

Using Google Street View to Audit Neighborhood Environments

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Appendix A

Percentage agreement between field audit and Street View measures (categorical measures only)

Variable description	% agree feature is absent	% agree feature is present	Total % agreement
Aesthetics			
Public art	0.97	0.00	0.97
Block composed of similar buildings	0.24	0.54	0.78
Buildings are ornate/decorative	0.68	0.05	0.73
Building have modern/postwar characteristics	0.03	0.46	0.49
Buildings are plain	0.05	0.76	0.81
Street-level windows are fully or partially obscured	0.22	0.19	0.41
Prewar buildings	0.22	0.03	0.24
At least 90% of sidewalk bounded by a street wall	0.08	0.81	0.89
Physical disorder			
Stray animals present ^a	0.92	0.00	0.92
Building awnings torn	0.72	0.00	0.72
Beer, wine, or liquor bottles present ^{a,b}	0.50	0.08	0.58
Presence of an abandoned building	0.62	0.08	0.70
Buildings in disrepair	0.68	0.03	0.70
Presence of overflowing trash cans ^a	0.54	0.05	0.59
Abandoned cars	0.83	0.03	0.86
Discarded cigarette or cigar butts ^{a,b}	0.03	0.69	0.72
Discarded drug-related paraphernalia on street ^{a,b}	0.90	0.00	0.90
Graffiti on buildings	0.54	0.14	0.68
Discarded household belongings on street ^a	0.49	0.05	0.54
Pools of water on sidewalk ^a	0.47	0.03	0.50
Sidewalk in serious disrepair	0.81	0.00	0.81
Building signage in disrepair	0.53	0.00	0.53
Food-related trash on the sidewalk ^{a,b}	0.31	0.22	0.53
Other garbage or litter on the street ^{a,b}	0.08	0.59	0.68
Broken windows on buildings ^b	0.73	0.03	0.76
Pedestrian safety			
First intersection: speed bump	1.00	0.00	1.00
First intersection: chicane	0.36	0.00	0.36
First intersection: choker	1.00	0.00	1.00
First intersection: traffic island	0.86	0.05	0.92
First intersection: pedestrian overpass	0.95	0.00	0.95
First intersection: painted crosswalk	0.03	0.89	0.92
First intersection: pedestrian crossing	0.03	0.84	0.86
First intersection: curb extension	0.97	0.00	0.97

Variable description	% agree feature is absent	% agree feature is present	Total % agreement
First intersection: curb cut	0.00	0.03	0.03
First intersection: pedestrian signals	0.05	0.81	0.86
First intersection: crossing sign	0.73	0.00	0.73
First intersection: stop sign	0.73	0.05	0.78
First intersection: traffic light	0.05	0.86	0.92
Second intersection: speed bump	1.00	0.00	1.00
Second intersection: chicane	1.00	0.00	1.00
Second intersection: choker	1.00	0.00	1.00
Second intersection: traffic island	0.86	0.05	0.92
Second intersection: pedestrian overpass	0.97	0.00	0.97
Second intersection: painted crosswalk	0.05	0.84	0.89
Second intersection: pedestrian crossing	0.03	0.76	0.78
Second intersection: curb extension	0.97	0.00	0.97
Second intersection: curb cut	0.03	0.00	0.03
Second intersection: pedestrian signals	0.14	0.76	0.89
Second intersection: crossing sign	0.70	0.00	0.70
Second intersection: stop sign	0.81	0.03	0.84
Second intersection: traffic light	0.14	0.86	1.00
Grass or natural buffer between sidewalk and traffic	0.78	0.00	0.78
Physical buffer between sidewalk and traffic	0.89	0.03	0.92
Motorized traffic and parking			
Two-way traffic	0.35	0.62	0.97
One-way traffic flowing from first to second intersection	0.76	0.11	0.86
One-way traffic flowing from second to first intersection	0.76	0.14	0.89
Parallel parking permitted	0.16	0.73	0.89
Parking prohibited on entire block	0.70	0.14	0.84
Parking meters present	0.35	0.46	0.81
Diagonal parking	1.00	0.00	1.00
Idling or parked bus ^a	0.78	0.03	0.81
Idling or parked truck ^a	0.50	0.11	0.61
Trucks being loaded or unloaded ^a	0.62	0.05	0.68
Infrastructure for active transportation			
Bus shelter	0.86	0.11	0.97
Bus stop	0.57	0.27	0.84
Elevated subway line	0.81	0.11	0.92
Subway entrance	0.62	0.24	0.86
Sidewalk present	0.00	0.97	0.97
Concrete (vs brick or paver) sidewalk surface	0.00	0.97	0.97
Subway grate on sidewalk	0.17	0.67	0.84
Sidewalk amenities			
Street-accessible automated teller machine	0.78	0.03	0.81
Bench	0.95	0.00	0.95
Emergency phone	0.70	0.00	0.70
Newsstand	0.86	0.00	0.86
Other (nonfood) vendors	0.83	0.00	0.83
Human presence and social interactions			
People visible ^a	0.00	1.00	1.00
Women present ^a	0.00	0.95	0.95
Men present ^a	0.00	1.00	1.00
Older adults (aged ≥65 years) present ^a	0.08	0.54	0.62

