

Supplementary material

6.1 Deliberative module

Table 10: Linear Regression in the Deliberative Model

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Confidence ratio	20.675*** (1.887)	34.732*** (2.180)	42.442*** (2.601)
Natural decay	0.345*** (0.019)	0.157*** (0.022)	0.391*** (0.026)
Initial pollution	0.049** (0.019)	0.010 (0.022)	0.052** (0.026)
Population	0.005 (0.019)	−0.035 (0.022)	−0.004 (0.027)
Variance signal	0.067*** (0.019)	−0.006 (0.022)	0.057** (0.026)
Variance threshold	0.033* (0.019)	−0.009 (0.022)	−0.007 (0.026)
Collapse recovery	−36.912*** (1.887)	−17.910*** (2.180)	−46.573*** (2.601)
Lake threshold	−0.490*** (0.019)	0.649*** (0.022)	−0.530*** (0.026)
Constant	55.387*** (2.747)	−3.759 (3.173)	43.275*** (3.786)
Observations	1,000	1,000	1,000
R ²	0.606	0.557	0.554
Adjusted R ²	0.603	0.553	0.550
Residual Std. Error (df = 991)	17.222	19.894	23.738
F Statistic (df = 8; 991)	190.517***	155.551***	153.704***

Note:

*p<0.1; **p<0.05; ***p<0.01

6.2 Affective module

Table 11: Linear Regression in the Affective module

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Natural decay	0.276*** (0.011)	0.669*** (0.083)	0.360*** (0.017)
Signal scarcity	1.275*** (0.118)	6.719*** (0.923)	1.803*** (0.193)
Initial pollution	0.009 (0.011)	-0.049 (0.083)	0.012 (0.017)
Population	-0.182*** (0.011)	-0.503*** (0.086)	-0.280*** (0.018)
Collapse recovery	-24.801*** (1.064)	-78.174*** (8.310)	-37.101*** (1.736)
Lake threshold	-0.313*** (0.011)	0.155* (0.084)	-0.507*** (0.018)
Constant	64.388*** (1.407)	41.747*** (10.991)	52.812*** (2.296)
Observations	1,000	1,000	1,000
R ²	0.713	0.198	0.675
Adjusted R ²	0.711	0.193	0.673
Residual Std. Error (df = 993)	9.713	75.848	15.843
F Statistic (df = 6; 993)	410.479***	40.914***	343.179***

Note:

*p<0.1; **p<0.05; ***p<0.01

6.3 Deliberative and affective module

Table 12: Linear Regression in the Deliberative+Affective model

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Confidence ratio	18.058*** (1.765)	30.046*** (2.136)	38.935*** (2.523)
Natural decay	0.369*** (0.018)	0.118*** (0.021)	0.420*** (0.025)
Signal scarcity	-0.088 (0.196)	0.070 (0.237)	0.029 (0.280)
Initial pollution	0.046*** (0.018)	0.006 (0.021)	0.049* (0.025)
Population	0.002 (0.018)	-0.033 (0.022)	-0.003 (0.026)
Variance signal	0.060*** (0.018)	-0.007 (0.021)	0.050** (0.025)
Variance threshold	0.026 (0.018)	-0.016 (0.021)	-0.006 (0.025)
Collapse recovery	-36.654*** (1.765)	-20.588*** (2.136)	-44.825*** (2.523)
Lake threshold	-0.474*** (0.018)	0.615*** (0.022)	-0.535*** (0.025)
Constant	56.371*** (2.785)	1.906 (3.370)	42.533*** (3.981)
Observations	1,000	1,000	1,000
R ²	0.633	0.534	0.564
Adjusted R ²	0.629	0.530	0.560
Residual Std. Error (df = 990)	16.114	19.495	23.031
F Statistic (df = 9; 990)	189.384***	126.016***	142.329***

Note:

*p<0.1; **p<0.05; ***p<0.01

6.4 Deliberative and Social module

Table 13: Linear Regression in the Deliberative+Social model

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Confidence ratio	14.161*** (1.926)	29.338*** (2.212)	39.824*** (2.548)
Natural decay	0.369*** (0.019)	0.131*** (0.022)	0.381*** (0.025)
Signal scarcity	0.034* (0.019)	0.019 (0.022)	0.040 (0.025)
Population	0.015 (0.020)	−0.041* (0.023)	0.007 (0.026)
Variance signal	0.106*** (0.019)	0.018 (0.022)	0.099*** (0.025)
Variance threshold	0.024 (0.019)	−0.013 (0.022)	−0.028 (0.025)
Collapse recovery	−35.292*** (1.926)	−10.561*** (2.213)	−42.274*** (2.549)
Lake threshold	−0.562*** (0.019)	0.620*** (0.022)	−0.509*** (0.026)
Network centralization	−4.296** (1.925)	3.953* (2.212)	−4.378* (2.548)
Network density	0.054 (0.120)	−0.070 (0.138)	0.104 (0.159)
Constant	57.875*** (3.111)	−4.767 (3.574)	39.278*** (4.117)
Observations	1,000	1,000	1,000
R ²	0.623	0.506	0.539
Adjusted R ²	0.620	0.501	0.535
Residual Std. Error (df = 989)	17.575	20.192	23.259
F Statistic (df = 10; 989)	163.697***	101.330***	115.819***

