

Cognitive correlates of mental health in adolescence: A network analysis approach

Sam Parsons<sup>1</sup>, Annabel Songco<sup>1</sup>, Charlotte Booth<sup>1</sup>, & Elaine Fox<sup>1</sup>

<sup>1</sup> University of Oxford

#### Author Note

Add complete departmental affiliations for each author here. Each new line herein must be indented, like this line.

Enter author note here.

Correspondence concerning this article should be addressed to Sam Parsons, Postal address. E-mail: sam.parsons@psy.ox.ac.uk

10

## Abstract

11 This is my abstract

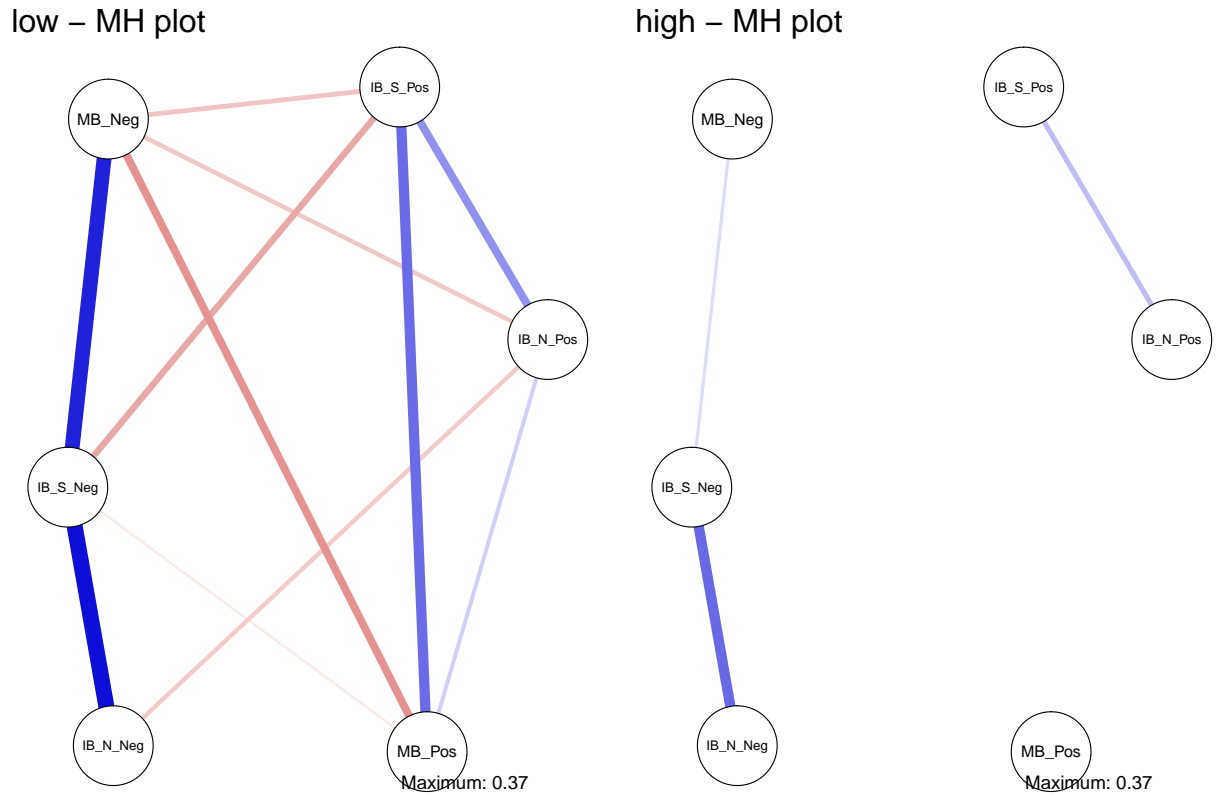
12 *Keywords:* keywords

13 Word count: X

Cognitive correlates of mental health in adolescence: A network analysis approach

### Comparing groups high and low in positive mental health

Figure 1 presents regularised partial correlations amongst interpretation and memory biases.

