Simulation results

Ella Orme

ResNMTF

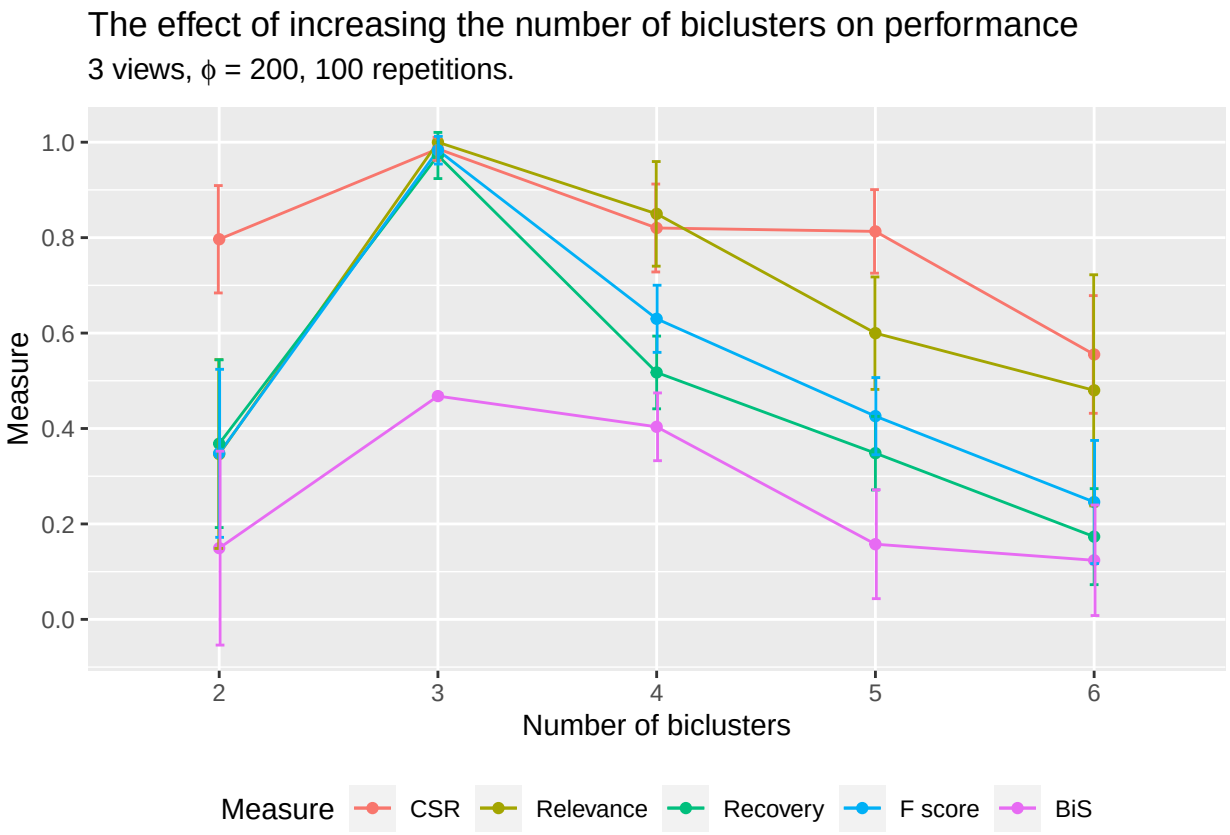

Figure 1: Simulation results for ResNMTF only.

	Number of biclusters				
	2	3	4	5	6
F score	0.3480 (0.1761)	0.9833 (0.0290)	0.6299 (0.0703)	0.4259 (0.0809)	0.2460 (0.1290)
Relevance	0.3464 (0.1979)	0.9999 (0.0004)	0.8498 (0.1097)	0.5998 (0.1178)	0.4800 (0.2422)
Recovery	0.3682 (0.1758)	0.9722 (0.0484)	0.5175 (0.0762)	0.3483 (0.0771)	0.1734 (0.1006)
CSR	0.7966 (0.1125)	0.9861 (0.0242)	0.8202 (0.0921)	0.8131 (0.0876)	0.5552 (0.1233)
BiS	0.1493 (2.032)	0.4679 (0.0055)	0.4036 (0.0710)	0.1575 (0.1141)	0.1239 (0.1158)

[a] 3 views, $\phi = 200$, 100 repetitions.

