Geographic Variation in Wait Times

Racial Disparities in Voting Wait Times: Evidence from Smartphone Data

M. Keith Chen, Kareem Haggag, Devin G. Pope,and Ryne Rohla

October 21, 2020

Table C.1: State-Level Measures of Wait Time and Disparities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Alabama	4,410	23.04	17.25	23.03	3.46	1.86	3.46
Arizona	2,069	20.80	18.75	20.78	4.67	6.56	4.05
Arkansas	907	21.73	18.27	21.67	-1.84	3.36	-0.74
California	11,743	20.43	17.37	20.43	8.32	2.04	7.89
Connecticut	2,722	12.37	12.51	12.39	11.70	3.69	9.71
Delaware	688	11.91	11.68	11.99	4.85	2.50	4.67
DistrictofColumbia	179	27.49	22.94	26.24	8.38	4.56	6.77
Florida	7,172	17.99	15.52	17.99	2.74	1.42	2.77
Georgia	5,058	20.12	18.14	20.12	4.38	1.54	4.33
Idaho	1,274	19.23	14.99	19.22	13.12	25.23	4.41
Illinois	6,213	15.99	13.69	15.99	5.68	1.19	5.61
Indiana	4,286	27.11	23.09	27.06	-15.93	2.73	-13.07
Iowa	1,667	15.44	13.17	15.46	-9.66	4.72	-5.23
Kansas	1,488	16.08	13.78	16.10	8.20	4.43	6.71
Kentucky	3,166	14.61	12.64	14.63	-2.99	2.00	-2.44
Louisiana	2,403	16.08	14.30	16.09	-0.96	1.13	-0.83
Maine	463	17.66	15.13	17.69	27.35	24.83	5.90
Maryland	4,949	20.48	16.97	20.47	7.03	1.41	6.87
Massachusetts	2,655	12.29	10.94	12.31	9.75	2.82	8.76
Michigan	9,776	22.27	16.44	22.26	11.48	1.42	11.12
Minnesota	4,526	15.26	12.52	15.27	10.11	3.75	8.46
Mississippi	999	17.73	15.87	17.74	-3.26	3.08	-2.05
Missouri	6,231	26.20	20.70	26.17	15.00	2.40	13.63
Montana	307	20.53	16.56	20.45	-117.11	92.15	-2.48
Nebraska	1,355	16.60	16.02	16.63	13.22	9.91	6.60
Nevada	976	15.67	14.15	15.71	2.57	8.31	3.08
NewHampshire	1,325	15.48	12.10	15.50	-4.98	10.24	0.81
NewJersey	4,446	13.89	13.24	13.90	4.64	1.58	4.57
NewMexico	484	18.53	14.48	18.54	-35.21	21.06	-1.39
NewYork	7,892	16.51	14.66	16.52	10.50	1.08	10.31
NorthCarolina	4,061	20.58	16.81	20.57	6.99	1.78	6.74
NorthDakota	424	20.03	17.76	19.97	8.97	42.73	3.79
Ohio	8,343	17.49	14.27	17.49	7.10	1.22	6.98
Oklahoma	3,445	26.45	20.96	26.39	7.29	4.41	6.09
Pennsylvania	6,227	20.80	18.50	20.79	-4.34	2.29	-3.49
RhodeIsland	785	19.07	15.77	19.07	35.78	15.56	9.30
SouthCarolina	4,141	26.55	22.12	26.49	-11.68	3.03	-9.01
SouthDakota	429	15.55	12.81	15.62	-12.56	10.26	-1.54
Tennessee	2,418	16.27	15.40	16.28	0.94	1.60	1.09
Texas	7,377	16.04	16.51	16.05	-2.25	1.38	-2.01
Utah	1,201	27.89	22.96	27.67	-34.32	51.98	1.21
Vermont	165	14.83	13.09	15.05	6.78	33.00	3.69
Virginia	9,030	17.73	15.09	17.73	6.53	1.71	6.34
WestVirginia	600	18.38	13.69	18.39	7.29	6.96	5.28
Wisconsin	3,728	16.62	13.80	16.63	0.83	1.99	1.05
Wyoming	286	20.65	13.15	20.59	17.90	44.06	4.35

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a state fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of state fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these state-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted state-level means shown in Column 2.

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Alabama 01	518	22.38	16.63	22.28	-4.95	5.06	-3.40
Alabama 02	689	21.76	15.48	21.70	-4.26	6.77	-2.14
Alabama 03	468	22.66	17.40	22.53	10.10	8.05	6.66
Alabama 04	272	21.06	15.10	20.95	-1.92	8.59	-0.16
Alabama 05	956	22.05	17.49	21.99	13.94	5.80	10.64
Alabama 06	1,061	23.91	17.42	23.83	4.86	5.08	4.20
Alabama 07	446	27.49	19.78	27.09	-0.86	5.06	-0.23
Arizona 01	192	16.16	14.06	16.30	-10.97	13.22	-2.41
Arizona 02	193	20.02	20.16	19.88	54.76	59.49	3.49
Arizona 03	150	23.88	19.66	23.24	-75.87	39.55	-2.54
Arizona 04	226	18.28	15.76	18.30	-28.90	28.87	-1.12
Arizona 05	375	21.59	19.48	21.44	-14.55	68.23	1.57
Arizona 06	252	21.37	19.95	21.16	76.05	39.51	6.25
Arizona 07	133	23.03	18.27	22.50	9.03	5.27	7.34
Arizona 08	334	19.98	18.04	19.92	-6.32	16.88	-0.03
Arizona 09	214	23.97	20.95	23.44	-36.35	24.47	-3.11
Arkansas 01	127	19.85	16.68	19.72	-2.12	8.10	-0.39
Arkansas 02	415	20.80	17.22	20.72	1.72	3.43	1.75
Arkansas 03	234	23.63	20.17	23.20	14.72	47.25	2.50
Arkansas 04	131	23.13	19.22	22.54	-5.72	11.96	-0.98
California 01	220	16.17	13.87	16.28	5.56	83.94	2.02
California 02	125	16.96	15.52	17.12	-53.21	35.46	-1.90
California 03	264	19.31	14.91	19.28	0.84	8.83	1.36
California 04	290	18.73	18.47	18.73	-31.90	69.72	1.19
California 05	184	18.76	16.51	18.75	16.49	4.45	13.83
California 06	205	18.03	15.69	18.07	2.43	10.04	2.18
California 07	287	17.66	15.64	17.70	-2.79	12.09	0.16
California 08	164	23.89	21.22	23.21	51.09	34.65	5.53
California 09	257	16.83	14.00	16.90	18.14	11.60	8.40
California 10	247	16.91	14.61	16.99	27.82	28.69	4.57
California 11	274	18.64	15.72	18.64	6.48	7.40	4.75
California 12	145	17.46	20.08	17.62	17.74	29.13	3.51
California 13	133	21.35	20.38	20.96	7.39	8.95	4.81
California 14	174	21.43	18.91	21.15	-32.29	39.81	0.00
California 15	253	18.08	15.41	18.11	2.37	11.02	2.13
California 16	175	20.32	18.58	20.16	36.56	16.42	10.59
California 17	219	17.76	16.05	17.81	7.62	35.34	2.36
California 18	220	19.29	16.45	19.25	-35.51	33.45	-0.94
California 19	205	17.95	16.88	18.00	-17.27	36.32	0.67
California 20	112	19.68	18.48	19.54	89.54	19.14	19.24
California 21	74	17.97	14.37	18.06	-6.19	16.92	0.01