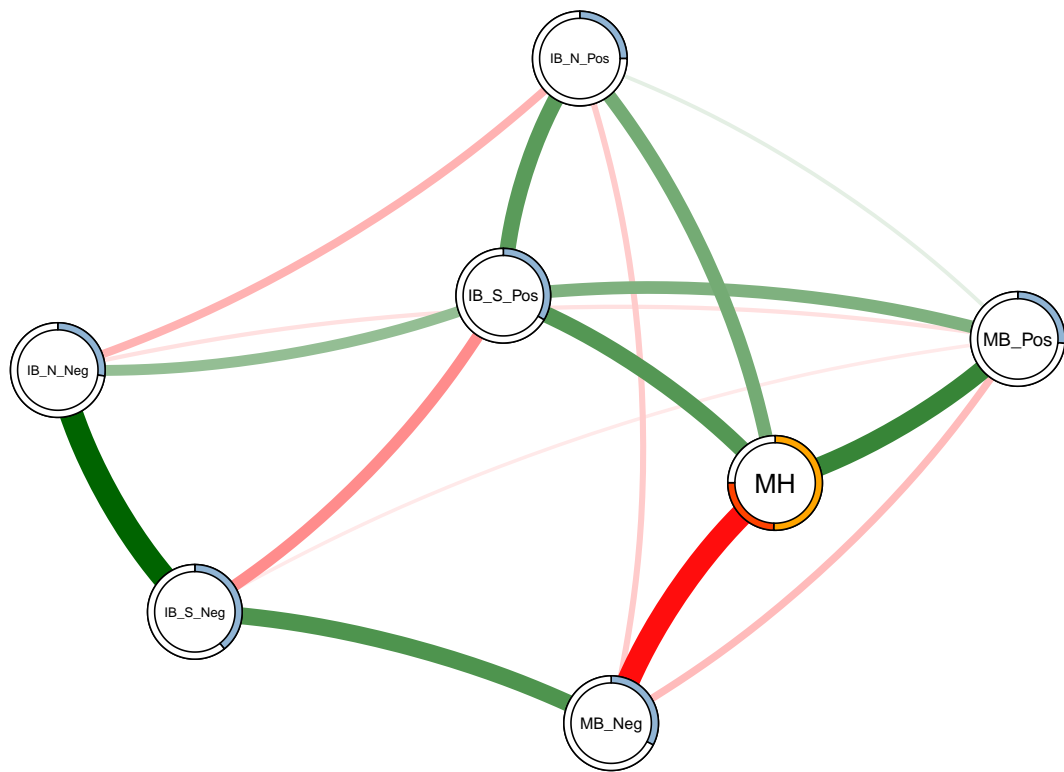


**network comparisons.** We compared the estimated networks using NetworkComparisonTest with 1000 iterations. Global strength in the high MH group (0.37) differed from that in the low MH group (1.70),  $p = .013$ . There was no significant difference between global strength in the low MH group and the mid MH group (0.73),  $p = .345$ ; nor between the mid MH and high MH groups,  $p = .361$ .

## 24 Including Mental Health in the model

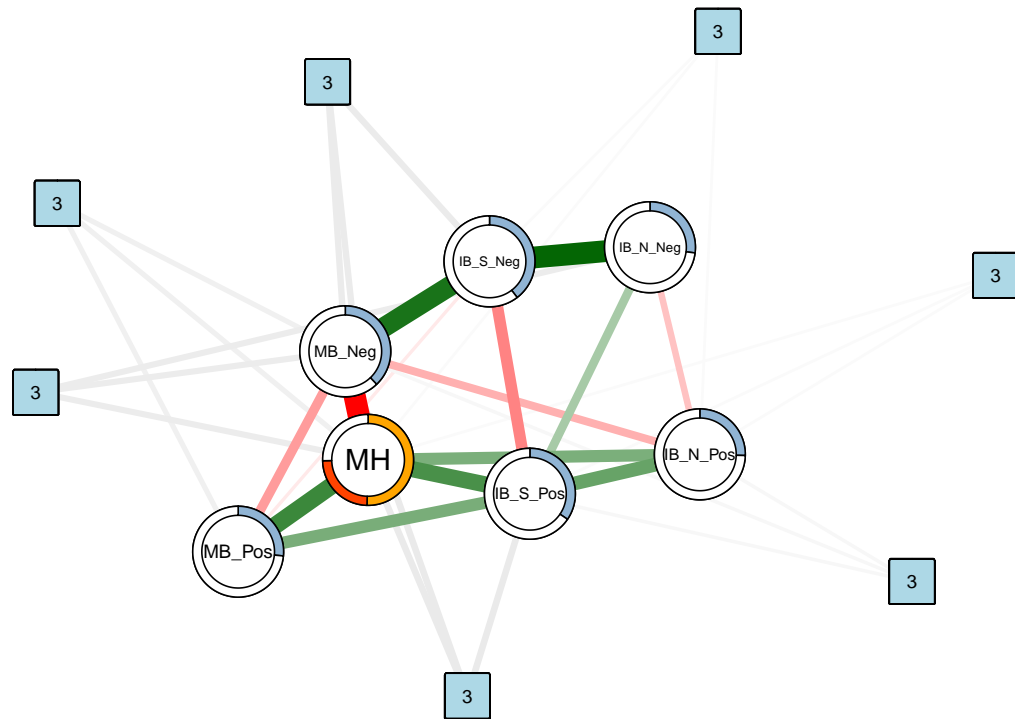
25 We explored the difference in models between high and low groups using the mgm  
 26 package. Figure 2 presents the network including mental health as a categorical variable  
 27 (only for high and low MH groups).

