

## Technical Appendix

Project name: Improving operational processes at USCIS

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**Table S1. Summary Statistics**

	Mean	SD
Outcomes		
N-400 Submitted	0.085	0.279
N-400 Submitted: Online	0.052	0.223
N-400 Submitted: Mail	0.033	0.178
N-400 Submitted: Full Fee	0.060	0.238
N-400 Submitted: Full Fee Waiver	0.012	0.108
N-400 Submitted: Partial Fee Waiver	0.013	0.113
N-400 Submitted: Any Fee Waiver	0.025	0.156
Treatments		
Treatment Group	0.161	0.368
Letter Delivered	0.144	0.351
Covariates (Strata)		
Years as LPR: 6	0.294	0.455
Years as LPR: 7	0.285	0.451
Years as LPR: 8	0.223	0.416
Years as LPR: 9	0.199	0.399
Class of Admission: Employment	0.102	0.302
Class of Admission: Family	0.281	0.449
Class of Admission: Humanitarian	0.139	0.346
Class of Admission: Parent	0.227	0.419
Class of Admission: Spouse	0.252	0.434
Region of Birth: Caribbean	0.165	0.372
Region of Birth: Central/South America	0.120	0.325
Region of Birth: China/India	0.146	0.353
Region of Birth: Mexico	0.213	0.409
Region of Birth: Other	0.355	0.478
Covariates (Non-Strata)		
Male	0.456	0.498
Age	48.770	16.854
Marital Status: Divorced/Widowed	0.082	0.274
Marital Status: Married	0.661	0.473
Marital Status: Single	0.247	0.431
State: California	0.209	0.407
State: New York	0.140	0.347
State: Texas	0.104	0.305
State: Florida	0.109	0.312
State: New Jersey	0.049	0.215
Propensity to Refile	0.007	0.006
Filed N-400 Prior to Letter Initiation	0.013	0.114
Median Income of Zip Code (\$)	69309.840	30409.916

Means and standard deviations shown. Strata covariates are the covariates that form the randomization blocks. The Propensity to Refile is a variable calculated internally by USCIS. Due to delays between when N-400 data is uploaded to USCIS servers and the timing of randomization and letter mailings, approximately 1.3% of the randomization pool had already submitted the Form N-400 before the first letters were mailed on October 26, 2023. These pre-submissions are captured by the Filed N-400 Prior to Letter Initiation covariate. (N=1,861,178).

**Table S2. Balance Checks**

	Means		Difference		p-value
	Treatment	Control	Raw	Standardized	
	(1)	(2)	(3)	(4)	(5)
Strata Covariates					
Years as LPR: 6	0.294	0.294	0.000	0.000	-
Years as LPR: 7	0.285	0.285	0.000	0.000	-
Years as LPR: 8	0.223	0.223	0.000	0.000	-
Years as LPR: 9	0.198	0.199	-0.001	-0.003	-
Class of Admission: Employment	0.102	0.102	0.000	0.000	-
Class of Admission: Family	0.280	0.281	-0.001	-0.002	-
Class of Admission: Humanitarian	0.139	0.139	0.000	0.000	-
Class of Admission: Parent	0.227	0.227	0.000	0.000	-
Class of Admission: Spouse	0.253	0.252	0.001	0.002	-
Region of Birth: Caribbean	0.165	0.165	0.000	0.000	-
Region of Birth: Central/South America	0.120	0.120	0.000	0.000	-
Region of Birth: China/India	0.146	0.146	0.000	0.000	-
Region of Birth: Mexico	0.213	0.213	0.000	0.000	-
Region of Birth: Other	0.355	0.355	0.000	0.000	-
Non-Strata Covariates					
Male	0.457	0.456	0.001	0.002	0.073
Age	48.741	48.776	-0.035	-0.002	0.170
Marital Status: Divorced/Widowed	0.081	0.082	-0.001	-0.004	0.614
Marital Status: Married	0.662	0.661	0.001	0.002	0.854
Marital Status: Single	0.247	0.247	0.000	0.000	0.676
State: California	0.209	0.209	0.000	0.000	0.658
State: New York	0.141	0.140	0.001	0.003	0.688
State: Texas	0.103	0.104	-0.001	-0.003	0.051
State: Florida	0.109	0.110	-0.001	-0.003	0.102
State: New Jersey	0.049	0.049	0.000	0.000	0.329
Propensity to Refile	0.007	0.007	0.000	0.000	0.413
Filed N-400 Prior to Letter Initiation	0.013	0.013	0.000	0.000	0.644
Median Income of Zip Code (\$)	69292.627	69313.148	-20.521	-0.001	0.657

