

Figure 1. Registrations of fixed-line telephone numbers from (a) Illinois; (b) Massachusetts; and (c) Texas

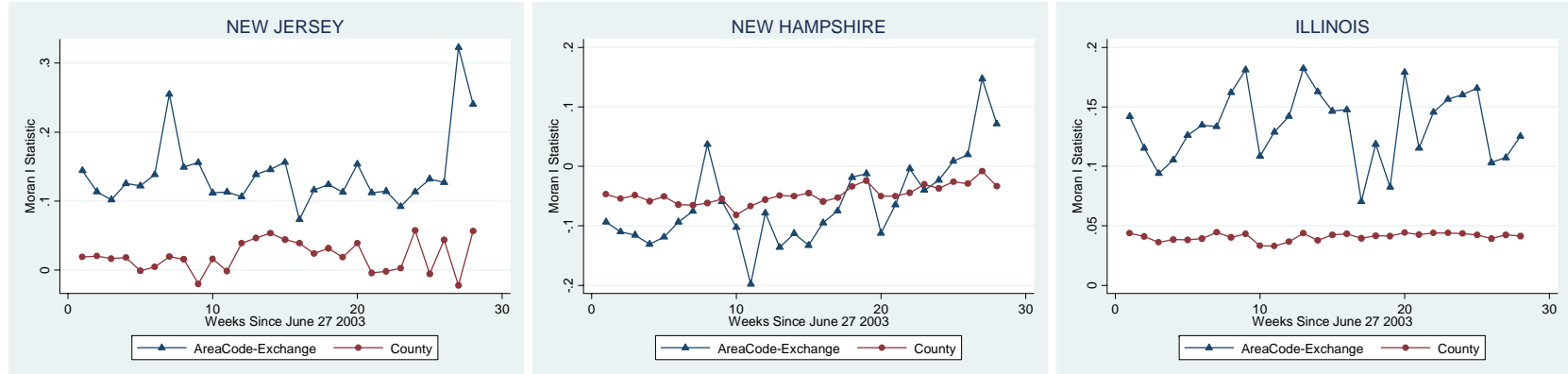


Figure 2. Spatial autocorrelations in (a) New Jersey; (b) New Hampshire; and (c) Illinois

Table 1. Descriptive statistics

	Variable	Source	Mean	Std Dev	Min	Max
1	Weekly registration	FTC	2,898.50	9,762.54	2.00	239,771.50
2	Initial market potential (M_{t0} ; in thousands) ^a	calculated	204.46	477.15	1.70	5,749.47
3	Lagged cumulative registrations (as a proportion of total market potential)	calculated	0.09	0.06	0.00	0.39
4	Population density	Census	0.54	1.26	0.00	13.04
5	Average number of people in a household	Census	2.64	0.20	2.07	3.69
6	Median household income (in thousand \$)	Census	40.81	9.96	21.52	81.05
7	Percentage of people who were economically active	Census	0.77	0.02	0.70	0.84
8	Percentage of people above 16 years old who were employed	Census	0.96	0.01	0.91	0.99
9	Percentage of people below 65 years old	Census	0.87	0.03	0.74	1.00
10	Percentage of households with female head	Census	0.11	0.04	0.04	0.28
11	Percentage of people above 25 years old who received at least high school education	Census	0.81	0.07	0.52	0.94
12	Percentage of people who were linguistically isolated	Census	0.02	0.02	0.00	0.17
13	Percentage of households who owned the housing units in which they lived	Census	0.72	0.09	0.31	0.88
14	Social interaction frequency (formal) ^b	Saguaro	0.05	1.02	-1.14	5.89
15	Social interaction frequency (informal) ^b	Saguaro	0.03	0.98	-1.85	3.69
16	Weekly newspaper circulation (in thousands)	ABC	0.31	0.11	0.02	0.67
17	Newspaper reports of DNC (weighted by weekly circulation; in thousands) ^c	Google	0.58	1.46	0.00	17.01
18	Newspaper reports of <i>number</i> of DNC registrations (weighted by weekly circulation; in thousands) ^c	Google	0.13	0.50	0.00	10.93
19	Economic heterogeneity ^d	calculated	0.24	0.92	-2.31	2.50
20	Social heterogeneity ^d	calculated	0.14	0.84	-3.47	2.44

^a Please refer to the Appendix for formula.