28 Note. the shaded area of the “pie” is the predicability of that node, i.e. the variance  
 29 explained in that variable by the rest of the network. (I also need to include a more detailed  
 30 explanation of why MH is different here as a categorical variable).



we then set mental health to be a moderator of the network

MH as a categorical variable in the model

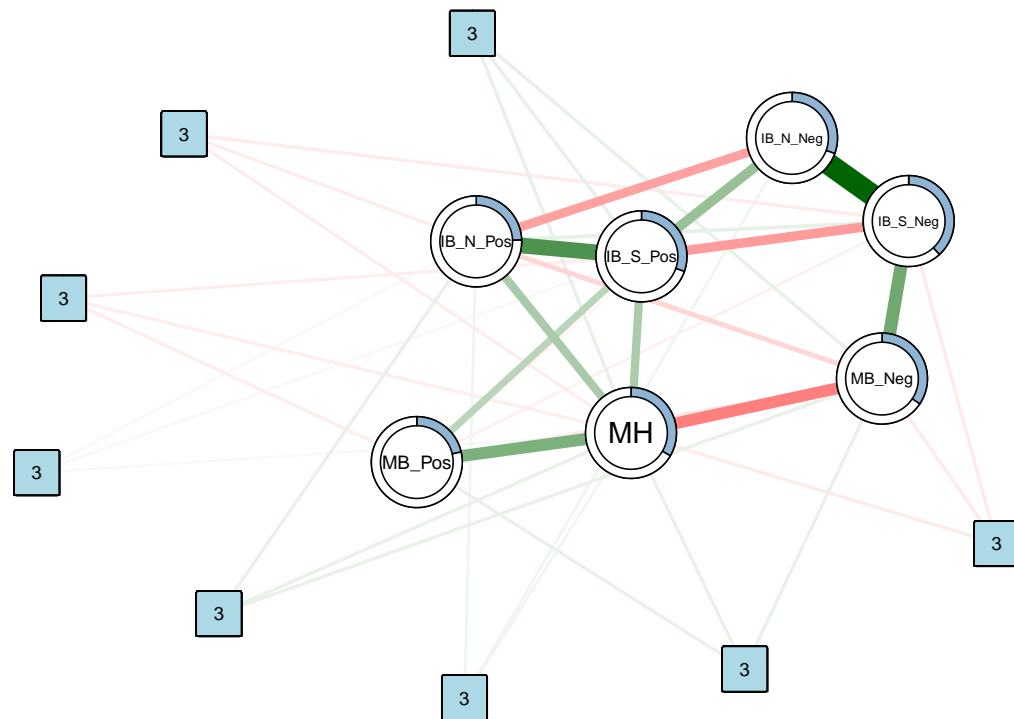


33

The square nodes link to three nodes. First, they each link to MH as the moderating variable. The two other nodes linked to indicate the edge that is moderated by the MH variable, e.g. the relationship between Positive and Negative memory biases.