Comparisons

Relevance

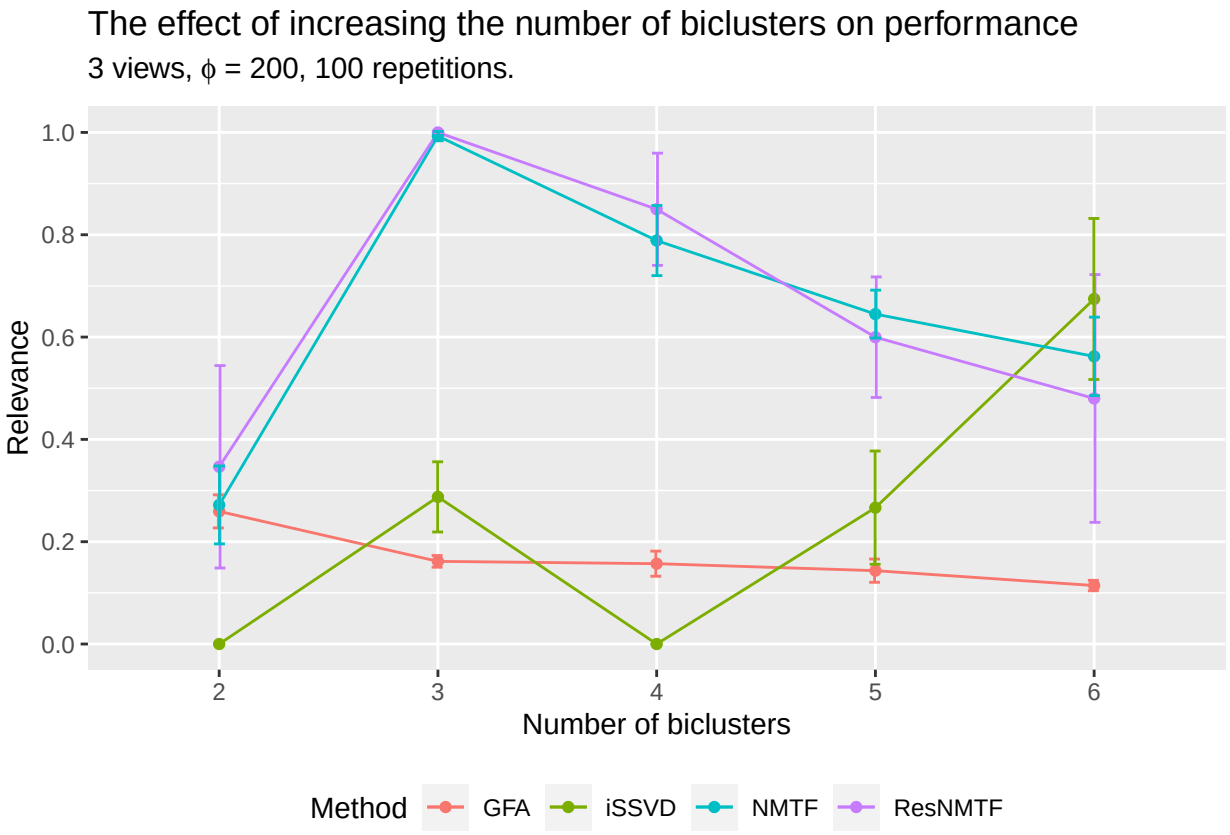

Figure 2: Relevance scores for all methods.

	Number of biclusters				
	2	3	4	5	6
ResNMTF	**0.3464 (0.1979)**	**0.9999 (0.0004)**	**0.8498 (0.1097)**	0.5998 (0.1178)	0.4800 (0.2422)
GFA	0.2593 (0.0323)	0.1616 (0.0114)	0.1570 (0.0245)	0.1434 (0.0227)	0.1143 (0.0102)
iSSVD	0.0000 (0.0000)	0.2876 (0.0686)	0.0000 (0.0000)	0.2666 (0.1107)	**0.6745 (0.1574)**
NMTF	0.2719 (0.0762)	0.9930 (0.0091)	0.7886 (0.0685)	**0.6449 (0.0468)**	0.5623 (0.0767)

[a] Relevance scores. 3 views, $\phi = 200$, 100 repetitions.