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2.

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
California 22	285	21.97	18.49	21.77	-63.14	24.93	-6.38
California 23	268	18.79	13.90	18.79	7.52	14.14	3.67
California 24	171	20.40	16.93	20.25	122.44	73.82	4.45
California 25	348	22.55	17.37	22.37	31.20	12.57	12.49
California 26	275	20.32	18.65	20.21	-7.38	22.44	0.53
California 27	214	19.71	15.37	19.65	17.63	11.57	8.21
California 28	189	22.92	19.69	22.49	-3.66	52.23	1.76
California 29	161	27.40	21.16	26.25	4.99	47.28	2.09
California 30	271	22.53	17.21	22.31	22.10	27.85	4.09
California 31	78	26.65	22.08	24.63	43.66	47.82	3.70
California 32	196	21.07	16.94	20.89	7.75	30.66	2.48
California 33	234	24.59	20.65	24.06	-39.32	28.35	-2.29
California 34	121	23.55	19.86	22.81	9.87	38.17	2.44
California 35	259	22.50	17.19	22.28	1.54	40.33	1.93
California 36	250	23.53	18.64	23.19	27.06	16.95	7.93
California 37	162	24.20	20.23	23.54	7.83	6.36	5.99
California 38	188	19.75	16.63	19.67	23.97	46.88	2.91
California 39	286	20.45	16.40	20.36	-61.49	31.34	-3.53
California 40	129	21.28	16.00	21.02	-42.47	23.12	-4.50
California 41	308	20.42	15.64	20.35	24.92	14.17	9.02
California 42	496	21.04	17.86	20.96	27.76	27.67	4.73
California 43	177	23.39	18.27	22.95	0.99	5.21	1.22
California 44	119	24.61	19.30	23.75	-20.00	6.73	-12.57
California 45	378	20.62	15.45	20.55	-26.77	22.53	-2.40
California 46	154	26.46	24.46	25.10	51.88	125.13	2.48
California 47	208	18.78	14.73	18.78	1.43	10.22	1.72
California 48	277	21.19	15.79	21.07	-47.61	40.00	-0.85
California 49	291	21.07	17.12	20.94	-12.97	67.91	1.61
California 50	357	18.31	15.20	18.32	51.96	34.81	5.56
California 51	141	22.20	19.01	21.77	0.06	9.88	1.06
California 52	286	20.97	19.78	20.81	103.50	55.78	5.23
California 53	239	17.21	14.28	17.28	20.12	19.98	5.31
Connecticut 01	590	10.91	10.57	10.99	4.77	2.59	4.57
Connecticut 02	529	11.38	10.97	11.47	-4.51	5.84	-2.71
Connecticut 03	508	12.60	13.40	12.71	18.98	7.79	12.06
Connecticut 04	545	13.67	12.75	13.75	16.69	6.49	11.94
Connecticut 05	550	13.37	14.39	13.48	20.93	9.29	11.57
Delaware 01	688	11.91	11.68	11.98	4.85	2.51	4.66
DistrictofColumbia 01	179	27.49	22.94	26.27	8.38	4.57	7.15
Florida 01	321	16.25	13.98	16.33	8.88	4.62	7.53
Florida 02	173	14.52	12.70	14.72	3.44	5.89	3.02

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (3)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Florida 03	288	17.20	15.61	17.27	0.10	11.53	1.21
Florida 04	285	13.07	10.86	13.20	-0.64	9.89	0.72
Florida 05	170	13.69	13.61	13.96	0.13	5.41	0.58
Florida 06	299	17.94	15.36	17.97	8.52	7.08	6.15
Florida 07	277	15.61	13.57	15.72	-3.66	12.73	-0.03
Florida 08	341	15.50	14.66	15.60	0.95	4.51	1.14
Florida 09	292	18.28	15.31	18.30	-18.70	7.96	-10.09
Florida 10	249	19.59	15.15	19.55	-5.24	4.70	-3.80
Florida 11	300	16.23	12.74	16.30	-8.30	8.83	-3.50
Florida 12	499	17.85	13.74	17.87	-1.81	16.83	1.05
Florida 13	261	18.75	15.52	18.75	5.58	5.05	4.76
Florida 14	215	17.35	13.36	17.40	-0.79	4.16	-0.34
Florida 15	397	17.41	13.34	17.44	-0.17	8.50	0.79
Florida 16	346	17.68	14.68	17.71	20.91	14.74	7.48
Florida 17	261	16.23	14.24	16.33	18.88	15.56	6.52
Florida 18	304	19.42	17.48	19.38	-3.28	11.49	-0.15
Florida 19	215	18.26	16.86	18.28	22.18	15.83	7.28
Florida 20	152	20.92	18.13	20.68	-6.21	6.94	-3.33
Florida 21	348	20.65	17.86	20.56	-5.90	5.20	-4.06
Florida 22	305	20.27	17.63	20.18	9.94	9.64	5.86
Florida 23	248	23.11	19.70	22.76	6.53	13.91	3.40
Florida 24	120	21.20	16.45	20.92	6.95	6.19	5.44
Florida 25	193	22.54	18.68	22.19	-30.83	36.47	-0.22
Florida 26	173	18.64	14.80	18.65	21.82	8.50	12.90
Florida 27	138	22.97	20.99	22.33	12.87	15.71	4.86
Georgia 01	291	25.32	20.86	24.82	8.96	6.85	6.53
Georgia 02	255	15.21	12.71	15.32	5.79	3.11	5.41
Georgia 03	385	16.06	14.22	16.13	-3.36	3.20	-2.81
Georgia 04	294	20.11	18.03	20.03	-0.85	3.78	-0.46
Georgia 05	273	23.84	19.13	23.49	-11.33	3.36	-9.82
Georgia 06	644	17.45	15.59	17.48	3.30	5.60	2.95
Georgia 07	676	28.59	24.64	28.12	31.24	9.64	16.26
Georgia 08	207	15.55	11.80	15.66	-9.62	5.87	-6.37
Georgia 09	324	16.29	12.35	16.35	-1.94	11.15	0.33
Georgia 10	316	21.63	20.05	21.44	10.10	10.72	5.51
Georgia 11	655	18.85	15.42	18.84	14.01	4.98	11.37
Georgia 12	199	14.38	13.10	14.57	2.04	3.00	2.03
Georgia 13	310	23.77	20.21	23.43	6.10	7.85	4.40
Georgia 14	229	15.10	12.00	15.22	2.32	7.38	2.18
Idaho 01	665	20.07	14.84	20.04	-15.27	23.49	-0.48
Idaho 02	609	18.31	15.11	18.32	51.18	57.40	3.47

