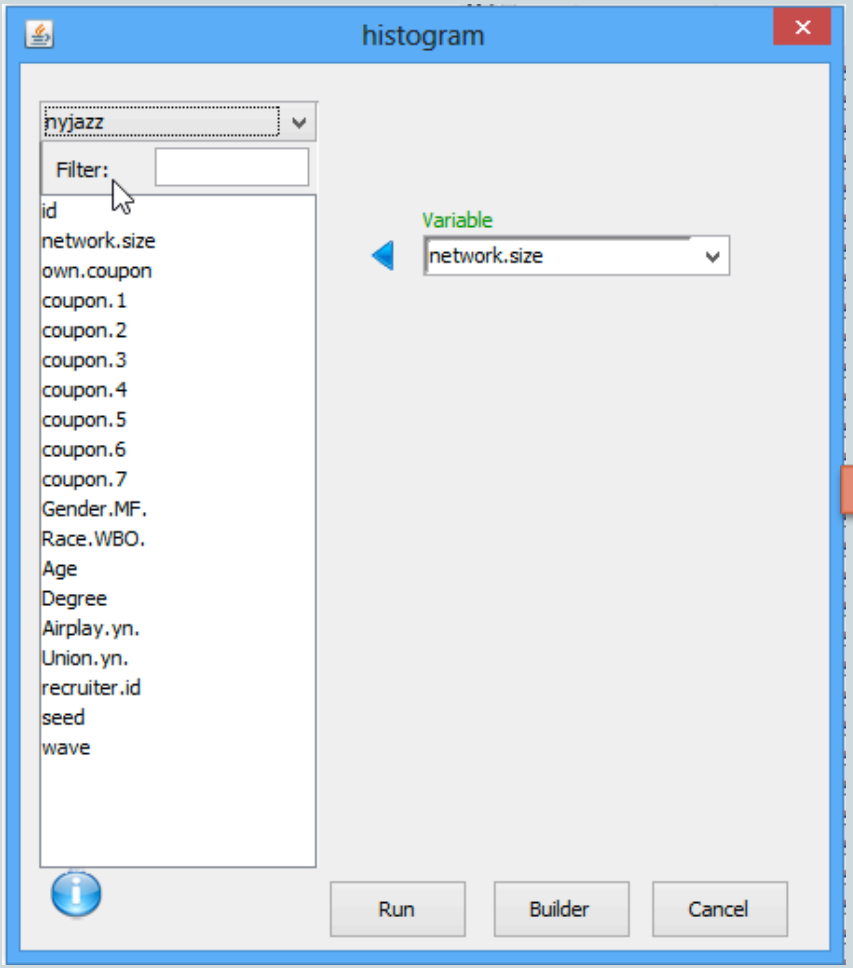


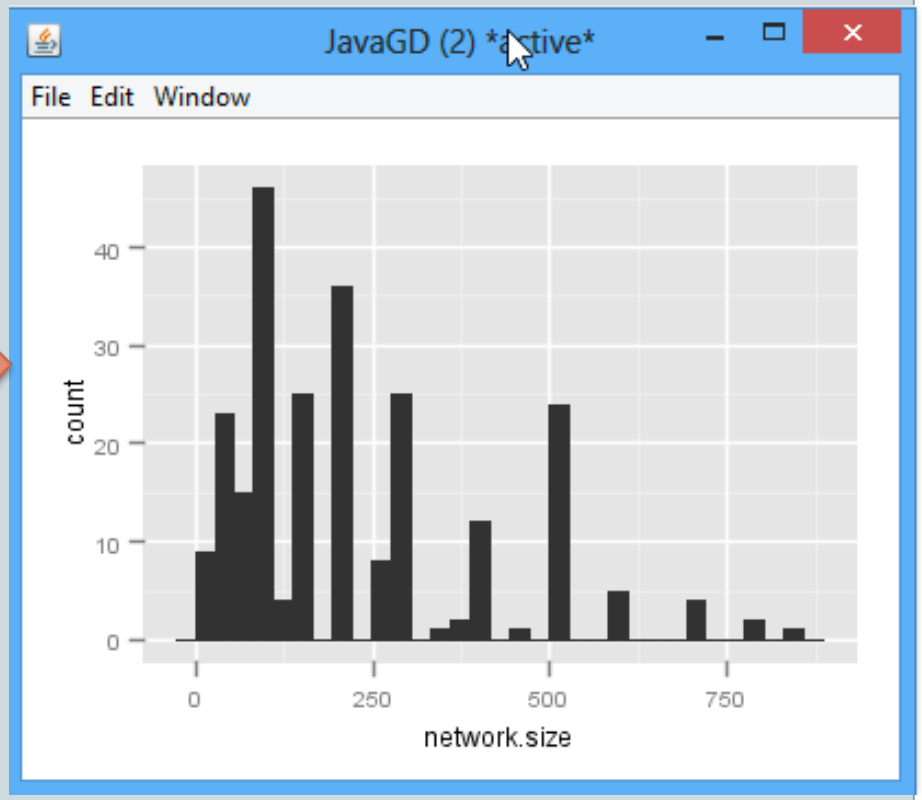


Descriptive Statistics

