Supplementary Information (SI)

Appendix 1: Table A

Edge-Weight (Female)

	Female											
ESE Item	CU1	CU2	CU3	LH1	LH2	LH3	PC1	PC2	PC3	SR1	SR2	SR3
CU1	0.000	0.106	0.348	0.024	0.000	0.000	0.135	0.093	0.082	0.007	0.105	0.000
CU2	0.106	0.000	0.315	0.000	0.000	0.204	0.000	0.000	0.000	0.023	0.000	0.011
CU3	0.348	0.315	0.000	0.000	0.000	0.003	0.153	0.106	0.126	0.000	0.056	0.000
LH1	0.024	0.000	0.000	0.000	0.407	0.212	0.000	0.043	0.112	0.011	0.030	0.039
LH2	0.000	0.000	0.000	0.407	0.000	0.408	0.000	0.046	0.024	0.079	0.000	0.011
LH3	0.000	0.204	0.003	0.212	0.408	0.000	0.037	0.000	0.007	0.000	0.000	0.000
PC1	0.135	0.000	0.153	0.000	0.000	0.037	0.000	0.260	0.135	0.058	0.000	0.073
PC2	0.093	0.000	0.106	0.043	0.046	0.000	0.260	0.000	0.318	0.000	0.000	0.160
PC3	0.082	0.000	0.126	0.112	0.024	0.007	0.135	0.318	0.000	0.095	0.092	0.052
SR1	0.007	0.023	0.000	0.011	0.079	0.000	0.058	0.000	0.095	0.000	0.404	0.055
SR2	0.105	0.000	0.056	0.030	0.000	0.000	0.000	0.000	0.092	0.404	0.000	0.373
SR3	0.000	0.011	0.000	0.039	0.011	0.000	0.073	0.160	0.052	0.055	0.373	0.000

CU = conceptual understanding; LH = laboratory hazards; PC = procedural complexity; SR = sufficiency of resources

Supplementary Information (SI)

Appendix 2: Table B

Edge-Weight (Male)

	Male											
ESE Item	CU1	CU2	CU3	LH1	LH2	LH3	PC1	PC2	PC3	SR1	SR2	SR3
CU1	0.000	0.138	0.368	0.015	0.130	0.020	0.039	0.060	0.155	0.000	0.000	0.062
CU2	0.138	0.000	0.180	0.017	0.000	0.154	0.000	0.079	0.000	0.123	0.000	0.000
CU3	0.368	0.180	0.000	0.000	0.000	0.000	0.117	0.114	0.106	0.000	0.032	0.152
LH1	0.015	0.017	0.000	0.000	0.464	0.243	0.000	0.000	0.000	0.001	0.000	0.063
LH2	0.130	0.000	0.000	0.464	0.000	0.223	0.139	0.014	0.000	0.151	0.037	0.043
LH3	0.020	0.154	0.000	0.243	0.223	0.000	0.031	0.023	0.000	0.000	0.000	0.000
PC1	0.039	0.000	0.117	0.000	0.139	0.031	0.000	0.269	0.000	0.056	0.012	0.000
PC2	0.060	0.079	0.114	0.000	0.014	0.023	0.269	0.000	0.522	0.000	0.019	0.005
PC3	0.155	0.000	0.106	0.000	0.000	0.000	0.000	0.522	0.000	0.081	0.129	0.000
SR1	0.000	0.123	0.000	0.001	0.151	0.000	0.056	0.000	0.081	0.000	0.225	0.188
SR2	0.000	0.000	0.032	0.000	0.037	0.000	0.012	0.019	0.129	0.225	0.000	0.386
SR3	0.062	0.000	0.152	0.063	0.043	0.000	0.000	0.005	0.000	0.188	0.386	0.000

CU = conceptual understanding; LH = laboratory hazards; PC = procedural complexity; SR = sufficiency of resources

Supplementary Information (SI)