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (4)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Illinois 01	295	17.07	14.99	17.14	6.56	2.83	6.17
Illinois 02	224	18.22	14.32	18.24	4.82	2.60	4.61
Illinois 03	272	18.10	13.38	18.12	11.08	11.55	5.61
Illinois 04	113	20.94	17.38	20.65	-48.99	23.93	-5.03
Illinois 05	183	22.94	20.49	22.47	32.84	69.70	2.65
Illinois 06	546	15.67	14.82	15.73	66.64	41.00	5.47
Illinois 07	174	22.46	20.80	22.01	1.61	5.42	1.69
Illinois 08	412	16.28	11.54	16.32	-17.80	8.66	-8.74
Illinois 09	270	17.33	13.99	17.38	-5.20	11.30	-0.98
Illinois 10	416	16.49	13.66	16.54	19.07	14.37	7.12
Illinois 11	588	14.74	11.43	14.79	7.47	7.64	5.28
Illinois 12	366	13.75	11.24	13.84	7.27	3.51	6.62
Illinois 13	403	15.10	13.22	15.18	-5.28	4.02	-4.16
Illinois 14	669	14.04	11.85	14.09	-0.57	12.51	1.04
Illinois 15	222	14.04	12.16	14.20	2.33	4.75	2.26
Illinois 16	361	14.90	13.19	14.99	19.88	7.84	12.54
Illinois 17	210	16.57	14.09	16.67	10.21	9.22	6.17
Illinois 18	488	14.03	11.03	14.10	5.18	9.26	3.59
Indiana 01	289	16.18	15.27	16.28	2.35	3.80	2.29
Indiana 02	484	26.12	19.25	25.82	-25.16	7.96	-13.85
Indiana 03	588	29.81	23.12	29.29	-24.60	11.62	-8.58
Indiana 04	412	30.73	24.71	29.83	-10.91	25.30	0.35
Indiana 05	823	38.27	29.21	37.23	-65.07	10.93	-26.63
Indiana 06	329	22.17	17.77	22.00	6.34	16.75	3.02
Indiana 07	532	23.76	21.34	23.53	-14.32	9.25	-6.33
Indiana 08	324	21.95	16.61	21.81	3.32	4.29	3.08
Indiana 09	505	20.12	16.81	20.08	-14.71	19.85	-1.15
Iowa 01	368	14.52	13.46	14.62	-18.53	6.90	-11.36
Iowa 02	374	15.60	13.09	15.67	-17.36	9.45	-7.67
Iowa 03	610	15.89	12.45	15.92	-6.02	7.23	-3.06
Iowa 04	315	15.49	14.22	15.60	34.82	28.39	5.33
Kansas 01	220	15.96	13.53	16.08	-34.21	26.88	-2.12
Kansas 02	305	16.43	14.54	16.51	-0.77	9.67	0.63
Kansas 03	582	14.85	14.88	14.92	11.41	8.84	6.98
Kansas 04	381	17.76	11.17	17.78	9.70	4.91	8.04
Kentucky 01	277	12.69	9.34	12.79	2.75	4.87	2.58
Kentucky 02	627	15.25	13.04	15.30	21.00	20.37	5.36
Kentucky 03	775	11.65	9.17	11.69	1.08	1.73	1.11
Kentucky 04	720	17.54	14.65	17.55	5.64	16.91	2.84
Kentucky 05	170	15.06	15.60	15.32	-6.24	30.51	1.21
Kentucky 06	597	15.04	12.94	15.09	1.07	6.59	1.36