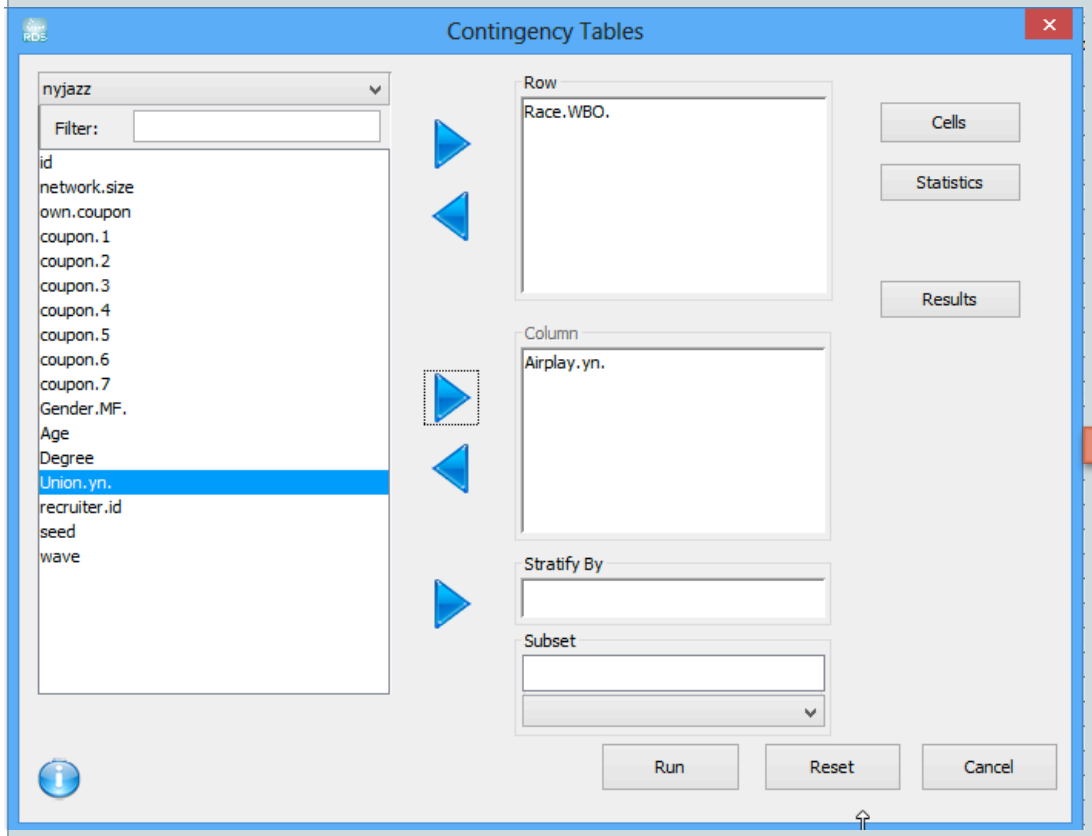
	Mean	*St. Deviation*	*Valid N*
Age	46.46	13.20	263
network.size	223.78	176.17	243

