# EIGENVECTOR CENTRALITY (EVC)

**Network name:** scale-free
**Actors:** 200

*The Eigenvector Centrality of each node is the $i_{th}$ element of the leading eigenvector of the adjacency matrix, that is the eigenvector corresponding to the largest positive eigenvalue.*
*Proposed by Bonacich (1972), the Eigenvector Centrality is an extension of the simpler Degree Centrality because it gives each actor a score proportional to the scores of its neighbors. Thus, a node may have high EVC score if it has lots of ties or it has ties to other nodes with high EVC.*
*The eigenvector centralities are also known as Gould indices.*
*EVC' is the scaled EVC (EVC divided by max EVC).*
*EVC'' is the standardized index (EVC divided by the sum of all EVCs).*

**EVC range:** $0 \leq EVC < 1$ (The eigenvector has unit euclidean length)

**EVC' range:** $0 \leq EVC' \leq 1$

| Node | Label | EVC | EVC' | EVC'' | %EVC' |
|---|---|---|---|---|---|
| 1 | 1 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 2 | 2 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 3 | 3 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 4 | 4 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 5 | 5 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 6 | 6 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 7 | 7 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 8 | 8 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 9 | 9 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 10 | 10 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 11 | 11 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 12 | 12 | 0.103039 | 0.500000 | 0.008351 | 50.000000 |
| 13 | 13 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 14 | 14 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 15 | 15 | 0.103039 | 0.500000 | 0.008351 | 50.000000 |
| 16 | 16 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 17 | 17 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 18 | 18 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 19 | 19 | 0.103039 | 0.500000 | 0.008351 | 50.000000 |
| 20 | 20 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 21 | 21 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 22 | 22 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 23 | 23 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 24 | 24 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 25 | 25 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 26 | 26 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 27 | 27 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 28 | 28 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 29 | 29 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 30 | 30 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 31 | 31 | 0.206079 | 1.000000 | 0.016701 | 100.000000 |
| 32 | 32 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 33 | 33 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 34 | 34 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 35 | 35 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 36 | 36 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 37 | 37 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 38 | 38 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 39 | 39 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 40 | 40 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 41 | 41 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 42 | 42 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 43 | 43 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 44 | 44 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 45 | 45 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |

| Node | Label | EVC | EVC' | EVC'' | %EVC' |
|---|---|---|---|---|---|
| 46 | 46 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 47 | 47 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 48 | 48 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 49 | 49 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 50 | 50 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 51 | 51 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 52 | 52 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 53 | 53 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 54 | 54 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 55 | 55 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 56 | 56 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 57 | 57 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 58 | 58 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 59 | 59 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 60 | 60 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 61 | 61 | 0.180319 | 0.875000 | 0.014614 | 87.500000 |
| 62 | 62 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 63 | 63 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 64 | 64 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 65 | 65 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 66 | 66 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 67 | 67 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 68 | 68 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 69 | 69 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 70 | 70 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 71 | 71 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 72 | 72 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 73 | 73 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 74 | 74 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 75 | 75 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 76 | 76 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 77 | 77 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 78 | 78 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 79 | 79 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 80 | 80 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 81 | 81 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 82 | 82 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 83 | 83 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 84 | 84 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 85 | 85 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 86 | 86 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 87 | 87 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 88 | 88 | 0.103039 | 0.500000 | 0.008351 | 50.000000 |
| 89 | 89 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 90 | 90 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 91 | 91 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 92 | 92 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 93 | 93 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 94 | 94 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 95 | 95 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 96 | 96 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 97 | 97 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 98 | 98 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 99 | 99 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 100 | 100 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 101 | 101 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 102 | 102 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 103 | 103 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 104 | 104 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 105 | 105 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 106 | 106 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 107 | 107 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 108 | 108 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |