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (5)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Louisiana 01	547	16.39	15.97	16.45	9.22	7.71	6.30
Louisiana 02	350	17.31	15.47	17.35	1.29	3.86	1.39
Louisiana 03	506	15.84	13.13	15.89	-5.65	2.82	-5.03
Louisiana 04	370	15.92	14.27	15.99	-4.23	1.97	-3.97
Louisiana 05	148	17.86	15.38	17.92	-5.16	3.66	-4.22
Louisiana 06	482	14.66	12.05	14.72	-1.84	3.65	-1.34
Maine 01	334	17.49	13.91	17.53	16.58	20.95	4.46
Maine 02	129	18.09	17.96	18.16	142.74	176.10	3.04
Maryland 01	705	15.88	13.13	15.91	4.40	5.27	3.82
Maryland 02	674	26.57	20.54	26.31	5.70	4.31	5.05
Maryland 03	672	24.44	19.76	24.26	-4.15	9.02	-1.23
Maryland 04	555	23.69	17.87	23.54	-1.60	3.78	-1.10
Maryland 05	583	18.00	14.15	18.01	0.32	2.70	0.44
Maryland 06	695	16.30	12.97	16.33	9.31	6.14	7.11
Maryland 07	445	22.49	18.25	22.34	9.23	3.78	8.22
Maryland 08	620	17.48	13.89	17.50	13.27	6.79	9.39
Massachusetts 01	270	12.42	13.01	12.62	9.62	13.56	4.46
Massachusetts 02	376	12.07	9.65	12.16	2.97	7.51	2.58
Massachusetts 03	355	11.78	10.83	11.90	13.01	14.38	5.29
Massachusetts 04	278	12.33	9.45	12.44	3.45	9.43	2.70
Massachusetts 05	241	11.70	8.88	11.82	6.74	4.49	5.85
Massachusetts 06	336	10.89	9.33	11.00	22.43	12.30	9.54
Massachusetts 07	179	18.02	15.84	18.07	-4.32	4.49	-3.15
Massachusetts 08	331	12.77	11.77	12.90	10.33	9.15	6.26
Massachusetts 09	289	11.09	9.32	11.21	49.75	26.89	7.34
Michigan 01	316	19.24	15.51	19.22	-18.95	25.02	-0.71
Michigan 02	777	19.66	13.62	19.65	2.35	8.66	2.17
Michigan 03	667	21.97	15.90	21.90	5.80	6.72	4.50
Michigan 04	450	20.28	15.21	20.23	-13.66	7.45	-7.64
Michigan 05	589	23.29	17.00	23.17	7.51	3.78	6.73
Michigan 06	559	24.80	17.53	24.62	3.54	6.79	3.00
Michigan 07	603	20.62	14.20	20.59	11.11	8.62	6.94
Michigan 08	1,022	21.62	16.50	21.58	-2.36	8.49	-0.42
Michigan 09	874	20.22	14.19	20.20	2.14	5.99	2.09
Michigan 10	854	18.98	13.54	18.98	8.32	7.08	6.02
Michigan 11	1,154	23.13	16.65	23.07	20.40	11.38	9.46
Michigan 12	722	24.32	17.89	24.19	18.07	11.31	8.56
Michigan 13	538	26.03	20.30	25.73	13.96	3.30	12.64
Michigan 14	651	28.15	19.34	27.86	6.67	3.30	6.16
Minnesota 01	347	14.31	10.08	14.38	-2.88	8.75	-0.64
Minnesota 02	903	13.60	10.42	13.63	14.82	10.52	7.68

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (6)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Minnesota 03	874	16.80	13.69	16.82	24.64	12.34	10.33
Minnesota 04	642	16.19	13.73	16.23	-0.06	4.62	0.33
Minnesota 05	384	17.50	16.45	17.54	-0.72	6.16	0.08
Minnesota 06	855	14.43	11.08	14.47	-1.96	8.82	-0.13
Minnesota 07	235	14.44	13.34	14.60	20.56	38.51	3.08
Minnesota 08	286	15.02	10.84	15.10	63.07	24.95	9.77
Mississippi 01	332	16.95	13.65	17.00	-8.22	6.37	-5.03
Mississippi 02	153	16.29	15.70	16.48	8.30	5.66	6.61
Mississippi 03	248	14.71	13.86	14.87	-6.50	3.49	-5.47
Mississippi 04	266	22.34	19.06	22.08	-4.54	5.30	-2.97
Missouri 01	634	29.49	20.63	29.11	10.67	3.11	9.81
Missouri 02	1,408	22.82	16.61	22.78	2.38	13.41	2.10
Missouri 03	814	20.43	16.33	20.40	18.00	14.16	6.90
Missouri 04	422	20.65	17.37	20.57	31.80	20.47	7.25
Missouri 05	830	40.97	27.05	39.95	-2.95	6.50	-1.36
Missouri 06	980	30.85	23.01	30.51	26.29	28.53	4.43
Missouri 07	906	20.72	14.54	20.70	75.62	32.40	7.98
Missouri 08	237	17.03	12.86	17.09	-13.13	10.37	-4.86
Montana 01	307	20.53	16.56	20.45	-117.11	92.37	0.17
Nebraska 01	485	17.52	17.83	17.56	78.02	34.86	7.43
Nebraska 02	615	16.06	15.14	16.11	8.69	10.25	5.04
Nebraska 03	255	16.17	14.35	16.27	-10.56	22.53	0.06
Nevada 01	163	15.01	12.14	15.18	-13.11	10.09	-5.06
Nevada 02	291	16.06	14.62	16.16	-2.79	19.71	1.06
Nevada 03	294	14.15	11.79	14.26	-5.37	14.39	-0.25
Nevada 04	228	17.62	17.18	17.69	3.20	12.74	2.40
NewHampshire 01	755	16.16	12.77	16.19	-3.35	11.18	-0.25
NewHampshire 02	570	14.58	11.09	14.62	-8.54	21.88	0.29
NewJersey 01	432	12.18	10.03	12.26	3.56	3.71	3.34
NewJersey 02	324	14.45	12.68	14.56	12.78	7.42	8.63
NewJersey 03	411	13.06	14.13	13.21	-3.95	2.49	-3.56
NewJersey 04	458	11.17	9.65	11.25	-3.30	5.38	-2.01
NewJersey 05	415	13.93	13.78	14.04	-7.09	9.67	-2.45
NewJersey 06	426	13.98	13.25	14.09	13.04	9.82	7.27
NewJersey 07	566	14.28	13.59	14.35	12.02	11.34	6.07
NewJersey 08	64	21.06	21.45	20.39	9.94	10.50	5.52
NewJersey 09	252	13.16	11.61	13.32	16.17	5.74	12.31
NewJersey 10	194	18.30	14.51	18.32	-5.83	4.06	-4.60
NewJersey 11	447	12.84	14.02	12.98	51.94	20.36	10.90
NewJersey 12	457	16.47	14.40	16.53	-9.00	3.25	-7.83
NewMexico 01	171	19.62	14.14	19.57	-43.72	29.29	-2.49