	Number of biclusters				
	2	3	4	5	6
ResNMTF	0.3682 (0.1758)	0.9722 (0.0484)	0.5175 (0.0762)	0.3483 (0.0771)	0.1734 (0.1006)
GFA	0.3445 (0.0593)	0.2439 (0.0350)	0.2121 (0.0419)	0.1863 (0.0373)	0.1644 (0.0183)
iSSVD	0.0000 (0.0000)	0.1081 (0.0481)	0.0000 (0.0000)	0.1752 (0.0599)	0.3607 (0.1544)
NMTF	**0.3902 (0.0949)**	**0.9935 (0.0069)**	**0.8436 (0.0509)**	**0.6424 (0.0389)**	**0.4846 (0.0720)**

[a] Recovery scores. 3 views, $\phi = 200$, 100 repetitions.

Recovery

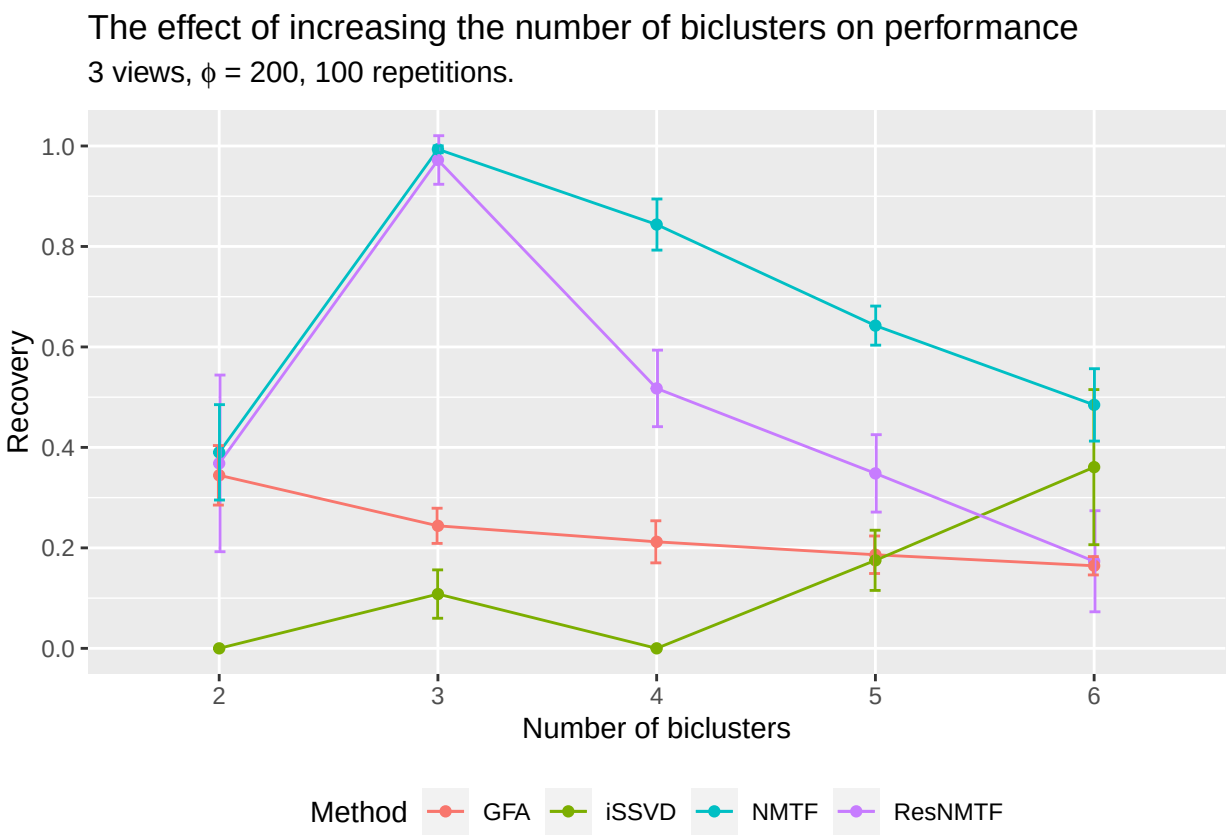

Figure 3: Recovery scores for all methods.