The table provides mean values for both the treatment group (n=300,000) and the control group (n=1,561,178). Standardized differences are calculated as raw differences divided by the pooled standard deviation. p-values are derived from regressions that estimate differences between the treatment and control group, including fixed effects for randomization strata. Strata covariates are the covariates that form the randomization blocks. No p-values are shown for strata covariates since they are balanced by design. The Propensity to Refile is an internally calculated value by USCIS. Due to delays between the upload of N-400 data to USCIS servers and the timing of randomization and letter mailings, approximately 1.3% of the randomization pool had already submitted the Form N-400 by October 26, 2023. These pre-submissions are captured by the Filed N-400 Prior to Letter Initiation covariate.

**Table S3. Effect of the Letter on N-400 Submission for Full Sample and Subgroups**

Group	Value	ITT	Std Error	95 LB	95 UB	N
Full Sample	Full Sample	1.01	0.06	0.89	1.12	1,861,178
Class of Admission	Employment	1.44	0.21	1.02	1.85	189,025
Class of Admission	Family	0.89	0.11	0.67	1.10	522,086
Class of Admission	Humanitarian	0.55	0.17	0.23	0.88	258,060
Class of Admission	Parent	0.74	0.10	0.55	0.92	422,180
Class of Admission	Spouse	1.46	0.12	1.23	1.69	469,827
Region of Birth	Caribbean	0.76	0.15	0.47	1.05	307,967
Region of Birth	Central/South America	1.39	0.18	1.04	1.75	223,739
Region of Birth	China/India	0.64	0.13	0.39	0.88	272,434
Region of Birth	Mexico	0.67	0.10	0.48	0.87	396,601
Region of Birth	Other	1.35	0.11	1.14	1.55	660,437
Years as LPR	6 years	1.23	0.11	1.02	1.45	546,740
Years as LPR	7 years	1.08	0.10	0.88	1.29	530,681
Years as LPR	8 years	0.74	0.12	0.51	0.98	414,271
Years as LPR	9 years	0.86	0.13	0.60	1.11	369,486
Gender	Female	0.98	0.08	0.83	1.13	1,010,674
Gender	Male	1.05	0.08	0.89	1.22	848,335
Age	19-29 years	0.67	0.17	0.34	0.99	271,488
Age	30-39 years	1.05	0.15	0.76	1.34	350,658
Age	40-49 years	1.25	0.13	0.98	1.51	388,238
Age	50-59 years	1.23	0.13	0.98	1.48	348,597
Age	60-69 years	0.95	0.14	0.68	1.21	259,868
Age	70-79 years	0.75	0.14	0.47	1.03	159,466
Age	80+ years	0.48	0.14	0.20	0.75	82,853
Marital Status	Divorced/Widowed	0.89	0.17	0.55	1.22	151,985
Marital Status	Married	1.12	0.07	0.98	1.26	1,230,961
Marital Status	Single	0.77	0.12	0.53	1.01	460,261

Note: Shows estimated intention-to-treat (ITT) effects (in percentage points) with robust standard errors and corresponding 95% confidence intervals (LB and UB) for the overall sample and specific subgroups. The ITT estimates are based on regressions of the N-400 submission on the treatment assignment and randomization strata fixed effects. Regressions are fitted to the full sample and group specific subsamples, respectively.