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (7)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
NewMexico 02	160	17.94	14.56	17.99	-35.96	32.87	-1.06
NewMexico 03	153	17.93	14.79	17.98	4.21	69.60	2.01
NewYork 01	743	14.97	13.46	15.02	15.31	20.04	4.41
NewYork 02	615	13.90	11.93	13.95	17.19	4.66	14.19
NewYork 03	469	13.35	10.60	13.41	22.03	9.53	11.87
NewYork 05	379	25.07	18.19	24.78	2.50	3.10	2.45
NewYork 06	327	18.98	14.34	18.97	24.18	12.33	10.17
NewYork 07	147	19.50	16.49	19.43	17.89	20.99	4.67
NewYork 08	260	20.29	15.11	20.21	4.75	3.28	4.45
NewYork 09	218	22.81	17.72	22.50	4.34	3.09	4.11
NewYork 10	236	19.51	15.92	19.46	-24.72	22.98	-1.96
NewYork 11	413	14.70	11.88	14.77	-0.13	1.87	-0.05
NewYork 12	277	20.29	18.41	20.19	-19.39	7.52	-11.07
NewYork 13	145	22.41	18.98	21.97	6.72	6.31	5.24
NewYork 14	205	22.52	19.45	22.17	-3.87	16.19	0.47
NewYork 15	174	20.66	16.69	20.50	-0.55	7.67	0.45
NewYork 16	73	21.98	17.93	21.34	-9.23	8.91	-3.94
NewYork 17	159	14.83	13.00	15.04	-5.32	10.97	-1.13
NewYork 18	402	13.87	11.36	13.95	3.31	4.08	3.10
NewYork 19	216	14.32	11.77	14.46	10.70	12.73	5.06
NewYork 20	291	11.98	11.19	12.14	5.93	11.29	3.59
NewYork 21	141	14.79	15.69	15.12	-8.80	16.68	-0.66
NewYork 22	255	14.41	13.42	14.57	-8.62	16.68	-0.62
NewYork 23	135	12.04	9.72	12.28	38.25	22.84	7.34
NewYork 24	535	16.70	14.23	16.74	11.57	4.89	9.52
NewYork 25	545	15.25	15.10	15.32	0.59	6.17	1.00
NewYork 26	253	13.08	13.02	13.28	6.15	5.45	5.10
NewYork 27	279	13.50	11.90	13.63	44.88	36.55	4.80
NorthCarolina 01	178	19.49	15.17	19.44	-4.35	5.10	-2.91
NorthCarolina 02	558	24.58	19.29	24.37	-0.10	7.07	0.64
NorthCarolina 03	168	19.24	16.62	19.19	-8.91	7.76	-4.51
NorthCarolina 04	418	22.62	18.38	22.45	19.61	7.05	13.26
NorthCarolina 05	263	18.70	16.35	18.70	15.29	8.64	9.19
NorthCarolina 06	306	18.30	13.12	18.31	3.74	5.27	3.31
NorthCarolina 07	239	17.63	13.44	17.67	3.19	6.32	2.81
NorthCarolina 08	381	19.74	15.93	19.70	0.04	7.30	0.76
NorthCarolina 09	372	20.20	15.74	20.15	4.74	6.73	3.80
NorthCarolina 10	256	15.44	12.51	15.54	11.24	12.18	5.44
NorthCarolina 11	176	17.66	16.80	17.74	-31.10	19.22	-4.53
NorthCarolina 12	405	25.52	19.28	25.19	3.11	5.23	2.84
NorthCarolina 13	341	19.15	15.76	19.13	-3.33	3.56	-2.67

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (8)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
NorthDakota 01	424	20.03	17.76	19.97	8.97	42.83	2.31
Ohio 01	672	20.96	14.85	20.92	11.17	3.15	10.23
Ohio 02	589	18.73	14.07	18.73	6.73	6.18	5.29
Ohio 03	542	22.11	15.98	22.02	1.51	3.70	1.57
Ohio 04	310	12.09	9.82	12.20	-8.88	3.50	-7.57
Ohio 05	575	15.42	13.03	15.47	7.90	9.38	4.94
Ohio 06	260	15.19	11.01	15.27	35.86	21.81	7.38
Ohio 07	368	15.30	13.41	15.39	-13.77	7.85	-7.32
Ohio 08	669	13.78	11.89	13.84	-8.52	3.29	-7.37
Ohio 09	383	16.21	10.98	16.26	8.64	2.74	8.12
Ohio 10	563	24.47	19.55	24.26	-13.94	3.89	-11.62
Ohio 11	331	19.02	14.19	19.01	4.47	2.56	4.30
Ohio 12	774	16.74	14.03	16.77	18.83	13.19	7.67
Ohio 13	456	16.07	12.94	16.12	17.79	6.04	13.17
Ohio 14	507	14.42	11.07	14.48	-11.11	6.59	-6.81
Ohio 15	701	19.05	15.20	19.04	19.26	15.02	6.87
Ohio 16	643	15.83	13.34	15.87	11.80	14.78	4.81
Oklahoma 01	968	24.53	19.67	24.41	1.42	8.22	1.65
Oklahoma 02	192	20.49	17.37	20.34	32.36	12.17	13.37
Oklahoma 03	591	25.77	20.51	25.51	11.18	29.58	2.84
Oklahoma 04	728	28.65	22.58	28.29	-0.68	14.28	1.16
Oklahoma 05	966	28.31	21.48	28.07	4.67	5.89	3.91
Pennsylvania 01	132	16.60	17.65	16.83	11.11	4.88	9.17
Pennsylvania 02	141	18.99	20.51	18.95	-0.32	4.89	0.16
Pennsylvania 03	292	19.04	17.57	19.02	-34.09	14.26	-9.04
Pennsylvania 04	479	26.11	22.47	25.71	-3.17	19.10	0.94
Pennsylvania 05	209	24.52	21.54	23.89	118.97	40.17	8.54
Pennsylvania 06	571	21.79	19.16	21.68	0.05	18.90	1.57
Pennsylvania 07	512	17.64	17.11	17.67	-14.90	7.70	-8.13
Pennsylvania 08	821	22.55	18.29	22.47	-27.55	11.57	-9.82
Pennsylvania 09	173	18.31	14.70	18.34	-18.23	16.57	-3.01
Pennsylvania 10	214	19.63	16.74	19.57	3.65	25.74	2.16
Pennsylvania 11	279	23.60	22.15	23.17	-15.56	18.16	-1.80
Pennsylvania 12	339	19.01	17.50	18.99	6.13	30.83	2.33
Pennsylvania 13	326	17.68	17.50	17.73	1.25	6.56	1.48
Pennsylvania 14	179	16.09	13.24	16.22	7.10	4.97	5.98
Pennsylvania 15	469	23.32	18.29	23.15	-44.29	19.63	-6.81
Pennsylvania 16	405	17.49	14.55	17.52	8.14	15.10	3.70
Pennsylvania 17	263	22.21	16.99	22.01	-10.02	8.06	-4.95
Pennsylvania 18	423	20.23	17.95	20.16	-20.47	24.44	-1.01
RhodeIsland 01	354	21.33	18.65	21.19	37.64	21.09	7.98