	Number of biclusters				
	2	3	4	5	6
ResNMTF	**0.3480 (0.1761)**	0.9833 (0.0290)	0.6299 (0.0703)	0.4259 (0.0809)	0.2460 (0.1290)
GFA	0.2952 (0.0424)	0.1940 (0.0192)	0.1800 (0.0309)	0.1617 (0.0279)	0.1348 (0.0131)
iSSVD	0.0000 (0.0000)	0.1542 (0.0427)	0.0000 (0.0000)	0.1906 (0.0428)	0.4336 (0.1272)
NMTF	0.3159 (0.0811)	**0.9932 (0.0077)**	**0.8130 (0.0574)**	**0.6415 (0.0373)**	**0.5088 (0.0686)**

[a] F scores. 3 views, $\phi = 200$, 100 repetitions.

F score

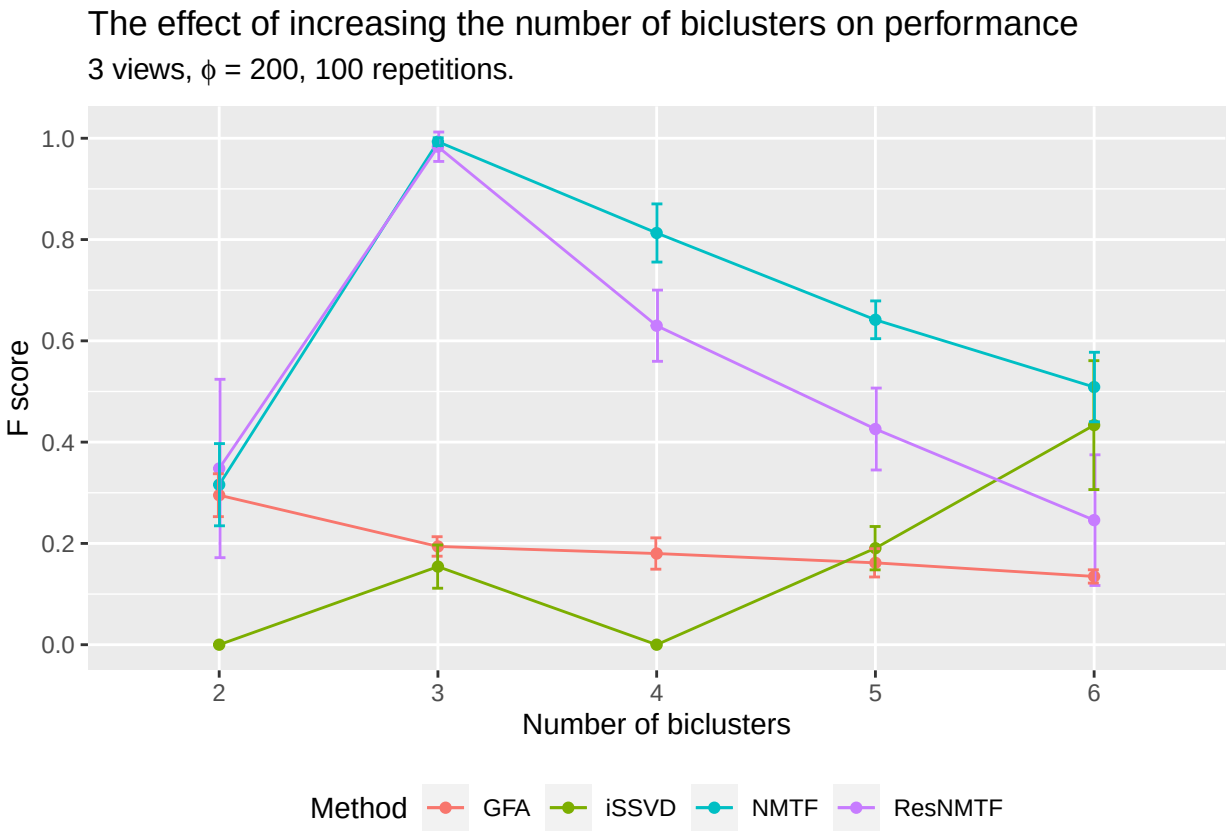

Figure 4: F scores for all methods.

