Results for 2020

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Top 20 countries with highest incoming population:
United States 52970075
Germany 15658012
Saudi Arabia 13001347
Russia 11638936
United Kingdom 9575037
France 8530794
United Arab Emirates 8451322
Canada 8444051
Australia 7649776
Spain 7170044
Italy 6437625
Turkey 5913360
India 4663386
Ukraine 4571036
Thailand 3631598
Kazakhstan 3459530
Jordan 3435813
Malaysia 3247513
Pakistan 3201265
Kuwait 2985881
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Top 20 countries with highest outgoing population:
India 17869420
Mexico 11185737
Russia 10756665
China 10466119
Caribbean 9083839
Syria 8457214
Bangladesh 7402067
Pakistan 6328099
Philippines 6139495
Ukraine 6139144
Afghanistan 5853838
Venezuela 5415337
Poland 4824967
United Kingdom 4671729
Indonesia 4597245
Kazakhstan 4203899
Palestine 4022791
Romania 3986865
Germany 3855239
Myanmar 3711751
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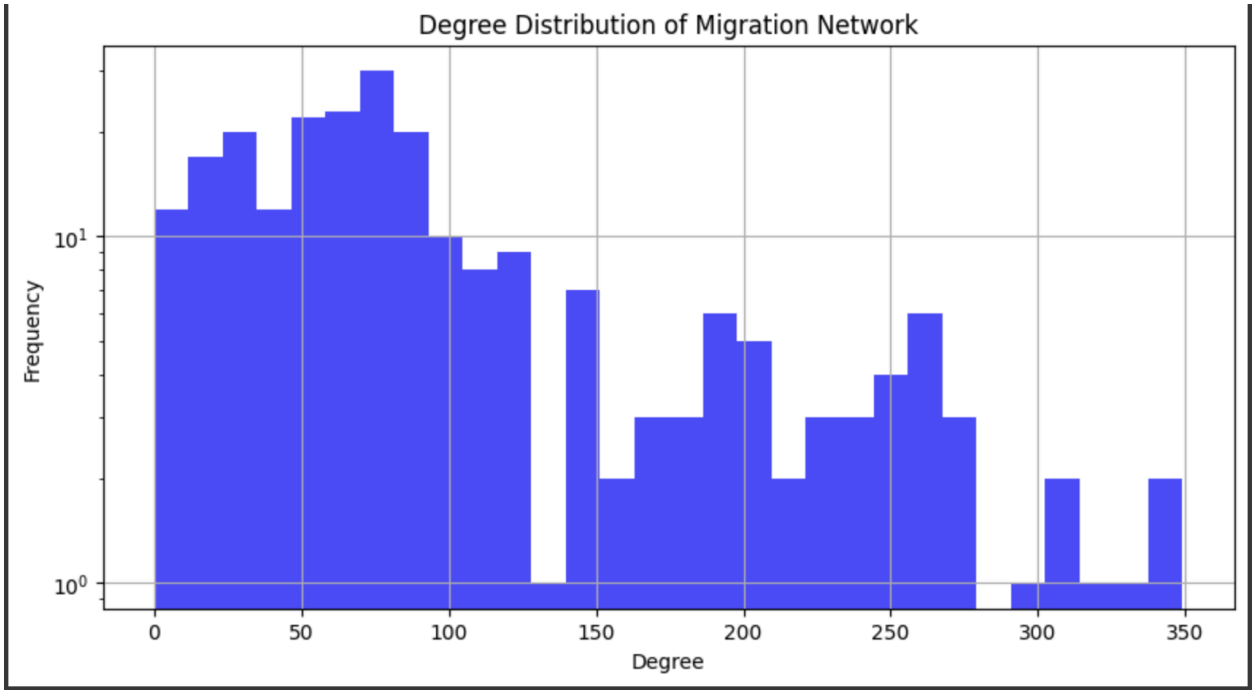
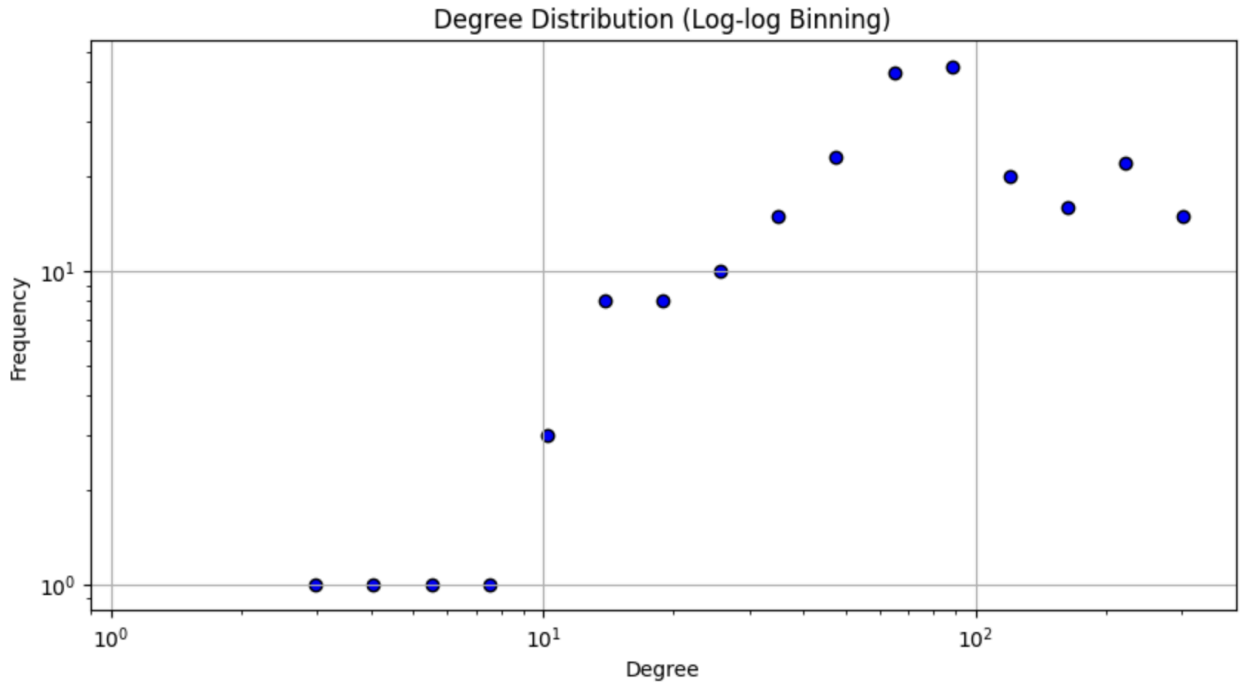
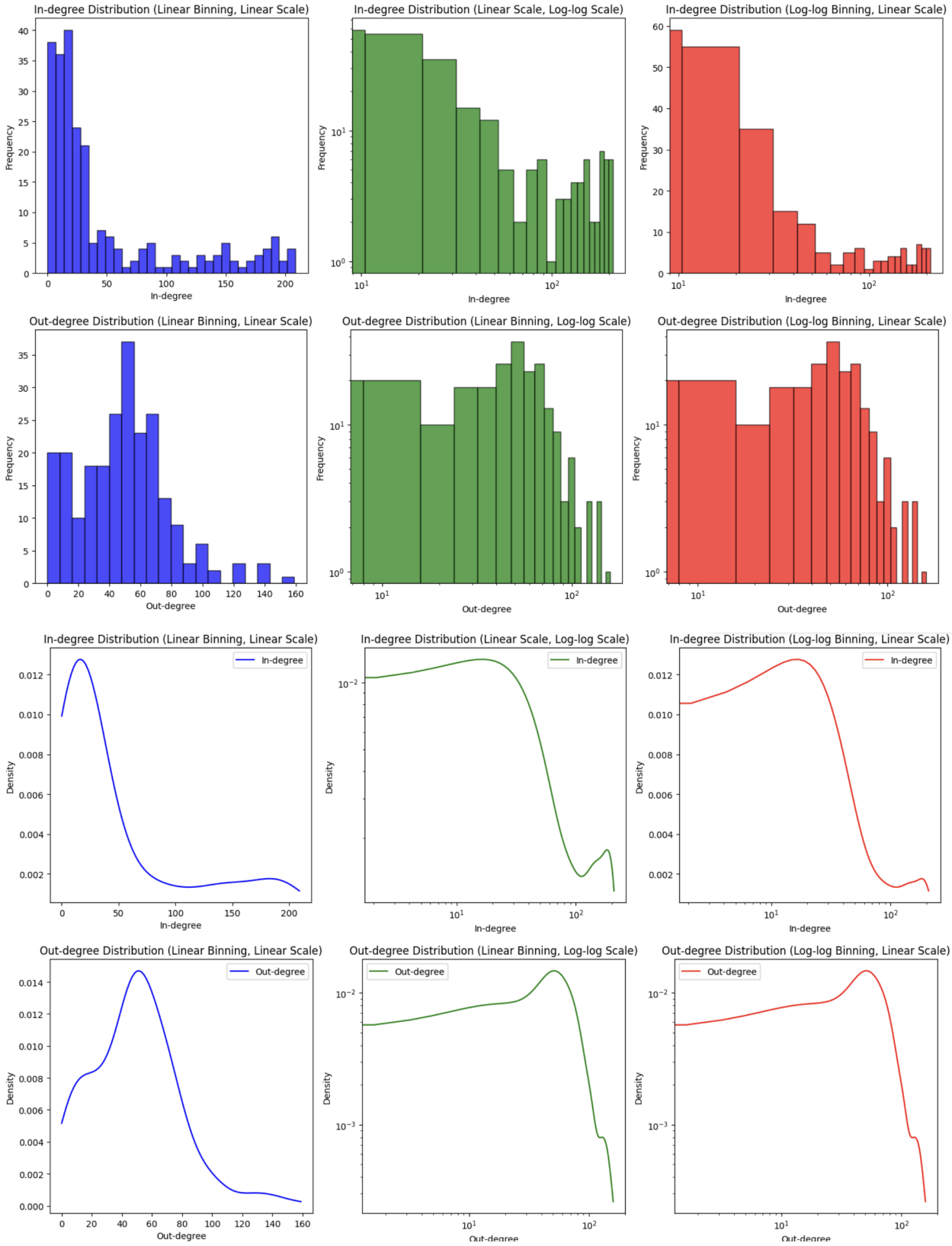