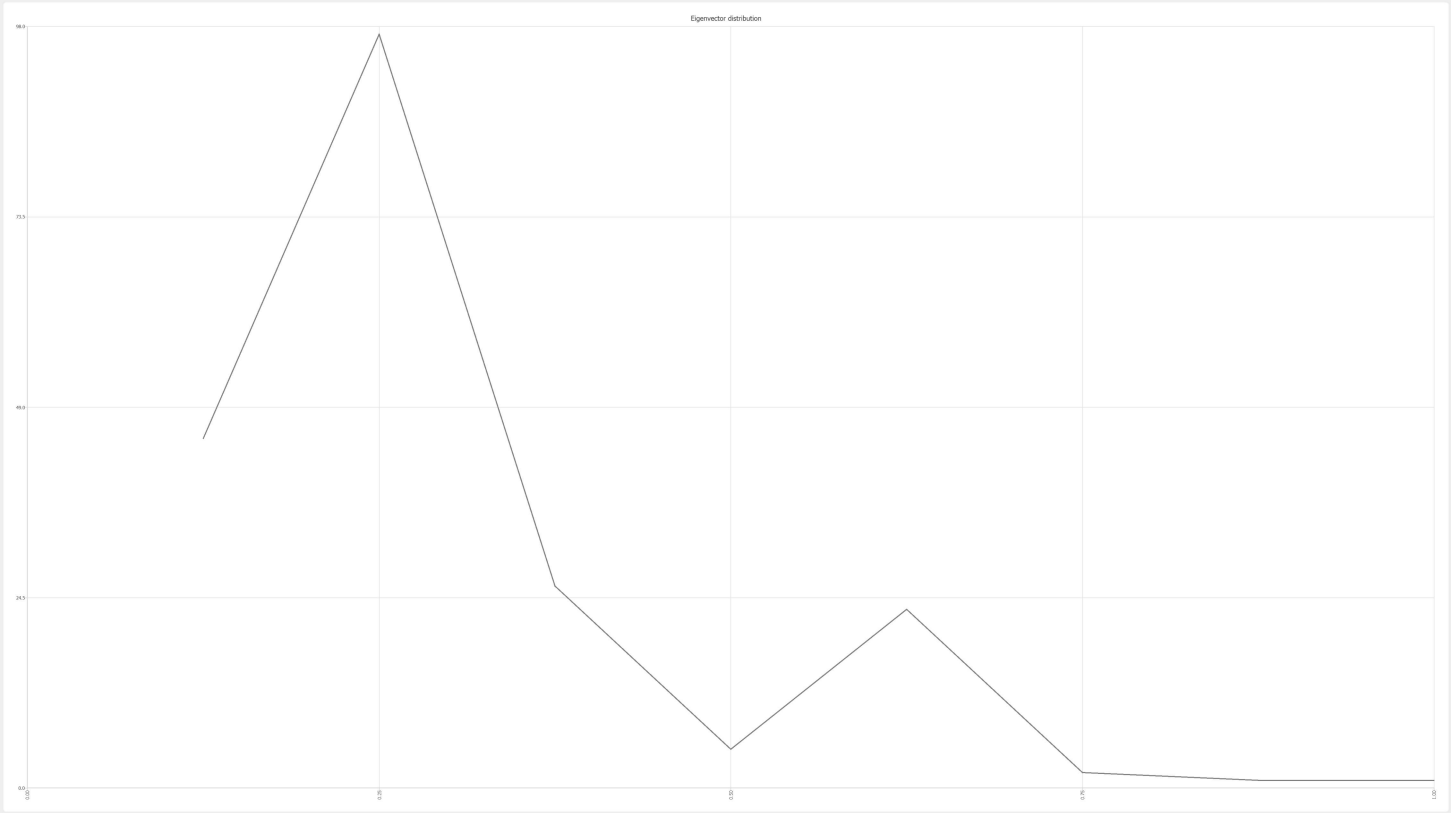
| Node | Label | EVC | EVC' | EVC'' | %EVC' |
|---|---|---|---|---|---|
| 109 | 109 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 110 | 110 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 111 | 111 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 112 | 112 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 113 | 113 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 114 | 114 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 115 | 115 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 116 | 116 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 117 | 117 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 118 | 118 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 119 | 119 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 120 | 120 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 121 | 121 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 122 | 122 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 123 | 123 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 124 | 124 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 125 | 125 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 126 | 126 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 127 | 127 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 128 | 128 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 129 | 129 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 130 | 130 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 131 | 131 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 132 | 132 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 133 | 133 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 134 | 134 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 135 | 135 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 136 | 136 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 137 | 137 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 138 | 138 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 139 | 139 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 140 | 140 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 141 | 141 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 142 | 142 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 143 | 143 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 144 | 144 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 145 | 145 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 146 | 146 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 147 | 147 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 148 | 148 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 149 | 149 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 150 | 150 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 151 | 151 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 152 | 152 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 153 | 153 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 154 | 154 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 155 | 155 | 0.103039 | 0.500000 | 0.008351 | 50.000000 |
| 156 | 156 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 157 | 157 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 158 | 158 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 159 | 159 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 160 | 160 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 161 | 161 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 162 | 162 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 163 | 163 | 0.154559 | 0.750000 | 0.012526 | 75.000000 |
| 164 | 164 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 165 | 165 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 166 | 166 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 167 | 167 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 168 | 168 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 169 | 169 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 170 | 170 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 171 | 171 | 0.154559 | 0.750000 | 0.012526 | 75.000000 |

| Node | Label | EVC | EVC' | EVC'' | %EVC' |
|---|---|---|---|---|---|
| 172 | 172 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 173 | 173 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 174 | 174 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 175 | 175 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 176 | 176 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 177 | 177 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 178 | 178 | 0.077280 | 0.375000 | 0.006263 | 37.500000 |
| 179 | 179 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 180 | 180 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 181 | 181 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 182 | 182 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 183 | 183 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 184 | 184 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 185 | 185 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 186 | 186 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 187 | 187 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 188 | 188 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 189 | 189 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 190 | 190 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 191 | 191 | 0.128799 | 0.625000 | 0.010438 | 62.500000 |
| 192 | 192 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 193 | 193 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 194 | 194 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 195 | 195 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 196 | 196 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 197 | 197 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |
| 198 | 198 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 199 | 199 | 0.051520 | 0.250000 | 0.004175 | 25.000000 |
| 200 | 200 | 0.025760 | 0.125000 | 0.002088 | 12.500000 |

**Max EVC** = 0.206079 (node 31)
**Min EVC** = 0.025760 (node 1)
**EVC classes** = 8

**EVC Sum** = 12.338969
**EVC Mean** = 0.061695
**EVC Variance** = 0.001194

# EVC' DISTRIBUTION




# GROUP EIGENVECTOR CENTRALIZATION (GEC)

Since there is no way to compute Group Eigenvector Centralization,
you can use Variance as a general centralization index.

**Variance =** 0.001194

*Variance = 0, when all nodes have the same EVC value, i.e. a complete or a circle graph).*
*Larger values of variance suggest larger variability between the EVC' values.*

*Eigenvector Centrality report,*
*Created by Social Network Visualizer v2.5: Wed, 27.Oct.2021 10:43:53*
*Computation time: 444 msecs*