	Number of biclusters				
	2	3	4	5	6
ResNMTF	0.1493 (0.2032)	0.4679 (0.0055)	0.4036 (0.0710)	0.1575 (0.1141)	0.1239 (0.1158)
GFA	**-0.2660 (0.0261)**	**-0.2192 (0.0447)**	**-0.1810 (0.0440)**	-0.1671 (0.0301)	**-0.1432 (0.0260)**
iSSVD	0.0000 (0.0000)	0.3314 (0.1906)	0.0000 (0.0000)	**-0.0805 (0.3529)**	0.0923 (0.2913)
NMTF	0.1182 (0.1112)	0.4586 (0.0103)	0.2239 (0.0436)	0.1707 (0.0492)	0.0937 (0.0495)

[a] BiS scores. 3 views, $\phi = 200$, 100 repetitions.

BiS

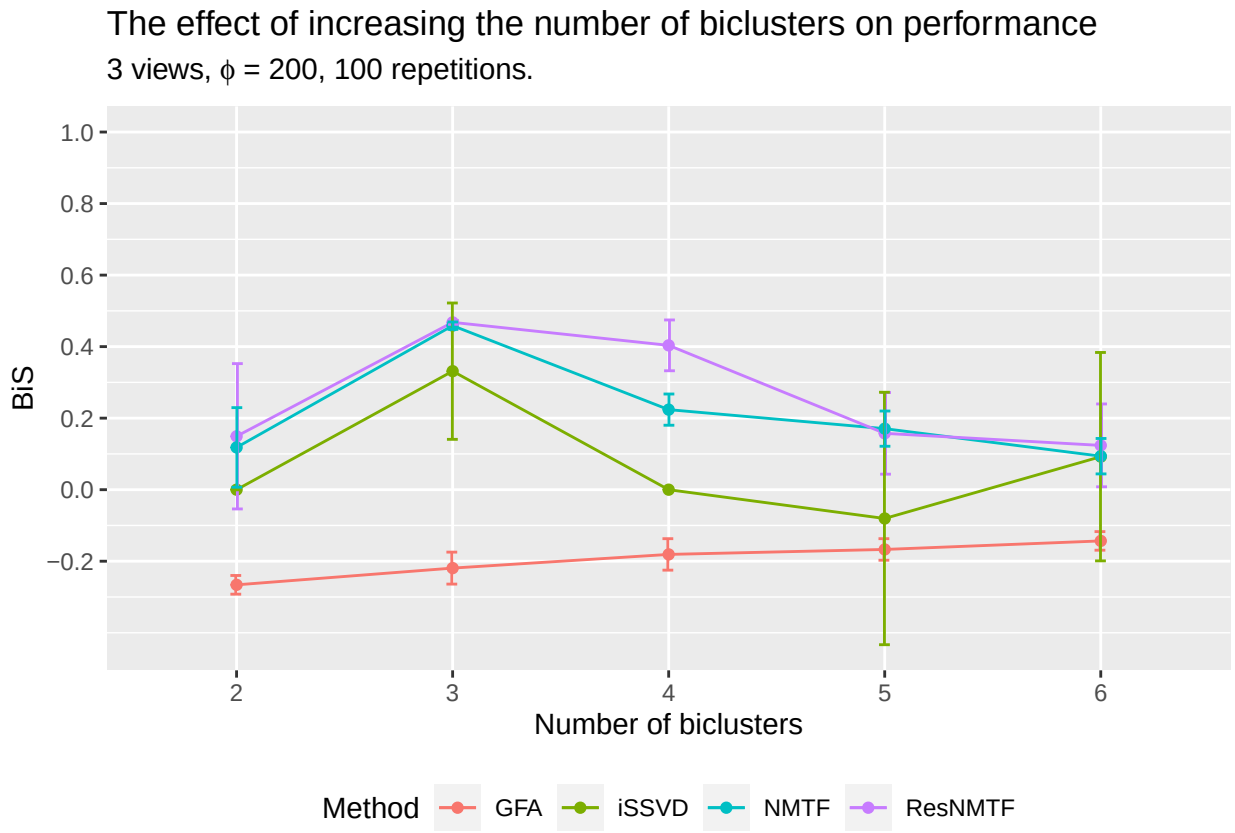

Figure 5: BiSilhouette scores for all methods.

	Number of biclusters				
	2	3	4	5	6
ResNMTF	**0.7966 (0.1125)**	0.9861 (0.0242)	0.8202 (0.0921)	0.8131 (0.0876)	0.5552 (0.1233)
GFA	0.5001 (0.0009)	0.5834 (0.0009)	0.6429 (0.0000)	0.6875 (0.0000)	0.7224 (0.0010)
iSSVD	0.3333 (0.0000)	0.6518 (0.0980)	0.2000 (0.0000)	0.8366 (0.2442)	0.7151 (0.2213)
NMTF	0.7340 (0.0774)	**0.9996 (0.0042)**	**0.9334 (0.0445)**	**0.9435 (0.0396)**	**0.8590 (0.0646)**

[a] CSR scores. 3 views, $\phi = 200$, 100 repetitions.