^b From the Social Capital Community Benchmark Survey – see <http://www.hks.harvard.edu/saguaro/communitysurvey/index.html>. We derived the measure of social interaction frequency in a *formal* setting by using the factor scores obtained from a principal-component analysis of Questions 33, 35, 56E and 56L. This measure has a direct correspondence to the computed variable MACHER that is operationalized identically in the Saguaro data set. Similarly, we derived social interaction frequency in an *informal* setting by using the factor scores obtained from a principal-component analysis of Questions 56F, 56D, 56H, 56I and 56C. This measure also corresponds directly to the computed variable SCHMOOZ which is operationalized identically. Both the MACHER and SCHMOOZ measures were recommended by the Saguaro documentation to be used as measures of social interaction frequencies.

^c For each county, we multiplied the number of newspaper articles that reported the “do not call” registry (or the number of telephone numbers on the registry) by the corresponding weekly circulation.

^d We computed economic heterogeneity by using the factor scores obtained from a principal-component analysis of income, race, and education heterogeneity. We computed social heterogeneity by using the factor scores obtained from a principal-component analysis of religion and age heterogeneity.

Table 2. Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.00																			
2	0.61	1.00																		
3	-0.18	-0.04	1.00																	
4	0.25	0.42	-0.02	1.00																
5	0.00	0.02	-0.08	-0.07	1.00															
6	0.20	0.29	0.10	0.20	0.27	1.00														
7	-0.10	-0.15	-0.15	-0.19	0.31	-0.47	1.00													
8	0.00	-0.03	0.15	-0.13	-0.13	0.47	-0.31	1.00												
9	0.12	0.18	0.02	0.18	0.58	0.46	-0.27	-0.04	1.00											
10	0.08	0.13	-0.08	0.31	0.08	-0.29	0.19	-0.53	0.17	1.00										
11	0.09	0.12	0.15	0.00	-0.04	0.59	-0.59	0.39	0.23	-0.53	1.00									
12	0.18	0.32	-0.12	0.41	0.36	0.13	0.13	-0.30	0.24	0.18	-0.21	1.00								
13	-0.16	-0.27	0.03	-0.58	0.13	0.11	0.30	0.36	-0.23	-0.42	-0.04	-0.34	1.00							
14	0.01	0.01	0.00	-0.01	0.02	0.05	-0.06	0.02	0.08	-0.07	0.08	0.02	-0.01	1.00						
15	-0.01	-0.01	0.03	-0.04	0.07	-0.01	0.01	-0.03	0.02	-0.09	0.06	0.01	0.03	0.29	1.00					
16	0.13	0.19	0.14	0.16	0.05	0.39	-0.22	0.11	0.12	-0.06	0.32	0.08	-0.14	0.08	0.03	1.00				
17	0.18	0.14	-0.16	0.24	0.01	0.23	-0.17	0.07	0.17	0.08	0.06	0.03	-0.09	0.03	-0.05	0.10	1.00			
18	0.08	0.07	-0.23	0.08	0.04	0.10	-0.06	0.04	0.09	0.04	0.02	0.01	-0.02	0.00	0.00	0.06	0.66	1.00		
19	0.15	0.26	-0.09	0.34	0.10	-0.15	0.13	-0.48	0.24	0.69	-0.36	0.47	-0.55	-0.08	-0.06	-0.02	0.07	0.04	1.00	
20	0.07	0.10	0.01	0.06	0.46	0.20	-0.07	-0.14	0.38	0.19	0.09	0.32	-0.12	0.03	0.05	0.20	0.07	0.04	0.10	1.00

Note: Variable names are reported in Table 1.

Table 3. Factor loadings

Variable	Factor 1	Factor 2
Income heterogeneity	0.699	
Race heterogeneity	0.847	
Education heterogeneity	0.864	
Religion heterogeneity		0.580
Age heterogeneity		0.810

Note: only loadings with absolute value > 0.4 are reported.