we followed this by using MH as a linear moderator, and included the full sample

full sample – mental health as a linear moderator

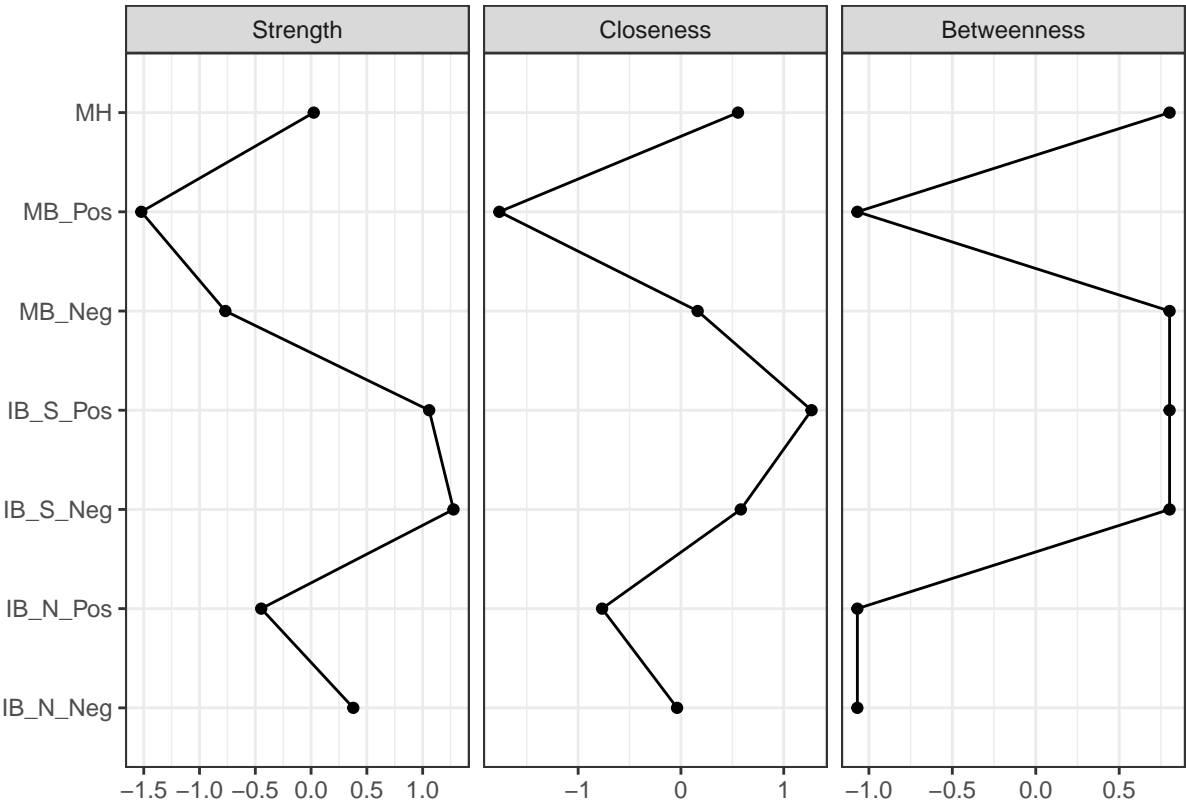


39

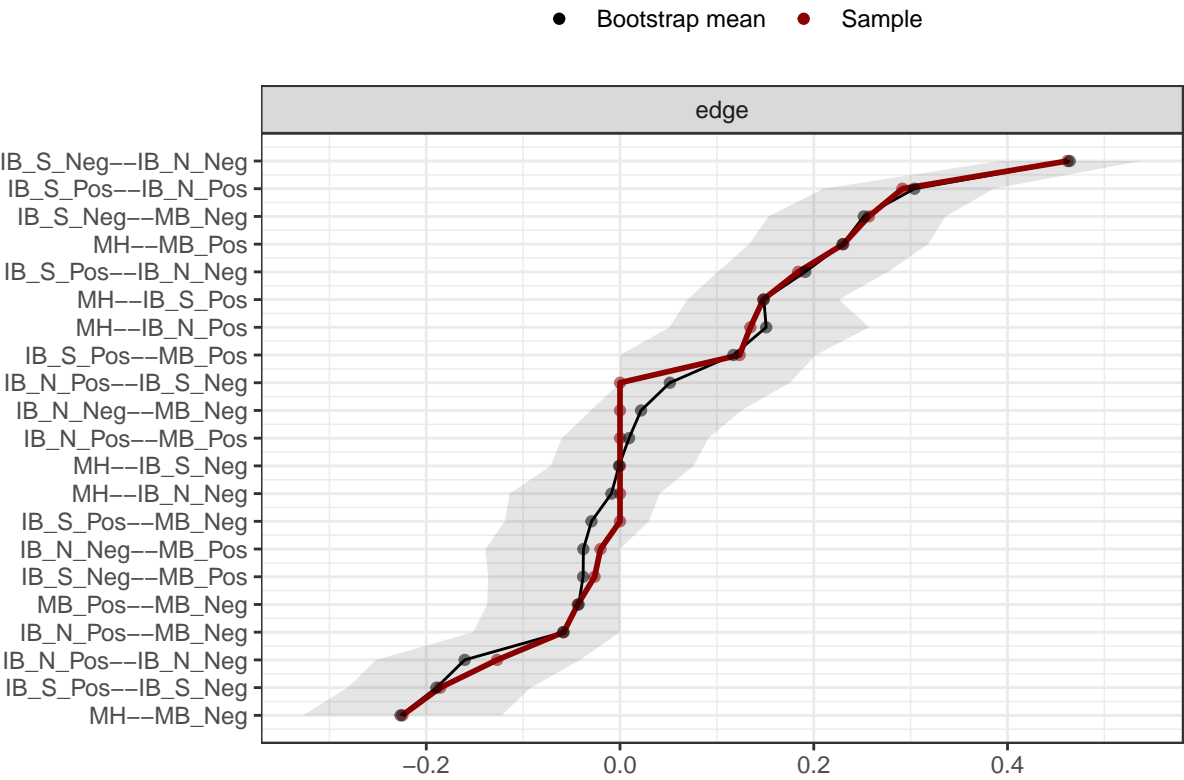
this network shows largely the same pattern as splitting by the high and low group.  
Some of the edges appear to be moderated by mental health.

41

This was followed by examining the stability of the network



The centrality plot provides an indication of how important each variable is to the network.