CSR

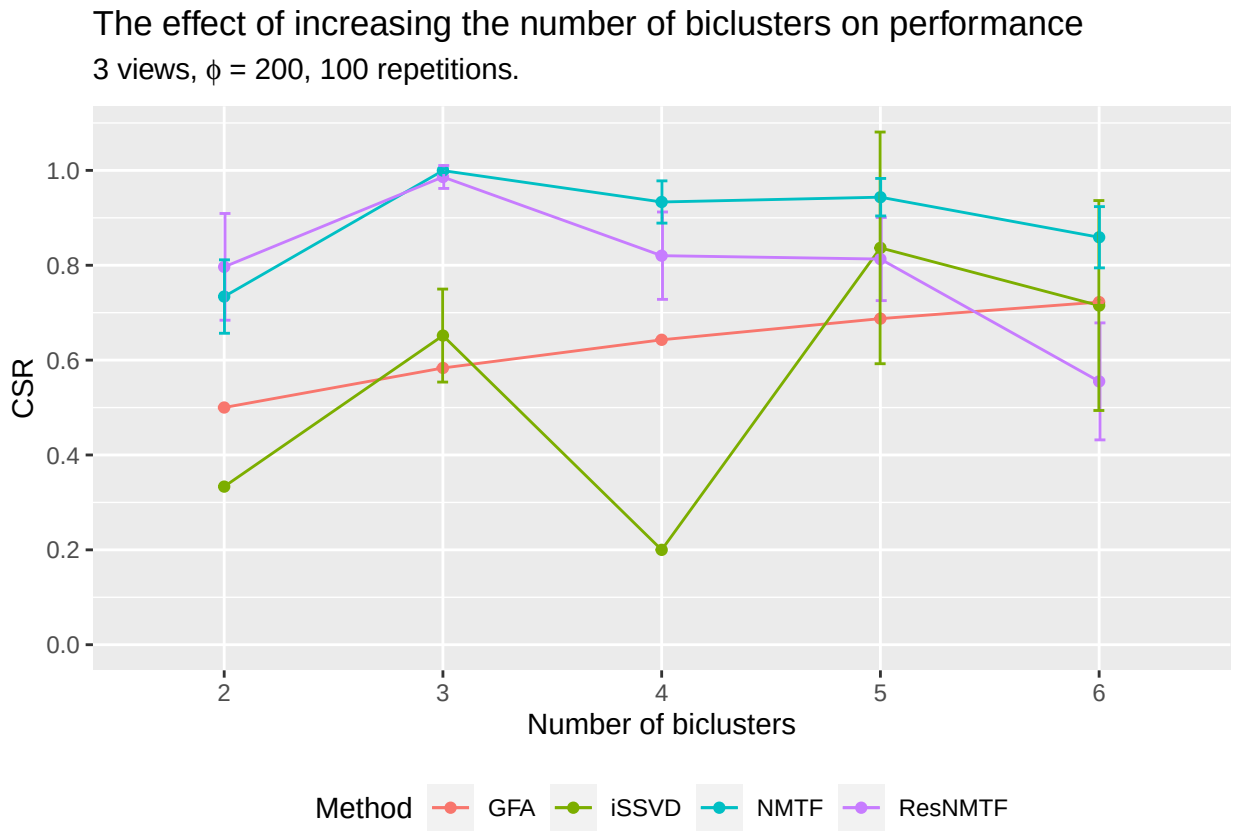

Figure 6: CSR scores for all methods.

Extrinsic measures