Table 4. Random-effects model estimation

	(i)	(ii)	(iii)	(iv)	(v)
Social interaction frequency (formal)					-0.008 (0.015)
Social interaction frequency (informal)					0.025 (0.015)
Social interaction freq. (formal) × lagged cumulative registration rate					0.240** (0.118)
Social interaction freq. (informal) × lagged cumulative registration rate					-0.217 (0.127)
Weekly newspaper circulation		0.866*** (0.254)		0.853*** (0.254)	
Lagged newspaper reports of DNC, weighted by circulation				0.014*** (0.004)	
Lagged newspaper reports of <i>number of</i> DNC registrations, weighted by circulation					
Economic heterogeneity					
Social heterogeneity					
Economic heterogeneity × lagged newspaper reports of <i>number of</i> DNC registrations, weighted by circulation					
Social heterogeneity × lagged newspaper reports of <i>number of</i> DNC registrations, weighted by circulation					
Lagged cumulative registration rate			6.368*** (0.247)		6.487*** (0.242)
Average number of people in a household	-0.505 (0.260)	-0.495 (0.257)	-0.465** (0.215)	-0.497 (0.257)	-0.462** (0.214)
Percentage of people who were economically active	5.426** (2.600)	5.302** (2.580)	4.231** (2.001)	5.518** (2.611)	4.141** (1.989)
Percentage of people above 25 years old with at least high school education	4.404*** (0.855)	4.232*** (0.846)	4.385*** (0.617)	4.310*** (0.853)	4.355*** (0.617)
Percentage of people who were linguistically isolated	3.182 (1.991)	3.204 (1.963)	3.618** (1.501)	3.348 (1.959)	3.563** (1.487)
Other demographic variables, state and week dummies	included	included	included	included	included
Week dummy interactions with newspaper circulation, economic heterogeneity, social heterogeneity, and demographic variables	included	included	included	included	included
Overall R^2	0.798	0.804	0.879	0.804	0.880

Notes:

1. *** $p < 0.01$; ** $p < 0.05$; robust standard errors are reported in parentheses.2. Dependent variable: $\log(r_{jt}) - \log\left(M_{j0} - \sum_{k=1}^t r_{jk}\right)$

Table 4 – continued

	(vi)	(vii)	(viii)	(ix)
Social interaction frequency (formal)	-0.015 (0.015)			-0.018 (0.015)
Social interaction frequency (informal)	0.025 (0.015)			0.026 (0.015)
Social interaction freq. (formal) × lagged cumulative registration rate	0.296** (0.116)			0.304*** (0.116)
Social interaction freq. (informal) × lagged cumulative registration rate	-0.217 (0.126)			-0.236 (0.126)
Weekly newspaper circulation	0.862*** (0.245)	0.876*** (0.254)	0.928*** (0.256)	0.889*** (0.249)
Lagged newspaper reports of DNC, weighted by circulation	0.015*** (0.005)	0.021*** (0.005)	0.024*** (0.005)	0.020*** (0.005)
Lagged newspaper reports of <i>number</i> of DNC registrations, weighted by circulation		-0.029** (0.013)	-0.048*** (0.017)	-0.015 (0.026)
Economic heterogeneity			0.031 (0.059)	0.038 (0.050)
Social heterogeneity			-0.043 (0.044)	-0.007 (0.042)
Economic heterogeneity × lagged newspaper reports of <i>number</i> of DNC registrations, weighted by circulation			0.021 (0.017)	-0.012 (0.023)
Social heterogeneity × lagged newspaper reports of <i>number</i> of DNC registrations, weighted by circulation			0.004 (0.020)	0.006 (0.027)
Lagged cumulative registration rate	6.542*** (0.245)			6.541*** (0.243)
Average number of people in a household	-0.477** (0.214)	-0.489 (0.256)	-0.403 (0.263)	-0.481** (0.222)
Percentage of people who were economically active	4.094** (2.017)	5.477** (2.607)	4.911 (2.657)	4.056** (2.060)
Percentage of people above 25 years old with at least high school education	4.227*** (0.621)	4.284*** (0.854)	4.172*** (0.849)	4.094*** (0.612)
Percentage of people who were linguistically isolated	3.812** (1.502)	3.292 (1.967)	3.054 (1.996)	3.342** (1.651)
Other demographic variables, state and week dummies	included	included	included	included
Week dummy interactions with newspaper circulation, economic heterogeneity, social heterogeneity, and demographic variables	included	included	included	included
Overall R^2	0.883	0.804	0.808	0.886

Note:

- *** $p < 0.01$; ** $p < 0.05$; robust standard errors are reported in parentheses.