**Table S4. Effect Heterogeneity: Class of Admission, Region of Birth, and Years as LPR**

	N-400 Submission		
	(1) Class of Admission	(2) Region of Birth	(3) Years as LPR
Treatment Group	0.55* (0.17)	0.64* (0.13)	0.74* (0.12)
Employment · Treatment Group	0.88* (0.27)		
Family · Treatment Group	0.33 (0.20)		
Parent · Treatment Group	0.18 (0.19)		
Spouse · Treatment Group	0.90* (0.20)		
Caribbean · Treatment Group		0.12 (0.19)	
Central/South America · Treatment Group		0.75* (0.22)	
Mexico · Treatment Group		0.03 (0.16)	
Other · Treatment Group		0.71* (0.16)	
6 years · Treatment Group			0.49* (0.16)
7 years · Treatment Group			0.34* (0.16)
9 years · Treatment Group			0.11 (0.18)
N	1861178	1861178	1861178

Regression coefficients with robust standard errors in parentheses. p < 0.05. Reference categories: Humanitarian for Class of admission, China/India for Region of birth, and 8 for Years as LPR. All models include randomization strata fixed effects.

**Table S5. Effect Heterogeneity: Gender, Age, and Marital Status**

	N=400 Submission		
	(1) Gender	(2) Age	(3) Marital Status
Treatment Group	0.98* (0.08)	0.67* (0.17)	0.78* (0.12)
Male · Treatment Group	0.07 (0.11)		
30-39 years · Treatment Group		0.38 (0.22)	
40-49 years · Treatment Group		0.58* (0.21)	
50-59 years · Treatment Group		0.56* (0.21)	
60-69 years · Treatment Group		0.27 (0.21)	
70-79 years · Treatment Group		0.07 (0.22)	
80+ years · Treatment Group		-0.19 (0.22)	
Divorced/Widowed · Treatment Group			0.11 (0.21)
Married · Treatment Group			0.34* (0.14)
N	1859009	1861178	1843207

Regression coefficients with robust standard errors in parentheses. p < 0.05. Reference categories: Female for Gender, 19-29 years old for Age, and Single for Marital Status. All models include randomization strata fixed effects and main effects for each moderator category (gender, age, and marital status).

**Table S6. Effect of the Letter on N-400 Submission by Mode of Submission and Use of Fee Waiver**

Outcome	Value	ITT	Std Error	95 LB	95 UB	N
Mode of Filing	Online	0.71	0.05	0.62	0.80	1,861,178
Mode of Filing	Mail	0.29	0.04	0.22	0.36	1,861,178
Application Fee	Full Fee	0.79	0.05	0.69	0.89	1,861,178
Application Fee	Any Fee Waiver	0.22	0.03	0.15	0.28	1,861,178
Application Fee	Partial Fee Waiver	0.11	0.02	0.06	0.16	1,861,178
Application Fee	Full Fee Waiver	0.11	0.02	0.06	0.15	1,861,178

Note: Shows estimated intention-to-treat (ITT) effects (in percentage points) with robust standard errors and corresponding 95% confidence intervals (LB and UB) for the overall sample with different outcomes based on mode of submission and use of fee waiver. The ITT estimates are based on regressions of the N-400 submission outcomes on the treatment assignment and randomization strata fixed effects. (N=1,861,178).

**Table S7. Robustness Checks: Effect of Letter on N-400 Submissions**

	N-400 Submission					
	(1)	(2)	(3)	(4)	(5)	(6)
treat	1.01* (0.06)	1.01* (0.05)	1.01* (0.06)	1.01* (0.05)	1.01* (0.06)	1.01* (0.05)
<i>N</i>	1861178	1836652	1861178	1836652	1861178	1836652
Drop Pre-Submissions	No	Yes	No	Yes	No	Yes
Controls	No	No	Yes	Yes	Yes	Yes
Lin-Estimator	No	No	No	No	Yes	Yes

Regression estimates shown of intention-to-treat effects with robust standard errors in parentheses. \*  $p < 0.05$ . Column (1) is based on a linear regression of N-400 submission on treatment assignment and randomization strata fixed effects. Columns (2), (4), and (6) exclude all observations of N-400 submissions made between the randomization date and the start of letter mailings on October 26, 2023; this exclusion was balanced between the treatment and control group. Columns (3) to (6) add controls for marital status, age, gender, state, and propensity to refile. Columns (5) and (6) estimate treatment effects using the method from Lin (2013), which adds the control variables mean centered and interacted with treatment assignment.