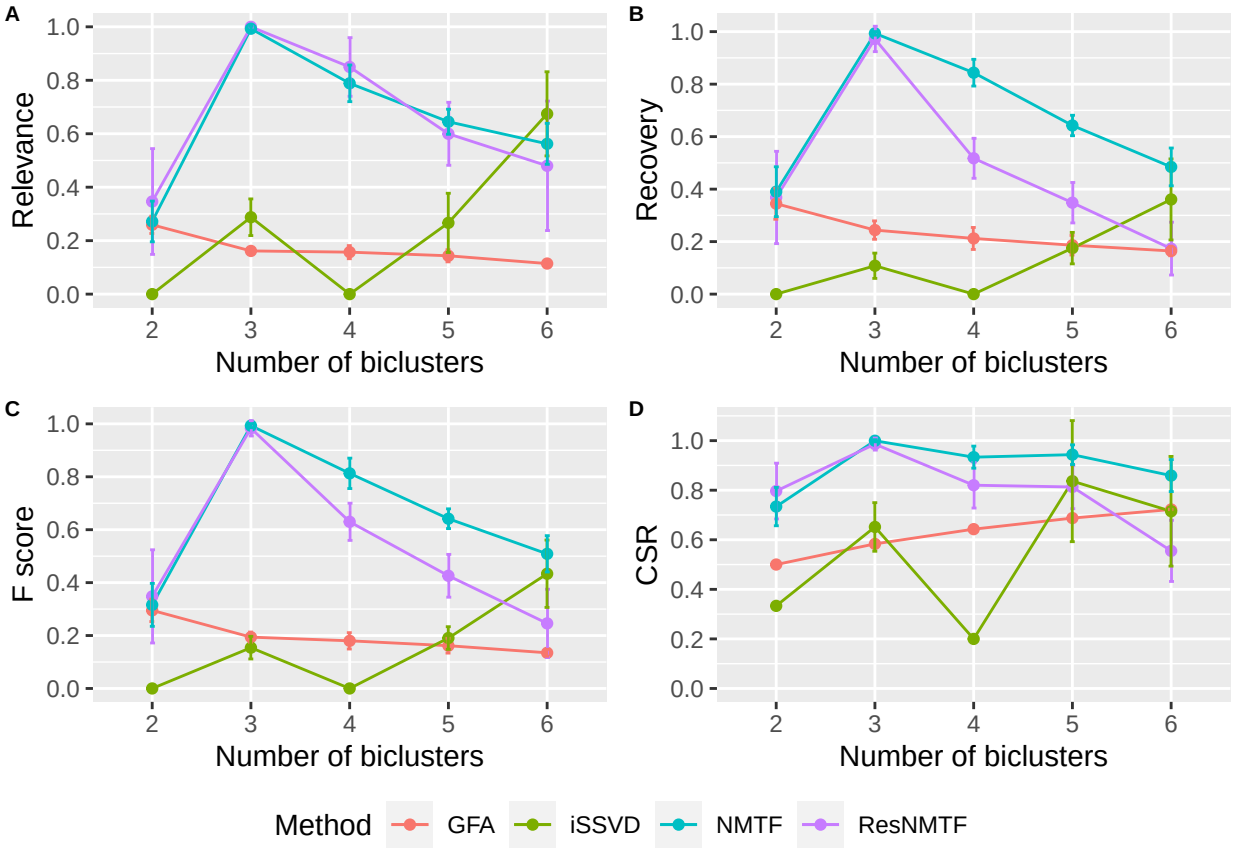

Figure 7: Simulation results for all methods.

