

Online Appendix

A note on geographic measurement and location

In this work we often make use of metric space, and rather than focus on great circle distance (Okabe 1992) we project into one of the popular map projections from the larger field of geography. There is a robust literature on selecting the correct projection for given circumstances (Chang 2006) – in this case we use the Web Mercator projection (its official European Petroleum Survey Group designator is EPSG:3857) which is popular with common GIS applications like google maps – all maps are plotted with this projection.

Neighborhood Diffusion Tables

	Q1	Q2	Q3	Q4	Sum
Bayview Hunters Point	194	160	155	152	661
Bernal Heights	33	26	13	24	96
Castro/Upper Market	16	9	18	17	60
Chinatown	15	10	9	7	41
Excelsior	12	8	10	8	38
Financial District/South Beach	120	112	111	131	474
Glen Park	15	8	8	10	41
Golden Gate Park	14	5	10	4	33
Haight Ashbury	5	8	8	12	33
Hayes Valley	7	8	6	3	24
Inner Richmond	6	0	2	3	11
Inner Sunset	7	10	8	10	35
Japantown	3	3	0	2	8
Lakeshore	8	6	10	4	28
Lincoln Park	3	0	0	3	6
Lone Mountain/USF	5	4	5	2	16
Marina	1	2	1	1	5
McLaren Park	21	20	16	10	67
Mission	67	59	80	61	267
Mission Bay	96	91	95	105	387
Nob Hill	17	11	13	19	60
Noe Valley	16	13	19	14	62
North Beach	23	23	16	16	78
Oceanview/Merced/Ingleside	4	5	1	2	12
Outer Mission	4	6	8	7	25
Outer Richmond	6	11	3	4	24
Pacific Heights	3	4	0	6	13
Portola	28	16	18	14	76
Potrero Hill	50	36	56	35	177
Presidio	9	4	6	4	23
Presidio Heights	2	1	2	1	6
Russian Hill	9	9	9	9	36
Seacliff	1	0	0	1	2
South of Market	173	129	145	121	568
Sunset/Parkside	5	12	9	6	32
Tenderloin	67	59	73	53	252
Twin Peaks	7	4	3	3	17
Visitacion Valley	18	24	17	17	76
West of Twin Peaks	11	7	7	5	30
Western Addition	9	11	5	7	32

Table 3. Quartile table of diffusion pattern within the simulated homeless network and their location in relationship to the neighborhoods within the City of San Francisco (not including Treasure Island).

	Q1	Q2	Q3	Q4	Sum
Bayview Hunters Point	73	54	56	35	218
Bernal Heights	8	8	7	6	29
Castro/Upper Market	8	8	4	6	26
Chinatown	1	2	0	2	5
Excelsior	3	4	1	1	9
Financial District/South Beach	40	27	28	30	125
Glen Park	8	5	4	4	21
Golden Gate Park	11	5	3	3	22
Haight Ashbury	5	2	4	2	13
Hayes Valley	6	4	2	4	16
Inner Richmond	0	1	1	0	2
Inner Sunset	7	5	3	1	16
Japantown	2	0	2	0	4
Lakeshore	2	0	3	0	5
Lincoln Park	1	2	0	0	3
Lone Mountain/USF	3	1	0	1	5
Marina	0	0	0	0	0
McLaren Park	5	7	1	5	18
Mission	29	21	18	15	83
Mission Bay	29	33	26	25	113
Nob Hill	5	1	1	2	9
Noe Valley	10	8	10	4	32
North Beach	5	2	2	0	9
Oceanview/Merced/Ingleside	0	0	0	1	1
Outer Mission	3	2	0	2	7
Outer Richmond	10	5	3	2	20
Pacific Heights	3	1	1	1	6
Portola	10	15	3	10	38
Potrero Hill	20	18	8	9	55
Presidio	0	1	0	1	2
Presidio Heights	0	0	0	1	1
Russian Hill	2	1	0	1	4
Seacliff	0	0	0	0	0
South of Market	49	22	32	25	128
Sunset/Parkside	4	0	2	2	8
Tenderloin	27	17	14	19	77
Twin Peaks	3	3	1	2	9
Visitacion Valley	12	10	4	6	32
West of Twin Peaks	0	2	0	1	3
Western Addition	5	6	4	5	20

Table 4. Quartile table of diffusion pattern within the simulated youth Facebook homeless network and their location in relationship to the neighborhoods within the City of San Francisco (not including Treasure Island).

References

Chang KT (2006) *Geographic information system*. Wiley Online Library.

Okabe A (1992) *Spatial tessellations*. Wiley Online Library.