Variable description	% agree feature is absent	% agree feature is present	Total % agreement
Adults present ^a	0.00	0.97	0.97
Teenagers present ^a	0.11	0.43	0.54
Children present ^a	0.05	0.43	0.49
People shopping from street vendors ^a	0.69	0.06	0.74
Loading/unloading of boxes into a basement ^a	0.89	0.00	0.89
Person distributing advertising flyers ^a	0.86	0.00	0.86
Panhandlers present ^a	0.89	0.00	0.89
Political canvasser present ^a	1.00	0.00	1.00
Person talking on a cell phone present ^{a,b}	0.03	0.59	0.62
Doe Fund employee cleaning streets ^a	0.86	0.03	0.89
Intoxicated person present ^a	1.00	0.00	1.00
Person eating ^{a,b}	0.43	0.11	0.54
Individuals engaged in a fight ^a	0.95	0.00	0.95
Person distributing free papers ^a	0.86	0.00	0.86
People playing chess or other games ^a	1.00	0.00	1.00
Homeless person present ^a	0.89	0.03	0.92
Police present ^a	0.38	0.00	0.38
People sitting and reading ^a	0.86	0.00	0.86
People sitting in a group ^a	0.59	0.11	0.70
People sitting alone ^a	0.46	0.22	0.68
People smoking ^{a,b}	0.27	0.32	0.59
People standing and talking ^a	0.05	0.54	0.59
People walking in a group ^a	0.00	0.70	0.70
People waiting for a bus ^a	0.58	0.25	0.83

^aTransient items

^bSmall items

Appendix B

Spearman rank-order correlations between field audit and Street View measures (continuous measures only)

Variable description	Correlation	p-value	n
Aesthetics			
Number of banners on lamp posts	0.46	0.004	37
Number of flower pots on lamp posts	0.78	<0.001	37
Number of planters (large pots)	0.69	<0.001	35
Number of flower or plant beds	0.18	0.29	36
Number of trees	0.61	<0.001	37
Number of building doors	0.54	0.001	36
Number of doors to ground-floor uses	0.62	<0.001	36
Number of doors to upper-floor uses	0.46	0.006	34
Number of floors in tallest building	0.75	<0.001	37
Number of floors in shortest building	0.53	0.0007	37
Percentage of block face that is blank wall at street level	0.11	0.52	37
Percentage of block face that is fencing	0.25	0.14	37
Percentage of block face at street level that is windows	0.34	0.04	36
Number of window boxes	-0.08	0.64	37
Percentage of block face with parking lots in front of commercial establishments	0.55	<0.001	37
Pedestrian safety			
Number of lanes to cross intersection	0.70	<0.001	37
Motorized traffic and parking			
Number of parked cars ^a	0.65	<0.001	37
Number of lanes occupied by parked cars	0.39	0.02	37
Infrastructure for active transportation			
Number of bike racks	0.84	<0.001	35
Bikes parked in bike racks ^a	0.83	<0.001	35
Bikes parked outside bike racks ^a	0.22	0.21	35
Percentage of block with construction scaffolding ^a	0.78	<0.001	37
Sidewalk amenities			
Number of street lights	0.63	<0.001	37
Number of standard street lamps	0.43	0.007	37
Number of decorative street lights	0.72	<0.001	37
Number of lights attached to buildings	0.10	0.55	36
Number of chairs on sidewalk (not in outdoor café) ^a	-0.14	0.42	37
Number of newspaper boxes	0.61	<0.001	37
Number of phone booths	0.56	<0.001	37
Number of private or business garbage cans	0.32	0.061	36
Number of public garbage cans	0.43	0.008	37
Number of political or marketing sign-up tables ^a	-0.03	0.87	36
Number of awnings	0.40	0.02	36
Sidewalk café chairs ^a	0.87	<0.001	37
Number of building stoops	0.32	0.06	36
Number of store-affiliated displays ^a	0.34	0.04	37
Number of food vendors ^a	-0.13	0.43	36

^aTransient items