Appendix 3: Table C

Centrality Indices for ESE Items in Female and Male Networks

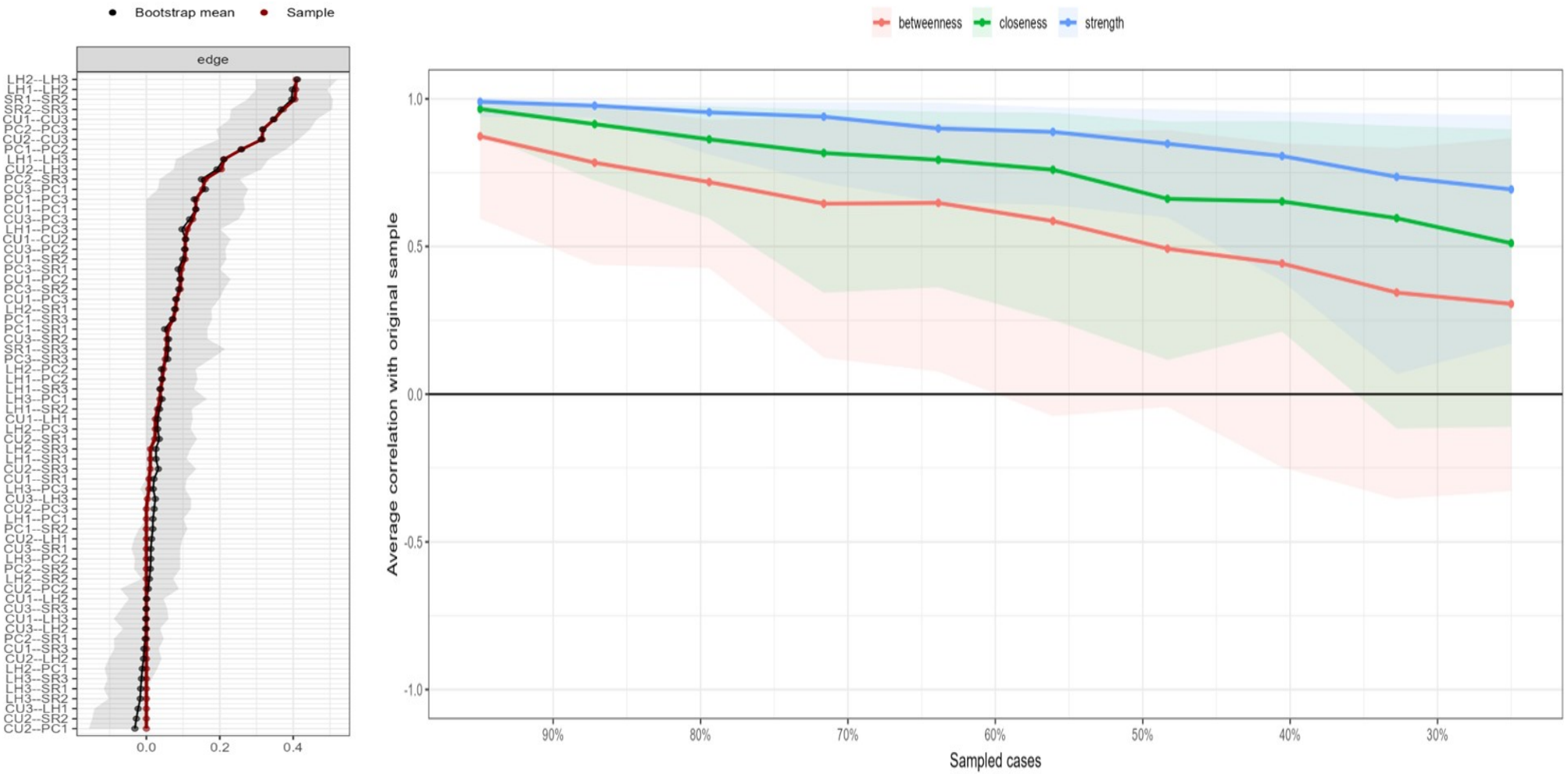
	Female				Male			
ESE Item	Betweenness	Closeness	Strength	Expected influence	Betweenness	Closeness	Strength	Expected influence
CU1	-0.074	0.756	-0.039	-0.039	-0.231	1.052	0.511	0.511
CU2	0.517	0.290	-1.764	-1.764	-0.924	-0.505	-1.177	-1.177
CU3	1.992	1.614	1.430	1.430	0.231	1.598	0.980	0.980
LH1	-0.664	-1.083	-0.206	-0.206	-1.155	-0.339	-0.534	-0.534
LH2	-0.369	-0.427	0.496	0.496	2.773	1.784	1.729	1.729
LH3	0.221	-0.768	-0.255	-0.255	-0.693	-1.713	-1.165	-1.165
PC1	-1.845	-0.061	-0.400	-0.400	0.231	-0.456	-1.340	-1.340
PC2	0.221	0.919	0.852	0.852	0.000	-0.134	1.177	1.177
PC3	-0.369	1.478	0.971	0.971	0.000	-0.283	0.550	0.550
SR1	-0.369	-1.015	-1.237	-1.237	0.462	-0.115	-0.408	-0.408
SR2	1.402	-0.476	1.105	1.105	-0.231	-0.186	-0.329	-0.329
SR3	-0.664	-1.227	-0.953	-0.953	-0.462	-0.704	0.007	0.007

CU = conceptual understanding; LH = laboratory hazards; PC = procedural complexity; SR = sufficiency of resources

Supplementary Information (SI)

Appendix 4: Figure A

Female ESE Network Robustness Results: Bootstrapped Edge-Weight Confidence Intervals (Left) and Centrality Stability Curves (Right)



Supplementary Information (SI)

Appendix 5: Figure B

Male ESE Network Robustness Results: Bootstrapped Edge-Weight Confidence Intervals (Left) and Centrality Stability Curves (Right)