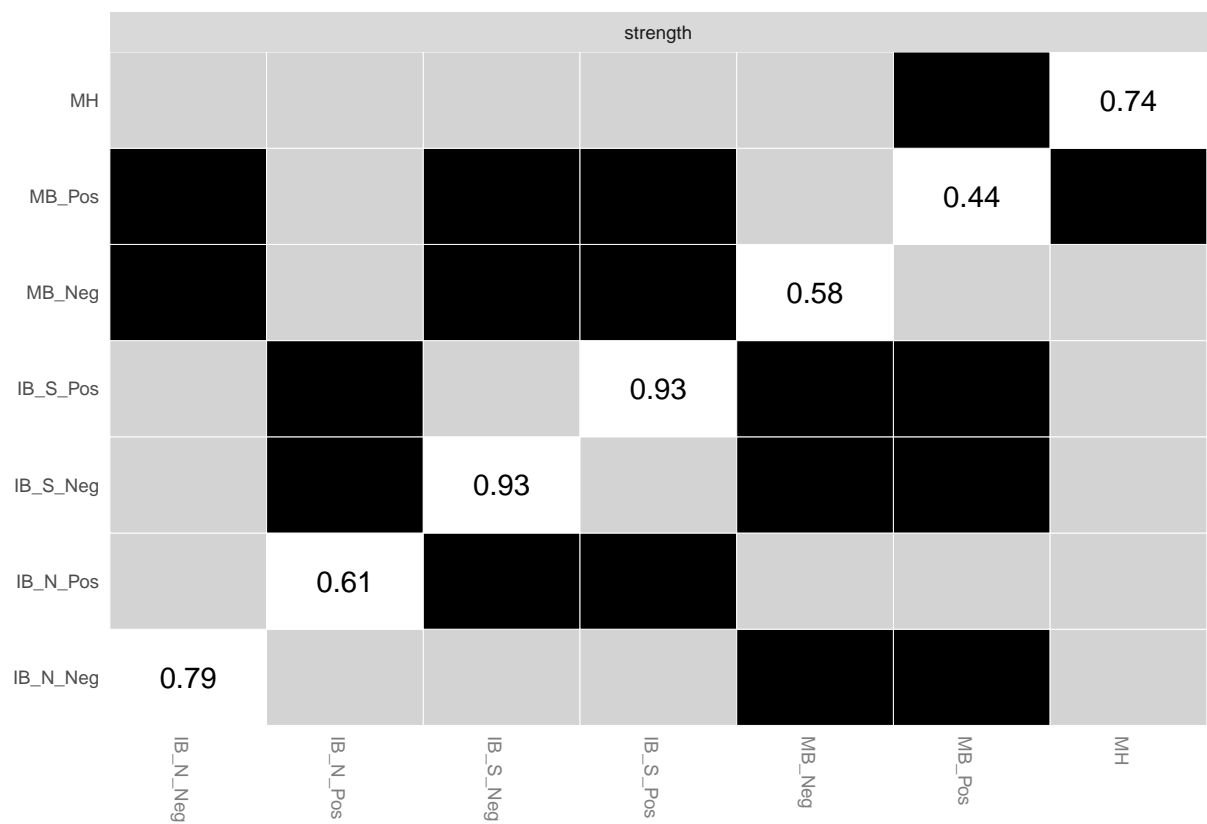


46

47

This plot provides a visualisation of the bootstrapped edge strenghts of all edges