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (9)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
RhodeIsland 02	431	17.22	12.66	17.25	9.56	14.58	4.21
SouthCarolina 01	715	34.44	25.83	33.68	-26.27	12.07	-8.75
SouthCarolina 02	737	23.82	20.64	23.66	-6.41	6.24	-3.86
SouthCarolina 03	449	20.12	17.60	20.06	-12.50	8.35	-6.14
SouthCarolina 04	749	25.99	20.53	25.77	-2.18	8.35	-0.36
SouthCarolina 05	588	22.77	19.20	22.63	-16.31	7.17	-9.60
SouthCarolina 06	315	23.37	21.02	23.04	3.53	8.24	2.85
SouthCarolina 07	588	31.46	23.78	30.82	-31.43	7.45	-18.56
SouthDakota 01	429	15.55	12.81	15.62	-12.56	10.28	-4.67
Tennessee 01	286	17.26	15.53	17.32	-18.24	23.23	-0.95
Tennessee 02	279	15.30	14.64	15.43	8.72	9.45	5.33
Tennessee 03	344	19.39	15.95	19.36	5.48	6.74	4.29
Tennessee 04	264	13.85	12.34	13.99	-3.60	9.93	-0.68
Tennessee 05	287	15.01	14.75	15.15	4.55	3.88	4.17
Tennessee 06	301	18.68	18.16	18.67	28.58	7.90	17.58
Tennessee 07	242	14.65	12.59	14.78	2.04	6.05	2.01
Tennessee 08	241	15.66	17.61	15.86	4.04	5.98	3.44
Tennessee 09	174	14.68	14.20	14.91	1.92	3.37	1.93
Texas 01	114	13.75	12.06	14.07	1.53	10.89	1.78
Texas 02	228	14.21	17.46	14.51	14.14	14.17	5.70
Texas 03	355	14.12	16.41	14.29	8.47	11.24	4.65
Texas 04	160	12.83	11.02	13.06	-8.24	6.64	-4.85
Texas 05	162	16.39	19.22	16.64	-3.67	10.71	-0.50
Texas 06	285	14.22	12.10	14.34	0.09	4.40	0.42
Texas 07	246	13.22	15.83	13.51	-14.29	8.87	-6.65
Texas 08	270	15.85	16.40	16.00	-11.01	16.76	-1.18
Texas 09	134	16.33	17.47	16.59	-1.14	7.46	0.06
Texas 10	203	16.50	18.06	16.67	-0.80	8.69	0.47
Texas 11	156	15.75	17.36	16.02	12.40	27.92	3.06
Texas 12	246	13.24	13.18	13.44	6.08	11.82	3.56
Texas 13	164	16.22	18.19	16.47	-5.93	29.13	1.18
Texas 14	181	16.33	17.49	16.52	7.57	7.36	5.44
Texas 15	135	19.37	19.61	19.27	-48.73	17.28	-9.75
Texas 16	176	15.01	14.51	15.23	46.67	46.53	3.91
Texas 17	261	20.43	17.08	20.33	3.11	13.38	2.34
Texas 18	184	14.18	16.06	14.50	-6.57	4.66	-4.89
Texas 19	175	13.45	12.70	13.70	7.45	10.34	4.45
Texas 20	215	16.67	15.38	16.78	34.88	20.25	7.90
Texas 21	242	18.86	20.60	18.85	108.93	52.16	5.81
Texas 22	264	16.89	16.15	16.98	18.52	9.50	10.16
Texas 23	133	22.56	22.39	21.90	64.90	56.35	3.95

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.2: Congressional District-Level Measures of Wait Time and Disparities (10)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
State & District	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Texas 24	236	13.88	14.04	14.09	-2.55	7.31	-0.85
Texas 25	217	18.09	16.65	18.13	2.24	10.40	2.08
Texas 26	410	18.40	16.74	18.41	38.07	24.20	6.82
Texas 27	157	24.32	23.42	23.41	-75.44	24.77	-8.07
Texas 28	141	18.65	17.15	18.65	-7.88	16.05	-0.58
Texas 29	147	11.72	9.40	11.94	2.51	5.20	2.38
Texas 30	203	14.83	14.81	15.04	-6.35	4.16	-4.99
Texas 31	218	15.52	15.65	15.70	12.08	18.69	4.03
Texas 32	312	14.74	14.62	14.88	1.60	7.16	1.73
Texas 33	145	14.77	13.93	15.04	7.06	11.81	3.94
Texas 34	112	19.22	19.36	19.13	11.09	44.74	2.38
Texas 35	166	17.69	19.91	17.80	-13.70	8.79	-6.41
Texas 36	224	13.63	12.69	13.82	-9.44	7.10	-5.30
Utah 01	119	18.77	14.51	18.76	-57.57	9.26	-28.30
Utah 02	253	33.75	25.70	31.88	30.66	72.88	2.56
Utah 03	594	25.83	20.48	25.56	-158.01	192.90	0.80
Utah 04	235	31.41	26.84	29.59	63.87	87.85	2.95
Vermont 01	165	14.83	13.09	15.03	6.78	33.08	2.34
Virginia 01	1,053	16.08	13.81	16.10	-4.14	8.19	-1.52
Virginia 02	1,022	18.78	15.44	18.78	4.57	7.22	3.60
Virginia 03	674	21.25	19.32	21.17	-1.26	3.84	-0.80
Virginia 04	824	19.96	16.86	19.94	-0.56	4.08	-0.16
Virginia 05	535	17.89	13.99	17.90	15.11	7.00	10.42
Virginia 06	562	18.61	15.96	18.61	-7.10	8.88	-2.83
Virginia 07	1,049	20.08	15.48	20.07	-1.75	5.48	-0.81
Virginia 08	569	17.49	15.32	17.51	14.38	6.85	10.07
Virginia 09	444	16.52	15.36	16.58	2.08	12.75	2.00
Virginia 10	1,347	14.54	11.45	14.57	13.47	10.77	6.95
Virginia 11	951	15.98	13.55	16.00	14.18	5.49	11.07
WestVirginia 01	141	15.85	13.88	16.04	2.34	12.68	2.09
WestVirginia 02	333	19.50	12.00	19.48	7.08	7.20	5.19
WestVirginia 03	126	18.27	17.00	18.31	-7.86	27.65	0.90
Wisconsin 01	536	17.11	15.52	17.14	2.79	6.60	2.52
Wisconsin 02	525	16.82	14.17	16.86	14.09	15.11	5.37
Wisconsin 03	394	17.22	13.62	17.26	-0.27	23.26	1.64
Wisconsin 04	377	15.50	13.48	15.58	3.33	2.78	3.22
Wisconsin 05	662	15.67	13.22	15.71	-19.14	14.96	-4.06
Wisconsin 06	516	16.57	12.93	16.61	-32.77	18.73	-5.13
Wisconsin 07	261	17.58	13.78	17.62	-30.10	58.11	0.99
Wisconsin 08	455	17.15	13.44	17.18	7.23	17.75	3.13
Wyoming 01	286	20.65	13.15	20.59	17.90	44.17	2.72