Getting to Know your Continuous Variables





Describing relationships: Crosstabs



Console View | Element View

Contingency Tables

Race.WBO. by Airplay.yn. across levels of

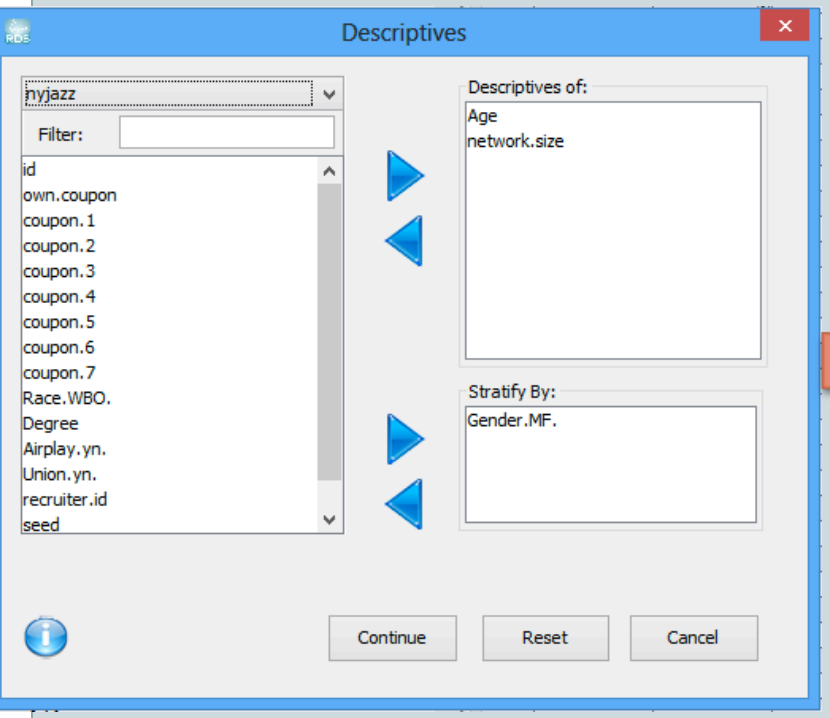
Race.WBO.		*Airplay.yn. 1*	*2*	*Row Total*
1	Count	109	27	136
	Row %	80.15%	19.85%	54.84%
	Column %	53.43%	61.36%	
2	Count	69	11	80
	Row %	86.25%	13.75%	32.26%
	Column %	33.82%	25.00%	
3	Count	26	6	32
	Row %	81.25%	18.75%	12.90%
	Column %	12.75%	13.64%	
Column Total		204	44	**248**
Column %		82.26%	17.74%	

Contingency Table Tests

Tests for Race.WBO. by Airplay.yn. across levels of

	statistic	*df*	*asymptotic p-value*
Chi Squared	1.31	2	0.519

Describing relationships: Descriptives



Descriptive Statistics

Variable: Age

	Gender.MF.	Mean	St. Deviation	Valid N
1	1	46.12	12.96	191
2	2	47.88	14.16	67

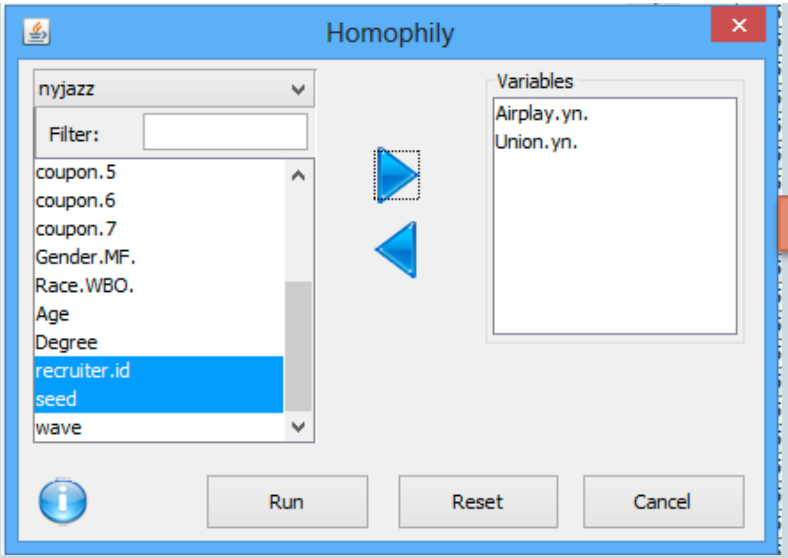
Variable: network.size

	Gender.MF.	Mean	St. Deviation	Valid N
1	1	222.99	171.78	174
2	2	232.23	190.16	64

Recruitment Information

- Homophily (Sample > Sample Homophily)
  - Tendency of like to recruit like.
  - Lots of homophily → High Variance
- Recruitment tree (Plots> Plot Recruitment Tree)
  - Are the chains long?
  - Do most of the subjects come from the same seed?
  - Visualize homophily.
- Other Diagnostics (Plots> Plot Recruitment Tree)
  - Does network size change over the course of sampling?
  - How many recruits are in each wave?
  - How many recruits originate from each seed?

Homophily

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$Airplay.yn.
Recruitment Homophily for Airplay.yn.