Correlation

	BiS	CSR
F score	0.7289654	0.8107570
Relevance	0.7958409	0.7769028
Recovery	0.6550179	0.8024152

	Number of biclusters				
	2	3	4	5	6
Relevance					
ResNMTF	0.3464 (0.1979)	0.9999 (0.0004)	0.8498 (0.1097)	0.5998 (0.1178)	0.4800 (0.2422)
GFA	0.2593 (0.0323)	0.1616 (0.0114)	0.1570 (0.0245)	0.1434 (0.0227)	0.1143 (0.0102)
iSSVD	0.0000 (0.0000)	0.2876 (0.0686)	0.0000 (0.0000)	0.2666 (0.1107)	0.6745 (0.1574)
NMTF	0.2719 (0.0762)	0.9930 (0.0091)	0.7886 (0.0685)	0.6449 (0.0468)	0.5623 (0.0767)
Recovery					
ResNMTF	0.3682 (0.1758)	0.9722 (0.0484)	0.5175 (0.0762)	0.3483 (0.0771)	0.1734 (0.1006)
GFA	0.3445 (0.0593)	0.2439 (0.0350)	0.2121 (0.0419)	0.1863 (0.0373)	0.1644 (0.0183)
iSSVD	0.0000 (0.0000)	0.1081 (0.0481)	0.0000 (0.0000)	0.1752 (0.0599)	0.3607 (0.1544)
NMTF	0.3902 (0.0949)	0.9935 (0.0069)	0.8436 (0.0509)	0.6424 (0.0389)	0.4846 (0.0720)
F score					
ResNMTF	0.3480 (0.1761)	0.9833 (0.0290)	0.6299 (0.0703)	0.4259 (0.0809)	0.2460 (0.1290)
GFA	0.2952 (0.0424)	0.1940 (0.0192)	0.1800 (0.0309)	0.1617 (0.0279)	0.1348 (0.0131)
iSSVD	0.0000 (0.0000)	0.1542 (0.0427)	0.0000 (0.0000)	0.1906 (0.0428)	0.4336 (0.1272)
NMTF	0.3159 (0.0811)	0.9932 (0.0077)	0.8130 (0.0574)	0.6415 (0.0373)	0.5088 (0.0686)
BiS					
ResNMTF	0.1493 (0.2032)	0.4679 (0.0055)	0.4036 (0.0710)	0.1575 (0.1141)	0.1239 (0.1158)
GFA	-0.2660 (0.0261)	-0.2192 (0.0447)	-0.1810 (0.0440)	-0.1671 (0.0301)	-0.1432 (0.0260)
iSSVD	0.0000 (0.0000)	0.3314 (0.1906)	0.0000 (0.0000)	-0.0805 (0.3529)	0.0923 (0.2913)
NMTF	0.1182 (0.1112)	0.4586 (0.0103)	0.2239 (0.0436)	0.1707 (0.0492)	0.0937 (0.0495)
CSR					
ResNMTF	0.7966 (0.1125)	0.9861 (0.0242)	0.8202 (0.0921)	0.8131 (0.0876)	0.5552 (0.1233)
GFA	0.5001 (0.0009)	0.5834 (0.0009)	0.6429 (0.0000)	0.6875 (0.0000)	0.7224 (0.0010)
iSSVD	0.3333 (0.0000)	0.6518 (0.0980)	0.2000 (0.0000)	0.8366 (0.2442)	0.7151 (0.2213)
NMTF	0.7340 (0.0774)	0.9996 (0.0042)	0.9334 (0.0445)	0.9435 (0.0396)	0.8590 (0.0646)

[a] 3 views, $\phi = 200$, 100 repetitions.