Note:

*p<0.1; **p<0.05; ***p<0.01

6.5 Affective and Social module

Table 14: Linear Regression in the Affective+Social model

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Natural decay	0.377*** (0.011)	0.443*** (0.048)	0.460*** (0.017)
Signal scarcity	0.564*** (0.127)	1.618*** (0.537)	0.758*** (0.186)
Initial pollution	0.008 (0.011)	0.050 (0.048)	0.011 (0.017)
Population	-0.118*** (0.012)	-0.348*** (0.050)	-0.186*** (0.017)
Collapse recovery	-24.271*** (1.142)	-32.177*** (4.833)	-27.922*** (1.678)
Lake threshold	-0.344*** (0.012)	0.262*** (0.049)	-0.583*** (0.017)
Network centralization	1.269 (1.142)	-0.999 (4.832)	1.020 (1.678)
Network density	0.270*** (0.071)	-0.366 (0.302)	0.560*** (0.105)
Constant	60.982*** (1.710)	31.395*** (7.237)	47.222*** (2.513)
Observations	1,000	1,000	1,000
R ²	0.722	0.181	0.705
Adjusted R ²	0.719	0.174	0.703
Residual Std. Error (df = 991)	10.425	44.109	15.314
F Statistic (df = 8; 991)	321.241***	27.376***	296.567***

Note:

*p<0.1; **p<0.05; ***p<0.01

6.6 Affective, Deliberative and Social module

Table 15: Linear Regression in the Affective+Deliberative+Social model

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Confidence ratio	18.027*** (1.765)	30.096*** (2.141)	38.905*** (2.517)
Natural decay	0.371*** (0.018)	0.122*** (0.021)	0.425*** (0.025)
Signal scarcity	-0.093 (0.196)	0.060 (0.238)	-0.004 (0.280)
Initial pollution	0.046*** (0.018)	0.014 (0.021)	0.049* (0.025)
Population	0.002 (0.018)	-0.051** (0.022)	-0.0003 (0.026)
Variance signal	0.061*** (0.018)	-0.005 (0.021)	0.053** (0.025)
Variance threshold	0.025 (0.018)	-0.025 (0.021)	-0.009 (0.025)
Collapse recovery	-36.481*** (1.765)	-18.036*** (2.142)	-44.775*** (2.518)
Lake threshold	-0.475*** (0.018)	0.620*** (0.022)	-0.536*** (0.025)
Network centralization	-0.464 (1.765)	-1.860 (2.141)	-1.081 (2.517)
Network density	0.063 (0.110)	0.006 (0.134)	0.155 (0.157)
Constant	55.979*** (3.048)	2.051 (3.698)	41.591*** (4.347)
Observations	1,000	1,000	1,000
R ²	0.633	0.533	0.567
Adjusted R ²	0.629	0.528	0.562
Residual Std. Error (df = 988)	16.111	19.546	22.975
F Statistic (df = 11; 988)	155.214***	102.608***	117.745***

Note:

*p<0.1; **p<0.05; ***p<0.01

6.7 ADS: Polynomial regression of order 2

Table 16: Polynomial Regression of order 2 in the Affective+Deliberative+Social model

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Confidence ratio	−67.155*** (6.643)	5.501 (8.822)	−29.390*** (9.289)
Confidence ratio ²	81.257*** (6.439)	23.947*** (8.551)	69.144*** (9.003)
Natural decay	0.590*** (0.066)	−0.001 (0.088)	0.596*** (0.093)
Natural decay ²	−0.002*** (0.001)	0.001 (0.001)	−0.002** (0.001)
Signal scarcity	1.055 (0.893)	−0.513 (1.186)	0.458 (1.249)
Signal scarcity ²	−0.082 (0.079)	0.035 (0.106)	−0.052 (0.111)
Initial pollution	0.078 (0.066)	0.066 (0.088)	0.144 (0.093)
Initial pollution ²	−0.0004 (0.001)	−0.0005 (0.001)	−0.001 (0.001)
Population	0.048 (0.072)	−0.002 (0.096)	0.082 (0.101)
Population ²	−0.0003 (0.001)	−0.0004 (0.001)	−0.001 (0.001)
Variance signal	0.235*** (0.066)	−0.106 (0.088)	0.198** (0.093)
Variance signal ²	−0.001** (0.001)	0.001 (0.001)	−0.001 (0.001)
Variance threshold	0.051 (0.067)	−0.023 (0.088)	0.035 (0.093)
Variance threshold ²	−0.0003 (0.001)	0.0001 (0.001)	−0.001 (0.001)

Note:

*p<0.1; **p<0.05; ***p<0.01

<i>Dependent variable:</i>	Awareness (%)	Pollution	Polluted Lake (%)
Collapse recovery	−120.244*** (6.655)	−7.452 (8.838)	−149.732*** (9.305)
Collapse recovery ²	84.884*** (6.444)	−3.130 (8.558)	107.417*** (9.010)
Lake threshold	−0.629*** (0.068)	0.697*** (0.091)	−0.479*** (0.096)
Lake threshold ²	0.001 (0.001)	−0.001 (0.001)	−0.0003 (0.001)
Network centralization	−10.302 (6.638)	−8.682 (8.815)	−13.149 (9.281)
Network centralization ²	6.161 (6.435)	12.631 (8.546)	8.899 (8.997)
Network density	0.002 (0.415)	−0.341 (0.551)	−0.523 (0.580)
Network density ²	0.004 (0.025)	0.017 (0.033)	0.040 (0.035)
Constant	77.530*** (4.866)	4.573 (6.462)	61.430*** (6.803)
Observations	1,000	1,000	1,000
R ²	0.723	0.514	0.622
Adjusted R ²	0.717	0.503	0.613
Residual Std. Error (df = 977)	15.169	20.145	21.209
F Statistic (df = 22; 977)	115.829***	47.034***	72.963***
<i>Note:</i>		*p<0.1; **p<0.05; ***p<0.01	

6.8 ADS: correlation between network layers

Table 17

	<i>Dependent variable:</i>		
	Awareness (%)	Pollution	Polluted Lake (%)
	(1)	(2)	(3)
Correlation	−6.955*** (1.909)	−1.166 (2.146)	−4.329* (2.369)
Confidence Ratio	0.914 (1.908)	28.714*** (2.145)	26.555*** (2.368)
Natural Decay	0.371*** (0.019)	0.127*** (0.021)	0.376*** (0.024)
Signal Scarcity	0.017 (0.212)	0.207 (0.238)	0.299 (0.263)
Initial_pollution	0.025 (0.019)	0.008 (0.021)	0.022 (0.024)
Population	−0.047** (0.020)	−0.012 (0.022)	−0.056** (0.024)
Variance_signal	0.096*** (0.019)	0.030 (0.021)	0.082*** (0.024)
Variance_threshold	0.023 (0.019)	−0.036* (0.021)	−0.002 (0.024)
Collapse_recovery	−33.201*** (1.909)	−10.179*** (2.146)	−36.142*** (2.369)
Lake_threshold	−0.645*** (0.019)	0.540*** (0.022)	−0.640*** (0.024)
Network centralization	−3.544* (1.908)	1.054 (2.145)	−2.683 (2.368)
Reach	−0.483*** (0.119)	−0.412*** (0.134)	−0.451*** (0.148)
Constant	75.014*** (3.440)	0.002 (3.867)	53.118*** (4.269)
Observations	1,000	1,000	1,000
R ²	0.655	0.470	0.580
Adjusted R ²	0.651	0.464	0.575
Residual Std. Error (df = 987)	17.419	19.582	21.616
F Statistic (df = 12; 987)	156.244***	72.945***	113.708***

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 18

	<i>Dependent variable:</i>		
	Awareness (%)	Pollution	Polluted Lake (%)
	(1)	(2)	(3)
Correlation $\times$ Network centralization	2.184 (4.973)	2.510 (5.604)	4.949 (6.185)
Correlation $\times$ Network density	−1.005*** (0.310)	−0.377 (0.350)	−0.767** (0.386)
Confidence_ratio	0.898 (1.904)	28.710*** (2.145)	26.547*** (2.367)
Natural_decay	0.371*** (0.019)	0.128*** (0.021)	0.376*** (0.024)
Signal scarcity	0.018 (0.211)	0.208 (0.238)	0.300 (0.263)
Initial_pollution	0.025 (0.019)	0.008 (0.021)	0.022 (0.024)
Population	−0.048** (0.020)	−0.012 (0.022)	−0.056** (0.024)
Variance_signal	0.096*** (0.019)	0.030 (0.021)	0.082*** (0.024)
Variance_threshold	0.023 (0.019)	−0.036* (0.021)	−0.002 (0.024)
collapse_recovery	−33.230*** (1.904)	−10.188*** (2.146)	−36.163*** (2.368)
Lake_threshold	−0.645*** (0.019)	0.540*** (0.022)	−0.640*** (0.024)
Network centralization	−4.607 (3.122)	−0.189 (3.518)	−5.131 (3.882)
Network density	0.021 (0.196)	−0.223 (0.221)	−0.066 (0.243)
Constant	71.536*** (3.288)	−0.578 (3.705)	50.929*** (4.089)
Observations	1,000	1,000	1,000
R ²	0.657	0.471	0.581
Adjusted R ²	0.653	0.464	0.575
Residual Std. Error (df = 986)	17.375	19.580	21.609
F Statistic (df = 13; 986)	145.421***	67.434***	105.160***

Note:

*p<0.1; **p<0.05; ***p<0.01