**Table S8. Robustness Checks: Effect of Letter Delivered on N-400 Submissions**

	Letter Delivered				N-400 Submission			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment Group	0.89*	0.90*	0.89*	0.90*				
	(0.00)	(0.00)	(0.00)	(0.00)				
Letter Delivered					1.13*	1.12*	1.13*	1.12*
					(0.06)	(0.06)	(0.06)	(0.06)
Observations	1861178	1836652	1861178	1836652	1861178	1836652	1861178	1836652
Partial F-Statistic	2500000	2800000	2500000	2800000				
Drop Pre-Submissions	No	Yes	No	Yes	No	Yes	No	Yes
Controls	No	No	Yes	Yes	No	No	Yes	Yes

Regression estimates shown with robust standard errors in parentheses. \* p < 0.05. Columns (1) to (4) show first stage estimates based on a linear regression of letter delivery on treatment assignment and randomization strata fixed effects. Columns (5) to (8) show local average treatment effect (LATE) estimates based on instrumental variable regressions of N-400 submissions on letter delivery, instrumented by treatment assignment, and randomization strata fixed effects. Columns (2), (4), (6) and (8) exclude all observations of N-400 submissions made between the randomization date and the start of letter mailings on October 26, 2023; this exclusion was balanced between the treatment and control group. Columns (3), (4), (7) and (8) add controls for marital status, age, gender, state, and propensity to refile.

**Table S9.** Treatment Effects Of Intervention, By Week

Week	Week Date	Treatment			Control			Treatment Effect		
		Mean	Lower Bound	Upper Bound	Mean	Lower Bound	Upper Bound	Estimate	Lower Bound	Upper Bound
0	10/26/2023	1.327	1.286	1.368	1.316	1.298	1.334	0.011	-0.034	0.055
1	11/2/2023	1.528	1.484	1.572	1.506	1.487	1.525	0.022	-0.026	0.069
2	11/9/2023	1.728	1.681	1.774	1.69	1.669	1.71	0.038	-0.013	0.089
3	11/16/2023	1.911	1.862	1.96	1.87	1.849	1.891	0.041	-0.013	0.094
4	11/23/2023	2.114	2.063	2.165	2.051	2.029	2.073	0.063	0.007	0.119
5	11/30/2023	2.297	2.243	2.351	2.202	2.179	2.225	0.095	0.037	0.153
6	12/7/2023	2.505	2.449	2.561	2.377	2.353	2.401	0.128	0.067	0.188
7	12/14/2023	2.707	2.649	2.765	2.545	2.52	2.57	0.162	0.099	0.225
8	12/21/2023	2.927	2.866	2.987	2.715	2.69	2.741	0.211	0.146	0.277
9	12/28/2023	3.161	3.098	3.224	2.882	2.856	2.908	0.279	0.211	0.346
10	1/4/2024	3.408	3.343	3.473	3.066	3.039	3.093	0.342	0.272	0.413
11	1/11/2024	3.647	3.58	3.714	3.244	3.216	3.272	0.403	0.331	0.475
12	1/18/2024	3.886	3.817	3.955	3.446	3.418	3.475	0.44	0.365	0.514
13	1/25/2024	4.148	4.077	4.219	3.663	3.633	3.692	0.485	0.408	0.562
14	2/1/2024	4.4	4.327	4.473	3.888	3.858	3.919	0.511	0.432	0.59
15	2/8/2024	4.653	4.578	4.729	4.113	4.082	4.145	0.54	0.459	0.621
16	2/15/2024	4.904	4.827	4.981	4.322	4.29	4.354	0.582	0.498	0.665
17	2/22/2024	5.169	5.09	5.248	4.54	4.508	4.573	0.628	0.543	0.713
18	2/29/2024	5.46	5.378	5.541	4.788	4.754	4.821	0.672	0.584	0.759
19	3/7/2024	5.752	5.668	5.835	5.057	5.023	5.091	0.694	0.605	0.784
20	3/14/2024	6.069	5.984	6.155	5.337	5.302	5.372	0.732	0.64	0.824
21	3/21/2024	6.403	6.316	6.491	5.641	5.605	5.677	0.762	0.668	0.856
22	3/28/2024	6.817	6.727	6.907	6.013	5.976	6.051	0.803	0.707	0.9
23	4/4/2024	7.359	7.265	7.452	6.484	6.445	6.522	0.875	0.774	0.975
24	4/11/2024	7.543	7.449	7.638	6.651	6.612	6.69	0.892	0.791	0.994
25	4/18/2024	7.727	7.631	7.822	6.822	6.782	6.862	0.904	0.802	1.007
26	4/25/2024	7.926	7.83	8.023	7.003	6.963	7.043	0.923	0.82	1.027
27	5/2/2024	8.133	8.035	8.231	7.197	7.157	7.238	0.935	0.83	1.04
28	5/9/2024	8.332	8.233	8.431	7.396	7.354	7.437	0.936	0.83	1.042
29	5/16/2024	8.52	8.42	8.62	7.57	7.528	7.611	0.95	0.843	1.057
30	5/23/2024	8.7	8.599	8.801	7.727	7.685	7.768	0.973	0.865	1.082
31	5/30/2024	8.848	8.747	8.95	7.872	7.83	7.914	0.976	0.867	1.085
32	6/6/2024	9.006	8.903	9.108	8.027	7.984	8.069	0.979	0.868	1.089
33	6/13/2024	9.165	9.062	9.269	8.164	8.121	8.207	1.001	0.89	1.111
34	6/20/2024	9.318	9.214	9.422	8.31	8.267	8.353	1.007	0.896	1.119