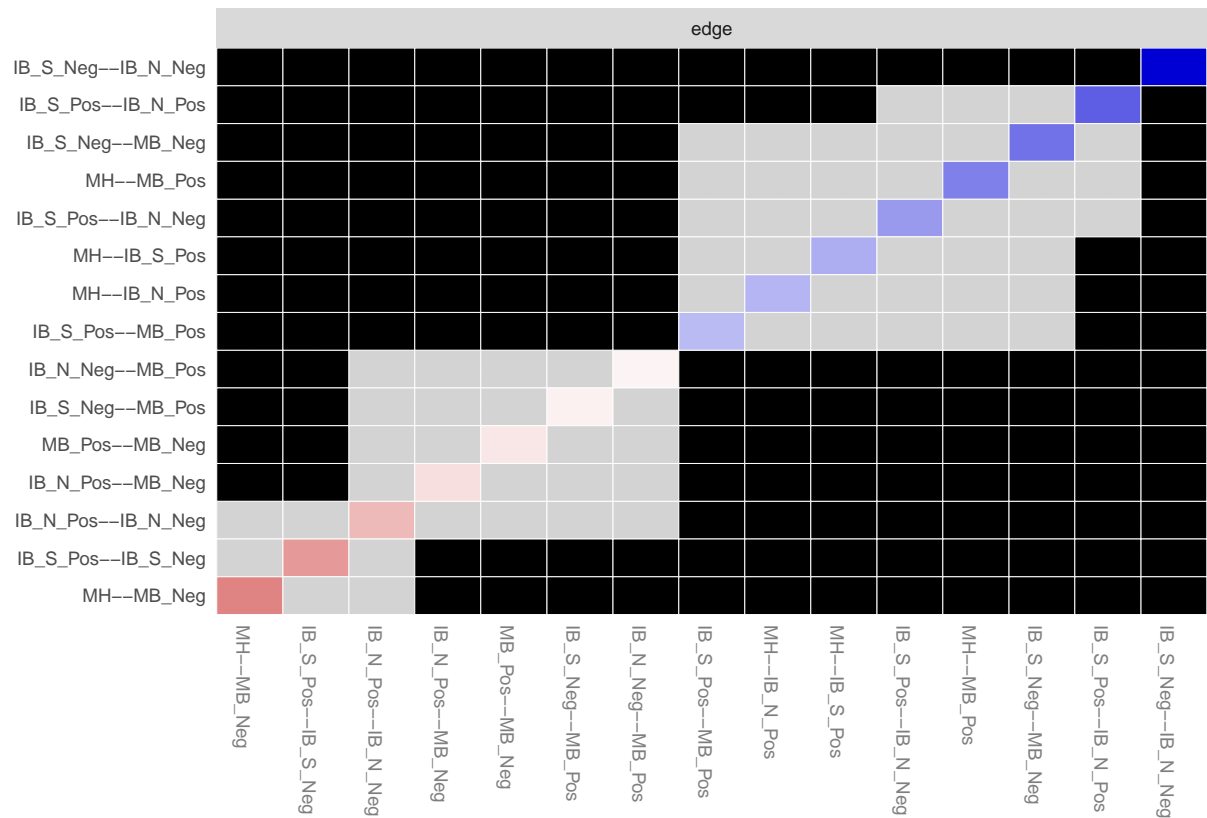




48

49

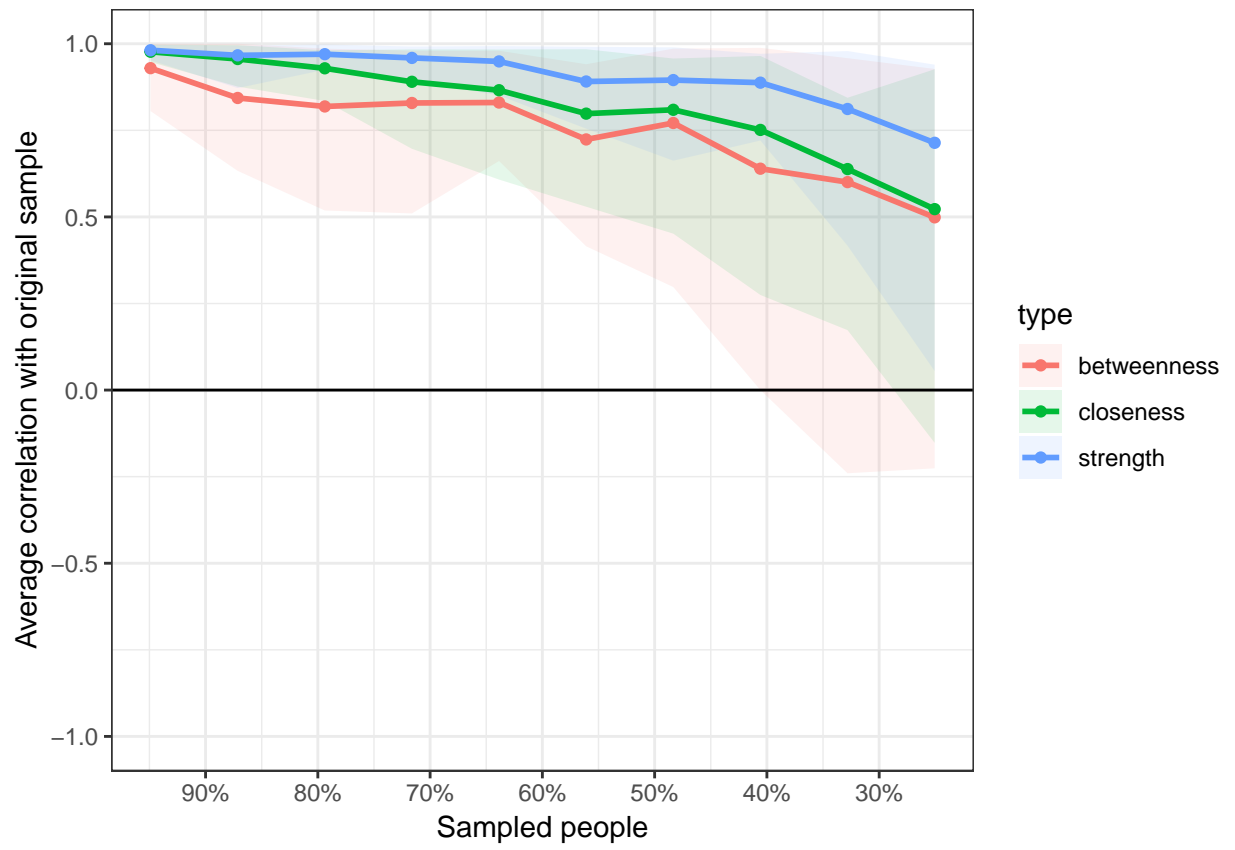
I'm not 100% what this next one is just yet



50

51

this provides an indication of all differences between edges.



52

53

plots the stability of the centrality indices, and next are the actual indices

## References