

Supplemental Material: Reciprocity supports cooperation in real-world economic interactions

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Table 1: Reciprocal Edge Classifications and Coefficients of Variation

Club	Orders	Members	Percent of Total Edges				Coefficient of Variation			
			DWR	DBR	IWR	IBR	DWR	DBR	IWR	IBR
1	59	23	0.71	0.12	0.03	0.03	28.77	78.05	120.88	147.78
2	11	10	0.65	0.00	0.06	0.00	73.43		331.66	
3	22	28	0.67	0.08	0.06	0.05	19.21	91.81	87.29	112.77
4	27	18	0.62	0.08	0.07	0.06	68.37	154.02	137.39	172.58
5	69	9	0.57	0.15	0.03	0.06	63.31	147.32	281.49	242.32
6	15	4	0.63	0.14	0.05	0.06	81.21	146.99	273.94	230.75
7	93	8	0.64	0.16	0.02	0.07	79.24	150.72	450.82	271.84
8	64	66	0.54	0.15	0.10	0.04	43.17	109.03	93.08	172.86
9	48	26	0.46	0.12	0.10	0.07	59.34	152.03	132.13	216.36
10	91	122	0.58	0.12	0.10	0.04	13.53	40.11	39.79	86.51
11	67	31	0.58	0.12	0.07	0.04	43.81	91.61	109.77	135.80
12	10	27	0.72	0.11	0.07	0.02	9.65	37.65	28.08	56.07
13	69	51	0.58	0.15	0.07	0.05	27.74	55.13	56.51	96.41
14	80	46	0.55	0.18	0.07	0.05	33.05	75.29	102.94	103.74
15	80	144	0.52	0.10	0.11	0.07	24.58	51.12	52.48	58.61
16	76	78	0.58	0.13	0.09	0.04	22.30	49.65	58.45	92.28
17	30	9	0.55	0.22	0.04	0.04	41.59	59.62	160.40	175.02
18	46	6	0.56	0.06	0.02	0.06	62.84	173.14	368.19	227.58
19	20	3	0.68	0.15	0.00	0.06	83.63	183.90		324.63
20	14	9	0.58	0.20	0.03	0.03	21.63	49.64	136.29	138.62
21	52	66	0.61	0.15	0.07	0.03	12.20	35.95	48.67	63.86
22	95	66	0.66	0.14	0.05	0.01	23.07	51.71	55.79	393.82
23	100	141	0.74	0.08	0.06	0.02	22.59	52.21	72.25	296.70
24	34	45	0.64	0.08	0.09	0.02	6.35	37.19	23.71	75.64
25	30	80	0.64	0.06	0.09	0.02	8.67	37.68	24.51	88.82
26	5	7	0.54	0.04	0.06	0.06	40.61	142.88	100.33	189.81
27	34	7	0.72	0.08	0.01	0.07	52.25	198.15	329.63	245.41
28	17	23	0.61	0.14	0.06	0.07	20.82	54.33	99.73	98.16
29	67	34	0.61	0.19	0.05	0.04	19.04	49.68	77.84	94.82
30	17	4	0.67	0.00	0.00	0.10	55.08			209.44
31	44	7	0.36	0.34	0.05	0.16	112.18	102.91	277.17	158.48
32	37	7	0.60	0.07	0.04	0.03	70.79	168.90	215.30	270.34
33	5	11	0.47	0.00	0.15	0.01	7.86		25.75	124.32
34	6	6	0.61	0.09	0.04	0.00	16.16	89.78	78.31	
35	62	16	0.44	0.03	0.11	0.01	19.25	90.96	61.45	296.87
Totals										
	1596	1238	0.60	0.12	0.06	0.05	39.64	94.04	136.73	171.79

Table 2: Mixed Effects Model

	<i>Dependent variable:</i>	
	All Edges	Out Degree Singular Assistance Edges
	(1)	(2)
Global Mean Intercept	25.936*** (9.869)	4.006*** (1.199)
In Degree	0.882*** (0.009)	0.457*** (0.011)
Random Effects:		
Clubs	35	13
Standard Deviation	36.36	6.71
Observations	1530	1702
REML	21098.26	8248.94
AIC	21106.26	8256.94
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table 3: SPR Cluster Centers

Club	Beneficiary	Reciprocator	Helper
1	-0.880	0	0.836
2	-0.742	0	0.783
3	-0.977	0	0.868
4	-1.160	0	0.905
5	-1.033	0	0.706
6	-0.805	0	0.766
7	-0.730	0	0.864
8	-1.033	0	1.037
9	-1.053	0	0.956
10	-1.403	0	0.816
11	-1.059	0	0.948
12	-1.707	0	0.467
13	-1.125	0	0.904
14	-1.062	0	0.873
15	-1.180	0	0.904
16	-1.083	0	0.871
17	-0.888	0	0.878
18	-0.904	0	0.761
19	-0.573	0	0.678
20	-0.970	0	0.707
21	-1.063	0	0.695
22	-0.885	0	0.745
23	-1.527	0	0.537
24	-0.999	0	0.688
25	-1.633	0	0.586
26	-0.981	0	0.798
27	-0.621	0	0.733
28	-0.922	0	0.731
29	-0.952	0	0.864
30	-1.134	0	0.505
31	-0.952	0	0.747
32	-0.920	0	0.709
33	-1.969	0	0.663
34	-0.761	0	0.847
35	-1.527	0	1.007

Table 4: Count of Member Types

Club	Beneficiaries	Reciprocators	Helpers	Unclassified*
1	0	21	2	4
2	2	8	0	2
3	3	22	3	7
4	1	14	3	9
5	1	7	1	1
6	1	3	0	10
7	2	6	0	4
8	7	49	10	11
9	3	19	4	6
10	9	87	26	25
11	3	22	6	6
12	3	19	5	3
13	3	35	13	13
14	5	31	10	10
15	16	97	31	46
16	13	52	13	11
17	1	6	2	3
18	1	4	1	11
19	0	2	1	5
20	1	6	2	1
21	11	43	12	2
22	5	47	14	6
23	10	85	46	41
24	5	27	13	6
25	3	48	29	16
26	1	4	2	3
27	0	4	3	2
28	5	13	5	6
29	3	19	12	5
30	0	2	2	1
31	1	3	3	1
32	1	3	3	3
33	1	4	6	8
34	1	2	3	2
35	2	4	10	2
Totals	124	818	296	292

Note:

* Members who only participate in one order do not have a Markov matrix and thus remain unclassified