Degree Distribution of Migration Network
Frequency
10^1
10^0
0
50
100
150
200
250
300
350
Degree


Degree Distribution (Log-log Binning)
Frequency
10^1
10^0
10^0
10^1
10^2
Degree


In-degree Distribution (Linear Binning, Linear Scale)
In-degree Distribution (Linear Scale, Log-log Scale)
In-degree Distribution (Log-log Binning, Linear Scale)
Out-degree Distribution (Linear Binning, Linear Scale)
Out-degree Distribution (Linear Binning, Log-log Scale)
Out-degree Distribution (Log-log Binning, Linear Scale)
In-degree Distribution (Linear Binning, Linear Scale)
In-degree Distribution (Linear Scale, Log-log Scale)
In-degree Distribution (Log-log Binning, Linear Scale)
Out-degree Distribution (Linear Binning, Linear Scale)
Out-degree Distribution (Linear Binning, Log-log Scale)
Out-degree Distribution (Log-log Binning, Linear Scale)
Frequency
Density
In-degree
Out-degree
In-degree
Out-degree

```
In-Degree Poisson K-S Test: KS Statistic=0.6504096911742757, p-value=6.598641120996546e-99
Interpretation: The in-degree distribution does not fit well with a Poisson distribution.
Out-Degree Poisson K-S Test: KS Statistic=0.2907931243700583,p-value=2.5516454717679186e-18
Interpretation: The out-degree distribution does not fit well with a Poisson distribution.
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Calculating best minimal value for power law fit
In-Degree Power-Law Fit: Alpha=1.8180640003639703, Sigma=0.06330369291814548
Likelihood Ratio: -1.0147856921871963, p-value=0.8998191712203051
Interpretation: The in-degree distribution fits a Power-Law distribution better or as well as an exponential distributio
Calculating best minimal value for power law fit
Out-Degree Power-Law Fit: Alpha=5.46421455484419, Sigma=0.5811912312799086
Likelihood Ratio: 0.9609061884433752, p-value=0.4141547835945121
Interpretation: The out-degree distribution fits a Power-Law distribution better or as well as an exponential distributi
Values less than or equal to 0 in data. Throwing out 0 or negative values
Values less than or equal to 0 in data. Throwing out 0 or negative values
```