Notes: Columns 5-7 (*Disparity*) correspond to the coefficients on the interaction between a congressional district fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of congressional district fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 4 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 2

Table C.3: (100 Most Populous) County-Level Measures of Wait Time and Disparities (1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
County & State	**Population**	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Alameda California	1,629,615	430	19.31	16.95	19.29	10.76	6.89	10.54
Allegheny Pennsylvania	1,229,605	572	19.02	16.73	19.01	-0.91	5.13	-0.91
BaltimoreCity Maryland	619,796	220	24.41	17.88	24.08	1.23	4.29	1.21
Baltimore Maryland	828,637	806	31.25	20.88	30.99	1.49	4.17	1.47
Bergen NewJersey	937,920	433	11.45	11.12	11.52	0.87	5.80	0.85
Bernalillo NewMexico	674,855	161	20.30	15.10	20.19	-42.40	28.36	-32.35
Bexar Texas	1,892,004	530	18.26	18.60	18.26	5.37	8.72	5.18
Bronx NewYork	1,455,846	355	20.59	16.59	20.52	-0.64	3.99	-0.65
Broward Florida	1,890,416	560	21.55	17.64	21.48	-0.08	4.67	-0.08
Bucks Pennsylvania	626,486	712	22.94	18.60	22.85	-31.53	13.08	-29.58
Clark Nevada	2,112,436	670	15.33	13.57	15.36	6.17	9.10	5.94
Cobb Georgia	739,072	759	20.29	17.14	20.26	5.06	5.35	4.99
Collin Texas	914,075	388	14.36	16.28	14.45	7.22	10.49	6.88
ContraCosta California	1,123,678	471	17.71	14.66	17.72	7.23	6.92	7.08
Cook Illinois	5,238,541	1,603	20.10	16.25	20.09	1.26	1.52	1.26
Cuyahoga Ohio	1,257,401	754	16.88	13.83	16.89	6.87	1.67	6.86
DC DistrictofColumbia	672,391	179	27.49	22.94	26.56	8.38	4.62	8.30
Dallas Texas	2,552,213	767	14.64	15.16	14.68	-2.28	2.11	-2.28
Davidson Tennessee	678,322	255	14.82	13.85	14.91	5.20	3.86	5.16
Dekalb Georgia	736,066	335	18.25	16.91	18.25	0.22	2.50	0.22
Denton Texas	781,321	346	18.62	16.93	18.60	21.07	24.12	16.94
DuPage Illinois	931,826	697	14.37	13.09	14.40	33.82	27.92	25.61
Duval Florida	912,043	275	12.62	11.77	12.72	6.00	5.98	5.90
ElPaso Texas	834,825	194	15.42	15.17	15.53	36.92	46.46	19.46
Erie NewYork	923,995	407	12.58	12.49	12.66	6.57	5.33	6.49
Essex Massachusetts	775,860	292	11.77	11.76	11.88	22.51	13.63	20.90
Essex NewJersey	800,401	293	17.52	16.33	17.54	-2.76	3.25	-2.75
Fairfax Virginia	1,142,004	1,262	14.75	12.45	14.77	24.18	6.77	23.73
Fairfield Connecticut	947,328	708	12.81	11.92	12.85	13.23	5.94	13.03
FortBend Texas	711,421	134	17.11	16.33	17.18	5.01	9.16	4.82
Franklin Ohio	1,253,507	1,238	20.93	16.17	20.91	4.54	3.21	4.52
Fresno California	971,616	291	19.79	16.96	19.73	14.02	14.65	12.85
Fulton Georgia	1,010,420	483	20.90	17.40	20.84	4.72	3.01	4.70
Gwinnett Georgia	889,954	779	30.16	24.64	29.82	17.67	7.87	17.22
Hamilton Ohio	808,703	654	22.33	15.89	22.27	7.05	3.25	7.02
Harris Texas	4,525,519	1,282	13.61	15.20	13.64	1.31	2.72	1.30
Hartford Connecticut	897,417	768	11.40	12.04	11.45	6.18	2.68	6.16
Hennepin Minnesota	1,224,763	1,063	17.54	14.92	17.55	10.20	6.47	10.02
Hidalgo Texas	839,539	119	20.06	20.08	19.84	1,032.15	431.93	15.63
Hillsborough Florida	1,351,087	468	18.05	14.63	18.05	0.87	5.04	0.85

Notes: Columns 6-8 (*Disparity*) correspond to the coefficients on the interaction between a county fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of county fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 5 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 3. Column 2 displays the population of each listed county; we just show the 100 largest counties (by population in the 2017 American Community Survey's five-year estimates).