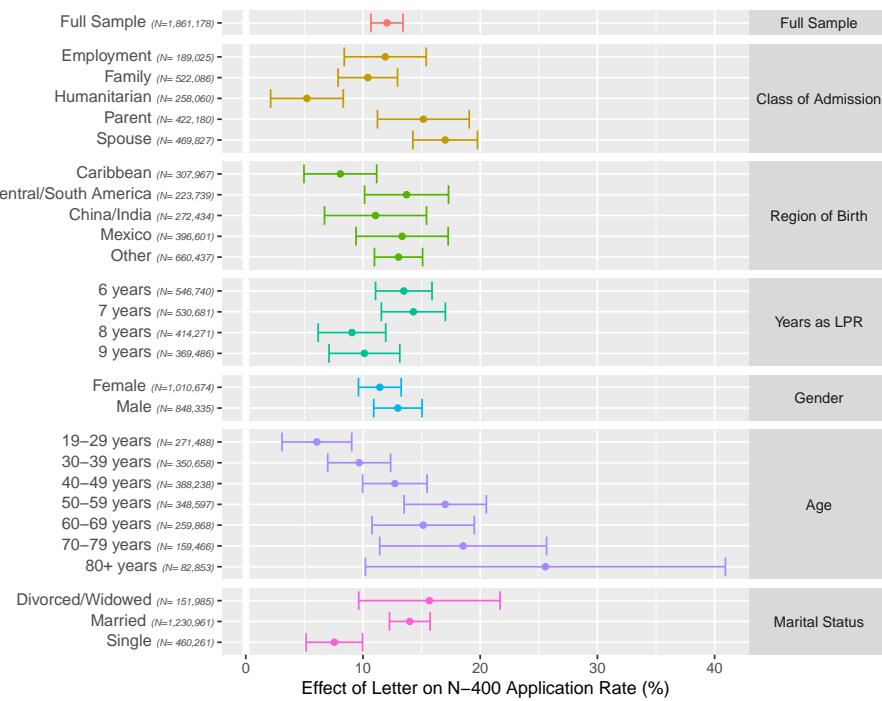
**Table S10.** Treatment Effects By Median Income Of Zip Code Of Residence