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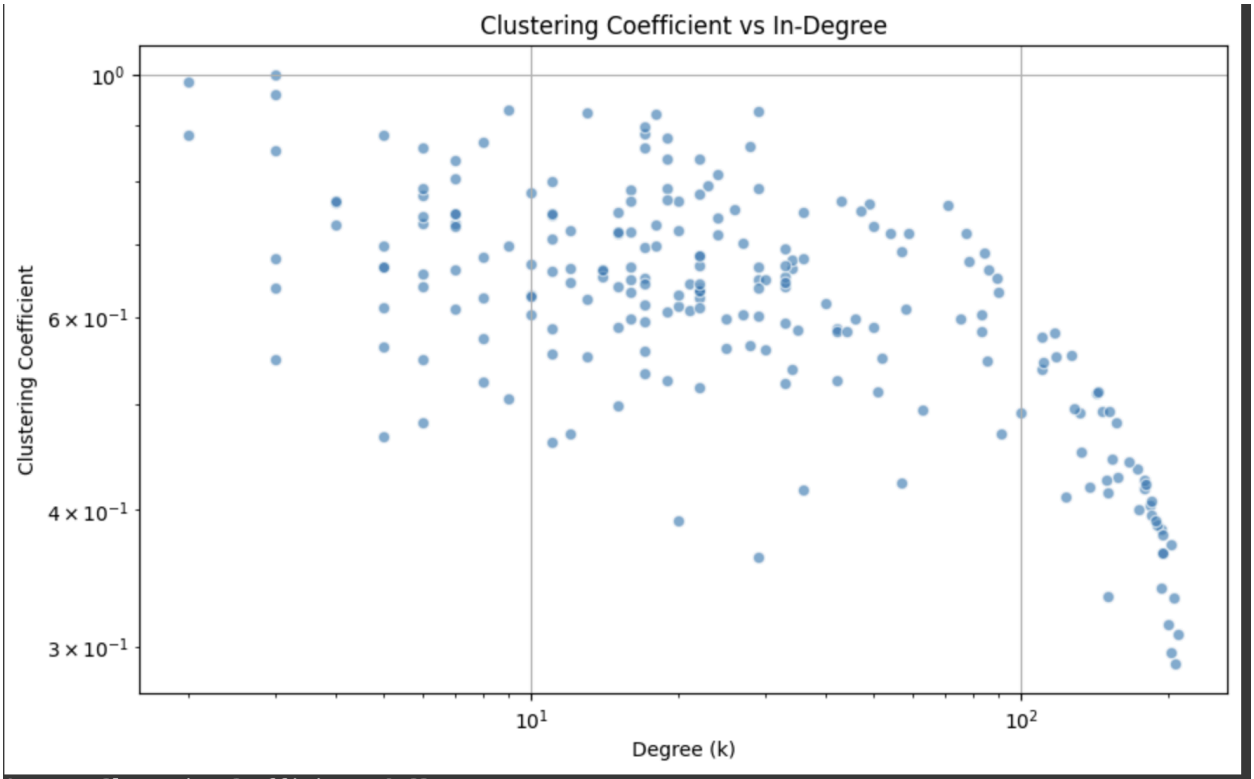
In-Degree Exponential K-S Test: KS Statistic=0.17774742494407952, p-value=4.7573948384904256e-07
Interpretation: The in-degree distribution does not fit well with an exponential distribution.
Out-Degree Exponential K-S Test: KS Statistic=0.22337454456543626, p-value=6.501484001241053e-11
Interpretation: The out-degree distribution does not fit well with an exponential distribution.
```

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Average Clustering Coefficient: 0.62
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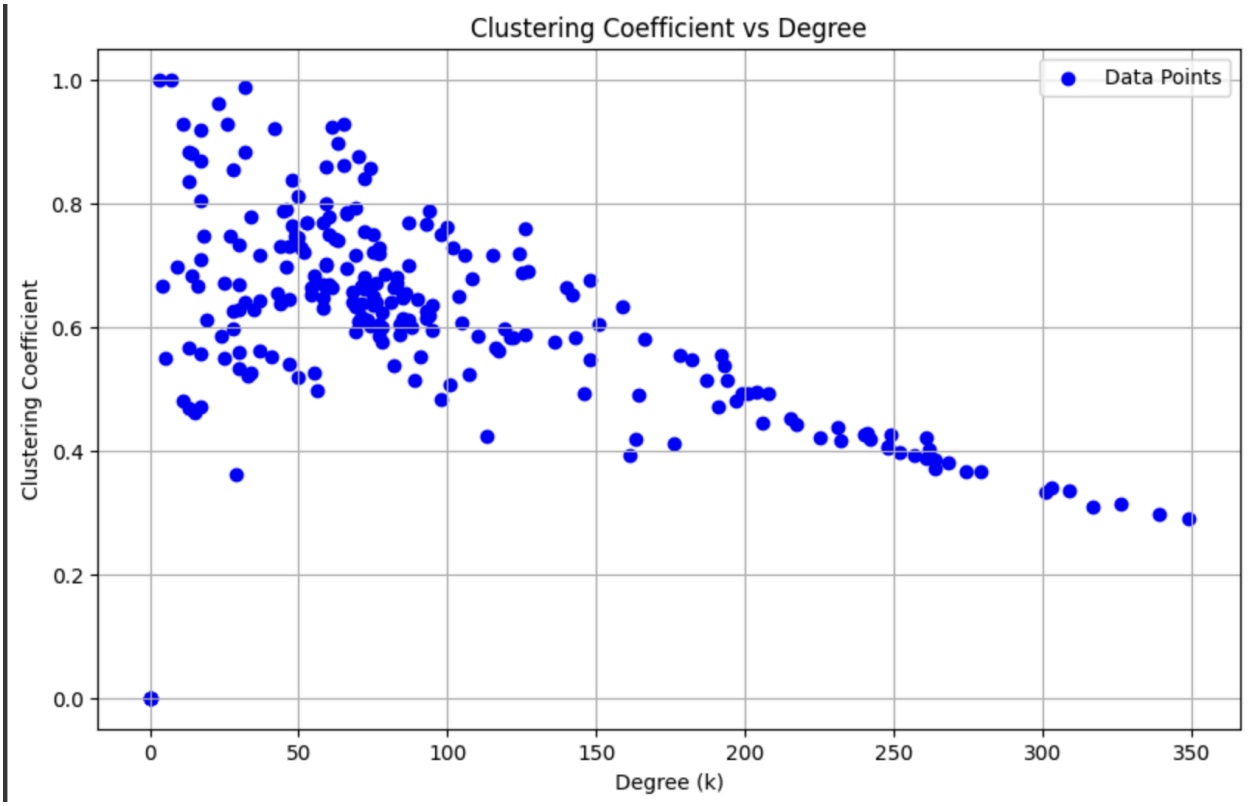


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Average Clustering Coefficient: 0.6363840458592064
Average Shortest Path Length: 1.8803050928891736
Average Clustering Coefficient (Random Graph): 0.2051047275648742
Average Shortest Path Length (Random Graph): 1.7950927206325569
The network does not exhibit small-world or ultra-small-world characteristics.
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Top 20 Countries by Betweenness Centrality:
            Country  Betweenness Centrality  Degree Centrality  \
70           France                0.076093           1.430380
215  United Kingdom                0.073724           1.472574
216   United States                0.056003           1.303797
11        Australia                0.054150           1.337553
36           Canada                0.049259           1.375527
100           Italy                0.025994           1.278481
143     Netherlands                0.025169           1.270042
169          Russia                0.023176           1.050633
190    South Africa                0.020790           0.978903
76          Germany                0.019033           1.101266
60            Egypt                0.017568           0.907173
162     Philippines                0.014956           0.805907
19          Belgium                0.014402           1.156118
193           Spain                0.012120           1.105485
198     Switzerland                0.011981           1.177215
28           Brazil                0.011510           1.016878
164        Portugal                0.011427           0.860759
208          Turkey                0.010720           0.814346
85           Guinea                0.010026           0.742616
93            India                0.009870           0.687764
```