Table C.10: (100 Most Populous) County-Level Measures of Wait Time and Disparities (2)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
County & State	**Population**	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
Hudson NewJersey	679,756	10	17.93	21.48		5.01	154.65	
Jackson Missouri	688,554	950	42.65	26.94	41.96	-7.08	6.63	-6.97
Jefferson Alabama	659,460	854	26.41	18.03	26.29	1.94	2.58	1.94
Jefferson Kentucky	764,378	833	12.25	10.49	12.28	-0.24	2.29	-0.24
Kent Michigan	636,376	646	22.67	16.64	22.60	6.91	7.33	6.75
Kern California	878,744	259	17.76	12.33	17.77	-23.78	9.84	-22.93
Kings NewYork	2,635,121	693	20.52	15.79	20.49	5.91	1.79	5.90
Lake Illinois	704,476	522	16.03	13.07	16.06	22.98	12.30	21.62
Lee Florida	700,165	185	19.00	17.61	18.95	23.38	19.01	20.33
LosAngeles California	10105722	2,719	22.62	18.41	22.60	4.23	2.87	4.21
Macomb Michigan	864,019	1,248	19.38	13.64	19.37	5.34	5.18	5.28
Maricopa Arizona	4,155,501	1,378	21.61	19.29	21.58	4.01	6.58	3.93
Marion Indiana	939,964	726	23.54	20.81	23.42	-15.18	7.67	-14.85
Mecklenburg NorthCarolina	1,034,290	574	25.05	18.44	24.90	5.25	4.28	5.20
Miami-Dade Florida	2,702,602	537	21.02	17.99	20.96	4.71	3.95	4.68
Middlesex Massachusetts	1,582,857	642	11.48	8.98	11.51	3.59	4.26	3.56
Middlesex NewJersey	837,288	558	16.95	15.04	16.97	1.01	10.70	0.93
Milwaukee Wisconsin	956,586	600	16.08	13.86	16.10	0.86	2.82	0.86
Monmouth NewJersey	627,551	448	11.00	9.89	11.06	-4.22	4.49	-4.20
Monroe NewYork	748,680	556	15.24	15.05	15.29	0.45	6.19	0.43
Montgomery Maryland	1,039,198	829	19.90	14.41	19.89	5.99	4.98	5.92
Montgomery Pennsylvania	818,677	714	20.81	18.54	20.76	7.95	10.09	7.61
NewHaven Connecticut	862,127	536	13.46	14.59	13.53	19.11	7.62	18.66
NewYork NewYork	1,653,877	524	20.49	18.31	20.43	2.73	5.26	2.69
Norfolk Massachusetts	694,389	290	12.04	9.28	12.11	3.30	4.86	3.26
Oakland Michigan	1,241,860	1,843	23.23	16.57	23.20	7.12	3.24	7.09
Ocean NewJersey	589,699	254	13.18	14.36	13.33	17.05	31.32	12.01
Oklahoma Oklahoma	774,203	975	28.88	21.65	28.69	5.21	5.89	5.12
Orange California	3,155,816	1,202	21.92	17.47	21.88	-19.00	22.43	-15.99
Orange Florida	1,290,216	443	19.13	14.99	19.11	-4.22	4.34	-4.20
PalmBeach Florida	1,426,772	662	20.87	18.95	20.82	-2.41	4.65	-2.40
Philadelphia Pennsylvania	1,569,657	286	16.08	18.40	16.16	3.75	3.58	3.72
Pima Arizona	1,007,257	247	16.89	15.01	16.93	6.60	19.21	5.64
Pinellas Florida	949,842	396	19.59	16.05	19.55	2.99	5.16	2.95
Polk Florida	652,256	290	16.60	14.51	16.64	-5.28	6.03	-5.22
PrinceGeorge'S Maryland	905,161	547	21.76	16.30	21.70	-1.74	3.35	-1.74
Providence RhodeIsland	633,704	403	21.05	18.16	20.97	29.43	17.35	26.19
Queens NewYork	2,339,280	1,056	21.59	17.05	21.55	6.83	2.18	6.81
Riverside California	2,355,002	1,137	21.13	17.28	21.10	26.14	10.10	25.08
Sacramento California	1,495,400	482	17.83	15.87	17.84	0.98	7.73	0.93

Notes: Columns 6-8 (*Disparity*) correspond to the coefficients on the interaction between a county fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of county fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 5 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 3. Column 2 displays the population of each listed county; we just show the 100 largest counties (by population in the 2017 American Community Survey's five-year estimates).

Table C.10: (100 Most Populous) County-Level Measures of Wait Time and Disparities (3)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Unadjusted		**Bayesian**	**Unadjusted**		**Bayesian**
County & State	**Population**	**N**	**Mean**	**Std Dev**	**Adjusted Mean**	**Disparity**	**Std Error**	**Adjusted Disparity**
SaltLake Utah	1,106,700	226	40.18	30.62	37.21	-15.85	85.33	-4.77
SanBernardino California	2,121,220	472	23.39	19.17	23.25	32.00	25.55	25.22
SanDiego California	3,283,665	1,085	19.22	16.80	19.21	23.30	10.77	22.24
SanFrancisco California	864,263	169	17.67	20.16	17.71	10.04	28.83	7.32
SanJoaquin California	724,153	172	16.75	15.40	16.81	27.33	15.04	25.00
SanMateo California	763,450	186	22.46	18.54	22.18	-17.39	45.89	-9.89
SantaClara California	1,911,226	534	17.89	16.58	17.89	-13.97	18.76	-12.37
Shelby Tennessee	937,847	319	14.83	14.95	14.92	1.24	2.65	1.23
StLouis Missouri	999,539	1,418	27.12	19.09	27.03	13.33	2.81	13.28
Suffolk Massachusetts	780,685	182	19.56	17.70	19.47	-3.33	4.98	-3.30
Suffolk NewYork	1,497,595	1,707	14.01	12.22	14.02	16.65	4.00	16.54
Tarrant Texas	1,983,675	708	14.34	13.51	14.38	3.86	4.44	3.82
Travis Texas	1,176,584	419	21.41	20.45	21.29	26.42	11.93	24.96
Tulsa Oklahoma	637,123	811	23.98	19.47	23.88	1.48	8.53	1.41
Ventura California	847,834	341	20.01	17.35	19.95	1.16	19.72	0.88
Wake NorthCarolina	1,023,811	720	24.40	19.21	24.29	14.55	6.45	14.30
Wayne Michigan	1,763,822	1,763	24.80	18.69	24.75	12.95	2.14	12.92
Westchester NewYork	975,321	25	10.84	6.59		168.62	52.87	
Will Illinois	687,727	638	13.23	10.48	13.26	7.03	5.00	6.96
Worcester Massachusetts	818,249	383	12.28	10.26	12.34	-0.89	8.09	-0.89

Notes: Columns 6-8 (*Disparity*) correspond to the coefficients on the interaction between a county fixed effect and the "Fraction Black" variable from the voter-level regression of wait time on the full set of county fixed effects and the interaction of those fixed effects with "Fraction Black", omitting the constant and clustering standard errors at the polling place level. Column 7 provides empirical-Bayes-adjusted estimates of these congressional-district-level disparities to account for measurement error. Similarly, Column 5 provides empirical-Bayes-adjusted estimates of the unadjusted congressional-district-level means shown in Column 3. Column 2 displays the population of each listed county; we just show the 100 largest counties (by population in the 2017 American Community Survey's five-year estimates).