Column 1	Median income	Estimate	SD	Lower 95 CI	Upper 95 CI
1	6493	0.004807205	0.003821693	-0.00209609	0.011672302
2	11426.67347	0.004406514	0.005204594	-0.005133917	0.013616066
3	16360.34694	0.004835094	0.003920041	-0.002058687	0.011888455
4	21294.02041	0.004982948	0.003321847	-0.001196916	0.011361971
5	26227.69388	0.005173045	0.002800911	-9.68E-05	0.01081232
6	31161.36735	0.007626483	0.002000429	0.003523879	0.011252724
7	36095.04082	0.007691929	0.001675545	0.004706364	0.011088579
8	41028.71429	0.007807742	0.001521085	0.005031444	0.010861647
9	45962.38776	0.008804528	0.001394768	0.006323829	0.011647298
10	50896.06122	0.007479038	0.001508526	0.004384007	0.010174929
11	55829.73469	0.008323703	0.001472854	0.005511276	0.011030742
12	60763.40816	0.008326246	0.001557514	0.005528105	0.01160289
13	65697.08163	0.008786929	0.00156474	0.005944298	0.011578962
14	70630.7551	0.011781869	0.001678989	0.00852041	0.014811921
15	75564.42857	0.014276556	0.001593935	0.010860792	0.017364486
16	80498.10204	0.014652937	0.001655139	0.011417258	0.0176128
17	85431.77551	0.013453562	0.001686849	0.010510963	0.016725656
18	90365.44898	0.01060258	0.001796436	0.007107951	0.01422736
19	95299.12245	0.009098361	0.001991911	0.005492938	0.012678231
20	100232.7959	0.009672254	0.00195826	0.006224929	0.013751964
21	105166.4694	0.010598921	0.002119331	0.006517143	0.014386257
22	110100.1429	0.011760965	0.002238881	0.00786376	0.015983097
23	115033.8163	0.013370872	0.002388127	0.008843323	0.017495322
24	119967.4898	0.016060358	0.002357534	0.011004763	0.020936809
25	124901.1633	0.018452351	0.002355531	0.013670228	0.023098274
26	129834.8367	0.019776157	0.00262902	0.014262913	0.025711955
27	134768.5102	0.019975989	0.003251229	0.012953343	0.025790556
28	139702.1837	0.019712406	0.003476855	0.013406384	0.026161379
29	144635.8571	0.020544123	0.003621168	0.013390332	0.027450521
30	149569.5306	0.022073204	0.004183518	0.01387674	0.030135448
31	154503.2041	0.022970365	0.004654003	0.014027839	0.030746143
32	159436.8776	0.019712421	0.004540018	0.011128474	0.028229083