Top 20 Countries by Degree Centrality:

	Country	Betweenness Centrality	Degree Centrality
215	United Kingdom	0.073724	1.472574
70	France	0.076093	1.430380
36	Canada	0.049259	1.375527
11	Australia	0.054150	1.337553
216	United States	0.056003	1.303797
100	Italy	0.025994	1.278481
143	Netherlands	0.025169	1.270042
198	Switzerland	0.011981	1.177215
19	Belgium	0.014402	1.156118
197	Sweden	0.007876	1.130802
153	Norway	0.007293	1.113924
12	Austria	0.006730	1.113924
193	Spain	0.012120	1.105485
55	Denmark	0.006615	1.101266
76	Germany	0.019033	1.101266
168	Romania	0.008581	1.084388
97	Ireland	0.006047	1.063291
169	Russia	0.023176	1.050633
91	Hungary	0.005418	1.046414
79	Greece	0.007586	1.046414

Top 20 Countries by Closeness Centrality:

	Country	Betweenness Centrality	De
11	Australia	0.054150	
215	United Kingdom	0.073724	
143	Netherlands	0.025169	
70	France	0.076093	
153	Norway	0.007293	
36	Canada	0.049259	
19	Belgium	0.014402	
197	Sweden	0.007876	
198	Switzerland	0.011981	
100	Italy	0.025994	
12	Austria	0.006730	
55	Denmark	0.006615	
168	Romania	0.008581	
91	Hungary	0.005418	
97	Ireland	0.006047	
79	Greece	0.007586	
117	Luxembourg	0.001430	
31	Bulgaria	0.004998	
69	Finland	0.003478	
193	Spain	0.012120	

	Closeness Centrality
11	0.888635
215	0.878056
143	0.871142
70	0.864336
153	0.860973
36	0.857636
19	0.841331
197	0.834981
198	0.834981
100	0.831842
12	0.831842
55	0.822565
168	0.819519
91	0.807555
97	0.804618
79	0.801703
117	0.793083
31	0.787438
69	0.787438
193	0.776386

Top 20 Countries by Eigenvector Centrality:

	Country	Betweenness Centrality	Degree Centrality	Closeness Centrality	Eigenvector Centrality
11	Australia	0.054150	1.337553	0.888635	0.149632
143	Netherlands	0.025169	1.270042	0.871142	0.148520
215	United Kingdom	0.073724	1.472574	0.878056	0.148365
70	France	0.076093	1.430380	0.864336	0.147531
153	Norway	0.007293	1.113924	0.860973	0.147528
36	Canada	0.049259	1.375527	0.857636	0.146928
12	Austria	0.006730	1.113924	0.831842	0.146727
19	Belgium	0.014402	1.156118	0.841331	0.145781
197	Sweden	0.007876	1.130802	0.834981	0.145055
91	Hungary	0.005418	1.046414	0.807555	0.144380
198	Switzerland	0.011981	1.177215	0.834981	0.144075
55	Denmark	0.006615	1.101266	0.822565	0.144026
100	Italy	0.025994	1.278481	0.831842	0.143998
168	Romania	0.008581	1.084388	0.819519	0.143500
31	Bulgaria	0.004998	1.021097	0.787438	0.143159