Table 5. Relative contribution to registration – specification (ix)

Comparison relative to intrinsic factors	$s.d.(\bar{z}'_j \alpha) / s.d.(\bar{x}'_j \beta + u_j + v_{jt})$
External factors, including: <ul style="list-style-type: none">• social interaction/peer influence with general contagion,• newspaper circulation and reports, and• observational learning	0.066
External factors, including: <ul style="list-style-type: none">• social interaction/peer influence with general contagion,• newspaper circulation and reports,• observational learning and impact of heterogeneity	0.068
Social interaction/peer influence with general contagion	0.078
Newspaper circulation reports	0.029
Observational learning	0.001
Observational learning and impact of heterogeneity	0.017

Table 6. Robustness checks

	(a)	(b)	(c)	(d)
Social interaction frequency (formal)		-0.017 (0.015)	-0.025 (0.014)	-0.019 (0.016)
Social interaction frequency (informal)	0.033** (0.016)	0.026 (0.015)	-0.001 (0.016)	0.021 (0.016)
Social interaction frequency (organized group)	-0.031** (0.013)			
Social interaction freq. (formal) × lagged cumulative registration rate		0.301*** (0.116)	0.366*** (0.118)	0.310** (0.129)
Social interaction freq. (informal) × lagged cumulative registration rate	-0.283** (0.133)	-0.233 (0.126)	-0.035 (0.135)	-0.205 (0.137)
Social interaction freq. (organized group) × lagged cumulative registration rate	0.352*** (0.116)			
Weekly newspaper circulation	0.881*** (0.248)	0.893*** (0.248)	0.615*** (0.213)	0.925*** (0.189)
Lagged newspaper reports of DNC, weighted by circulation	0.020*** (0.005)		0.019*** (0.005)	0.024*** (0.007)
Lagged newspaper reports of <i>number</i> of DNC registrations, weighted by circulation	-0.016 (0.026)		-0.010 (0.029)	-0.025 (0.021)
Newspaper reports of DNC, weighted by circulation		0.022*** (0.006)		
Newspaper reports of <i>number</i> of DNC registrations, weighted by circulation		-0.018 (0.019)		
Economic heterogeneity	0.038 (0.050)	0.032 (0.048)	0.046 (0.049)	0.028 (0.041)
Social heterogeneity	-0.005 (0.042)	-0.005 (0.039)	0.008 (0.052)	-0.017 (0.031)
Economic heterogeneity × lagged newspaper reports of <i>number</i> of DNC registrations, weighted by circulation	-0.010 (0.023)	-0.036 (0.019)	-0.009 (0.025)	0.009 (0.018)
Social heterogeneity × lagged newspaper reports of <i>number</i> of DNC registrations, weighted by circulation	0.005 (0.027)	-0.019 (0.026)	-0.007 (0.030)	0.002 (0.022)
Lagged cumulative registration rate	6.521*** (0.245)	6.551*** (0.242)	7.341*** (0.232)	5.953*** (0.266)
Average number of people in a household	-0.516** (0.222)	-0.481** (0.222)	-0.227 (0.254)	-0.453** (0.182)
Percentage of people who were economically active	4.304** (2.038)	3.990** (2.036)	2.108 (2.211)	3.709** (1.514)
Percentage of people above 25 years old with at least high school education	4.081*** (0.610)	4.117*** (0.615)	4.054*** (0.621)	3.795*** (0.522)
Percentage of people who were linguistically isolated	3.329** (1.650)	3.473** (1.648)	3.105 (1.683)	3.005** (1.372)
Other demographic variables, state and week dummies	included	included	included	included

Week dummy interactions with newspaper circulation, economic heterogeneity, social heterogeneity, and demographic variables	included	included	included	included
Overall R^2	0.886	0.886	0.907	0.882

Notes:

1. *** $p < 0.01$; ** $p < 0.05$; robust standard errors are reported in parentheses.

2. Dependent variable: $\log(r_{jt}) - \log\left(M_{j0} - \sum_{k=1}^t r_{jk}\right)$

3. For specification (a), instead of using social interaction frequency in a *formal* setting, we derived the measure of social interaction frequency in an *organized group* setting by using the factor scores obtained from a principal-component analysis of Questions 56L, 56E and 56A. This measure has a direct correspondence to the computed variable ORGINTER operationalized identically in the Saguaro data set.

4. For specification (c), sample size = 2,790.

5. An auto-regressive $AR(1)$ error structure was specified for specification (d).