**Table S11.** Treatment and Control Group Means and Sample Sizes by Median Income of Zip Code

Zip Code		Treatment						Control				
Max	Average	N	Mean	St Dev	Lower 95 CI	Upper 95 CI		N	Mean	St Dev	Lower 95 CI	Upper 95 CI
7500	6493	4	0.0779	0.0037	0.0708	0.0857		18	0.0731	0.0015	0.0701	0.0759
12500	11426.67347	331	0.0766	0.0054	0.0659	0.0875		1862	0.0722	0.0022	0.0675	0.0762
17500	16360.34694	413	0.0806	0.004	0.0725	0.0885		2300	0.0758	0.0016	0.0726	0.0787
22500	21294.02041	1370	0.083	0.0033	0.0766	0.0893		7158	0.078	0.0013	0.0755	0.0806
27500	26227.69388	6984	0.0861	0.0027	0.0807	0.0909		36227	0.0809	0.001	0.079	0.0829
32500	31161.36735	9846	0.087	0.002	0.0833	0.0906		51911	0.0794	0.0008	0.078	0.0811
37500	36095.04082	17357	0.0846	0.0016	0.0814	0.0875		89659	0.0769	0.0007	0.0758	0.0782
42500	41028.71429	24205	0.0841	0.0013	0.0819	0.0869		125637	0.0763	0.0006	0.0751	0.0773
47500	45962.38776	20657	0.0864	0.0014	0.0835	0.0893		109119	0.0776	0.0005	0.0766	0.0787
52500	50896.06122	33290	0.0876	0.0014	0.0849	0.0906		171298	0.0802	0.0005	0.0792	0.0812
57500	55829.73469	22678	0.0936	0.0014	0.0906	0.0963		119416	0.0853	0.0005	0.0841	0.0862
62500	60763.40816	25523	0.0923	0.0013	0.0897	0.0947		131714	0.084	0.0005	0.083	0.0849
67500	65697.08163	18571	0.0926	0.0014	0.09	0.0953		96912	0.0838	0.0006	0.0827	0.0852
72500	70630.7551	15032	0.098	0.0015	0.0949	0.1012		78261	0.0863	0.0006	0.0852	0.0875
77500	75564.42857	16211	0.1003	0.0016	0.0976	0.1034		83207	0.0861	0.0006	0.085	0.0873
82500	80498.10204	12953	0.1008	0.0015	0.0976	0.1033		66793	0.0861	0.0006	0.0849	0.0873
87500	85431.77551	9812	0.1013	0.0016	0.0985	0.104		50619	0.0879	0.0007	0.0866	0.0891
92500	90365.44898	9451	0.1008	0.0016	0.0977	0.1042		49766	0.0902	0.0007	0.0889	0.0914
97500	95299.12245	7244	0.0993	0.0018	0.096	0.1029		37829	0.0902	0.0008	0.0886	0.0916
102500	100232.7959	7578	0.1	0.0019	0.0965	0.1036		39440	0.0903	0.0007	0.0887	0.0915
107500	105166.4694	6318	0.1016	0.0022	0.0973	0.1058		33327	0.091	0.0008	0.0894	0.0925
112500	110100.1429	5097	0.1023	0.0022	0.0986	0.1072		26307	0.0906	0.0008	0.089	0.092
117500	115033.8163	4138	0.1026	0.0022	0.0987	0.1069		21985	0.0892	0.001	0.0873	0.0908
122500	119967.4898	2894	0.1043	0.0023	0.0997	0.1085		15451	0.0882	0.001	0.0861	0.0899
127500	124901.1633	3327	0.107	0.0025	0.1025	0.1118		17273	0.0886	0.0011	0.0865	0.0906
132500	129834.8367	2999	0.11	0.0028	0.1051	0.1153		15628	0.0902	0.0012	0.088	0.0924
137500	134768.5102	2692	0.112	0.0032	0.1062	0.119		13440	0.092	0.0013	0.0897	0.0943
142500	139702.1837	1165	0.1108	0.0032	0.1053	0.1177		6327	0.0911	0.0013	0.0886	0.0935
147500	144635.8571	1465	0.1091	0.0033	0.1032	0.1164		7544	0.0885	0.0013	0.0859	0.0911
152500	149569.5306	1355	0.108	0.0038	0.1013	0.1155		7073	0.086	0.0015	0.0828	0.0886
157500	154503.2041	657	0.1074	0.0041	0.1001	0.115		3380	0.0845	0.0016	0.0812	0.0873
162500	159436.8776	725	0.1036	0.0039	0.0962	0.1108		4160	0.0839	0.0016	0.0805	0.0866

**Fig. S3. Percent Effect of the Letter on N-400 Submission Overall and by Subgroups:** This figure presents the estimated intention-to-treat effects with 95% confidence intervals, expressed as the percent increase over the baseline N-400 submission rate in the control group. Effects are displayed for the overall sample as well as for specific subgroups.



**Fig. S4. Effect of the Letter on N-400 Submission by Mode of Submission and Use of Fee Waiver:** This figure presents the estimated intention-to-treat effects with 95% confidence intervals, expressed as the percent increase over the mean outcome in the control group. The estimates cover the following outcomes: whether the N-400 application was filed online or by mail, and whether the applicant paid the full fee or used a partial or full fee waiver. (N=1,861,178)