Homophily = 1.019792

                          Airplay.yn. of recruit
Airplay.yn. of respondent   1   2
                        1 155  33
                        2  40  11

Number of cases in table: 239
Number of factors: 2
Test for independence of all factors:
        Chisq = 0.4306, df = 1, p-value = 0.5117

$Union.yn.
Recruitment Homophily for Union.yn.

Homophily = 1.209508

                       Union.yn. of recruit
Union.yn. of respondent   1   2
                      1  48  38
                      2  51 113

Number of cases in table: 250
Number of factors: 2
Test for independence of all factors:
        Chisq = 14.409, df = 1, p-value = 0.0001471
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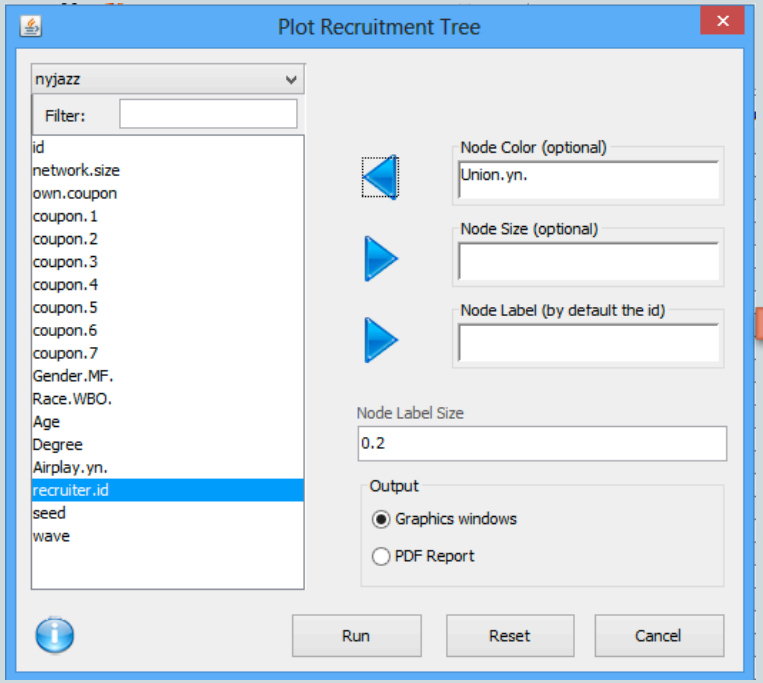
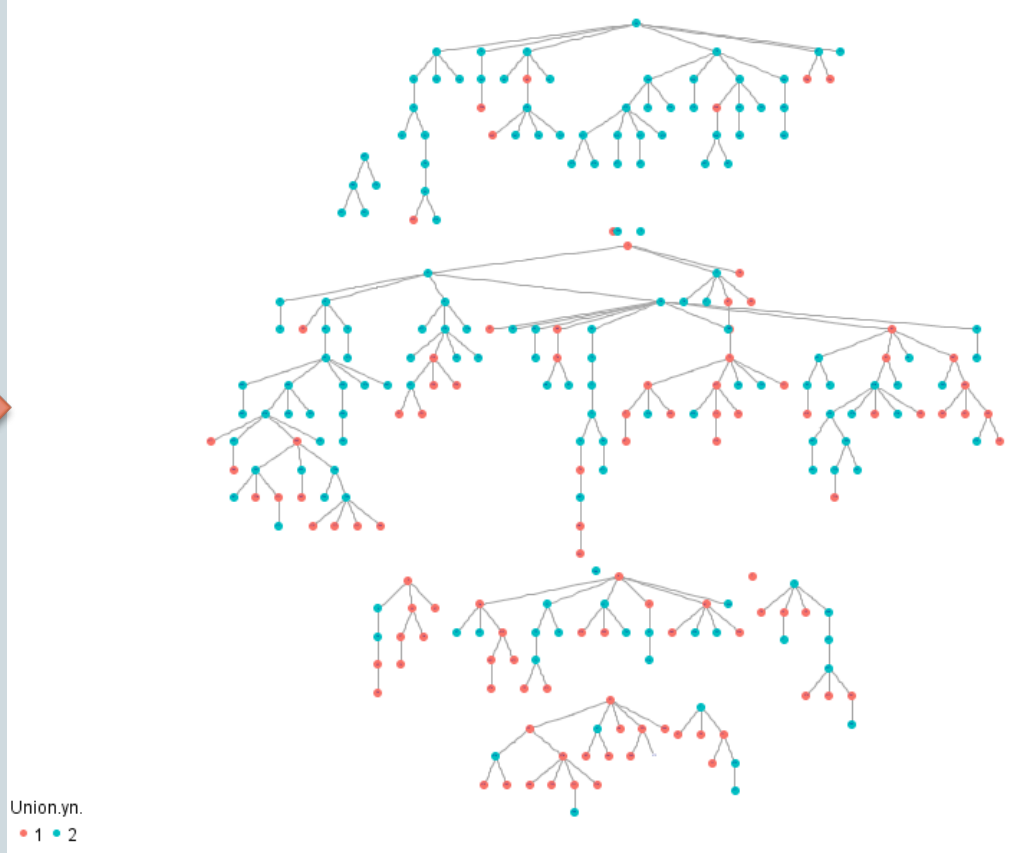
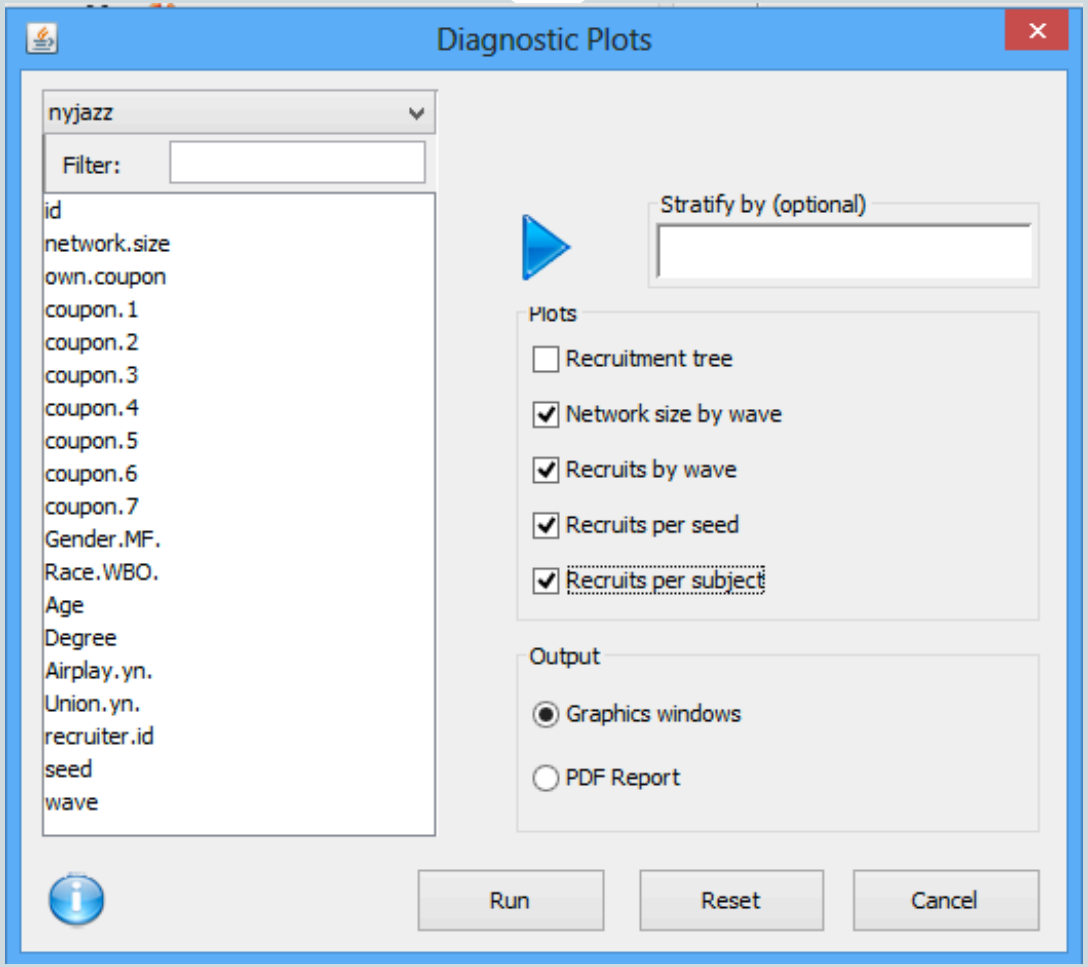
- ✧Homophily near 1 means no homophily
- ✧ p-values assume a simple random sample, so only use them as rough guides.
- ✧Here we see little to no homophily in Airplay.yn. And lots in Union.yn.

Recruitment Tree





Diagnostics



Diagnostics