Model 1 and 2 Basic ERGM and Group ERGM for data content

|  |  |  |
| --- | --- | --- |
|  | Basic model | Group model |
| Parameters | GoF T-ratio | GoF T-ratio |
| Arc | -0.028 | 0.028 |
| Reciprocity | 0.075 | -0.082 |
| Alternating in star | 0.040 | **0.110** |
| Alternating out star | 0.021 | 0.061 |
| Alternating triangle – transitive | **0.126** | **0.193** |
| Alternating triangle – cyclical | **0.170** | **0.245** |
| Alternating triangle – down | **0.135** | **0.189** |
| Alternating triangle – up | **0.141** | **0.159** |
| Alternating two path – combined | 0.075 | 0.081 |
| Group matching | - | 0.049 |
| Group matching reciprocity | - | -0.021 |
| SD in-degree distribution | 1.484 | 1.488 |
| Skew in-degree distribution | **3.107** | **2.736** |
| SD out-degree distribution | 0.742 | 0.755 |
| Skew out-degree distribution | 1.079 | 1.511 |
| Global clustering Cto | 0.886 | 1.060 |
| Global clustering Cti | 0.246 | 0.386 |
| Global clustering Ctm | 1.396 | **2.105** |
| Global clustering Ccm | 0.940 | 1.289 |
| Global clustering AKC-T | 0.740 | 1.261 |
| Global clustering AKC-D | 0.323 | 0.315 |
| Global clustering AKC-U | -0.504 | -0.873 |
| Global clustering AKC-C | 0.627 | 0.890 |

The fit for these models is generally acceptable but with triangles (cluttering) being slightly above the 0.1 threshold in both models. In the exogenous model the in star effect is also marginally poorly fit. The exogenous covariates are well fit. In general the higher order statistics are well fit apart from the skew of in degree in both models.

Model 3 Categorical group ERGM for data content

|  |  |
| --- | --- |
| Parameters | GoF T-ratio |
| Arc | **0.204** |
| Reciprocity | **0.147** |
| Alternating in star | **0.162** |
| Alternating out star | **0.173** |
| Alternating triangle – transitive | 0.077 |
| Alternating triangle – cyclical | 0.009 |
| Alternating triangle – down | 0.066 |
| Alternating triangle – up | 0.074 |
| Alternating two-path – TDU | **0.221** |
| Charity sender | [base] |
| Support sender | **0.975** |
| Data sender | -0.054 |
| Charity receiver | [base] |
| Support receiver | **0.767** |
| Data receiver | -0.057 |
| Charity interaction | [base] |
| Support interaction | **0.856** |
| Data interaction | -0.081 |
| Charity activity reciprocity | [base] |
| Support activity reciprocity | **0.946** |
| Data activity reciprocity | -0.065 |
| Charity interaction reciprocity | [base] |
| Support interaction reciprocity | **0.887** |
| Data interaction reciprocity | **-0.118** |
| SD in-degree distribution | 0.624 |
| Skew in-degree distribution | **2.533** |
| SD out-degree distribution | 0.326 |
| Skew out-degree distribution | 0.984 |
| Global clustering Cto | 0.514 |
| Global clustering Cti | 0.215 |
| Global clustering Ctm | 0.806 |
| Global clustering Ccm | 0.598 |
| Global clustering AKC-T | 0.481 |
| Global clustering AKC-D | 0.205 |
| Global clustering AKC-U | -0.147 |
| Global clustering AKC-C | 0.374 |

This model had the most problems with fit, generally the non-triangle internal effects are not well fit (though they are not extremely poor). For the exogenous variable, the data group (which were the significant effects) are generally well fit with the support group being poorly fit (but this group had no significant results). As with the more basic models, the higher order effects were well fit apart from skew in degree.

Model 4 and 5 Basic and Data mentions ERGM for charity-support following links

|  |  |  |
| --- | --- | --- |
|  | Basic model | Data mentions model |
| Parameters | GoF T-ratio | GoF T-ratio |
| Arc | -0.066 | -0.065 |
| Alternating in star | -0.095 | -0.077 |
| Alternating out star | -0.049 | -0.084 |
| Alternating two path – TDU | -0.020 | 0.042 |
| Data mentions receiver | - | 0.006 |
| SD in-degree distribution | 1.011 | 1.603 |
| Skew in-degree distribution | **2.337** | **5.130** |
| SD out-degree distribution | 1.100 | 1.948 |
| Skew out-degree distribution | **2.110** | **4.847** |
| Global clustering Cto | -0.888 | -1.081 |
| Global clustering Cti | -0.907 | -1.089 |
| Global clustering Ctm | -1.465 | -1.808 |
| Global clustering Ccm | - | - |
| Global clustering AKC-T | -1.465 | -1.809 |
| Global clustering AKC-D | -0.957 | -1.189 |
| Global clustering AKC-U | -1.043 | -1.147 |
| Global clustering AKC-C | - | - |

These models are well fit apart from the skew of in and out degree, which may be partially due to the external data management applied.

Model 6 and 7 Basic and Data mentions ERGM for support-data following links

|  |  |  |
| --- | --- | --- |
|  | Basic model | Data mentions model |
| Parameters | GoF T-ratio | GoF T-ratio |
| Arc | -0.039 | 0.026 |
| Alternating in star | -0.059 | -0.075 |
| Alternating out star | -0.062 | -0.026 |
| Alternating two path – TDU | -0.074 | -0.089 |
| Data mentions receiver | - | 0.040 |
| SD in-degree distribution | 0.591 | 0.522 |
| Skew in-degree distribution | 0.688 | 0.182 |
| SD out-degree distribution | 1.033 | 1.055 |
| Skew out-degree distribution | **2.570** | **2.102** |
| Global clustering Cto | -0.949 | -0.791 |
| Global clustering Cti | -0.898 | -0.870 |
| Global clustering Ctm | -0.930 | -0.799 |
| Global clustering Ccm | -0.369 | -0.429 |
| Global clustering AKC-T | -0.932 | -0.798 |
| Global clustering AKC-D | -0.957 | -0.796 |
| Global clustering AKC-U | -0.906 | -0.879 |
| Global clustering AKC-C | -0.375 | -0.434 |

These models are fit adequately apart from the skew of out degree.