Do Politicians Discriminate Against Internal Migrants? Evidence from Nationwide Field Experiments in India

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ONLINE APPENDIX

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A Summary statistics

Table A1: Summary statistics: letters experiment (main estimation sample)

Statistic	N	Mean	St. Dev.	Min	Max
Dependent variable: callback received	2,933	0.139	0.346	0	1
Treatment: local	2,933	0.511	0.500	0	1
Treatment: Hindu	2,933	0.509	0.500	0	1
Treatment: high skilled	2,933	0.492	0.500	0	1
Treatment: neighborhood problem	2,933	0.496	0.500	0	1
Treatment: party member	2,933	0.502	0.500	0	1
Councilor: Bangla speaker	2,933	0.048	0.214	0	1
Councilor: Gujarati speaker	2,933	0.104	0.305	0	1
Councilor: Hindi speaker	2,933	0.401	0.490	0	1
Councilor: Kannada speaker	2,933	0.086	0.281	0	1
Councilor: Malayalam speaker	2,933	0.034	0.182	0	1
Councilor: Marathi speaker	2,933	0.149	0.356	0	1
Councilor: Oriya speaker	2,933	0.017	0.129	0	1
Councilor: Tamil speaker	2,933	0.135	0.342	0	1
Councilor: Telugu speaker	2,933	0.025	0.157	0	1
Councilor: margin of victory	1,883	0.150	0.129	0.000	0.829
Councilor: female	2,933	0.422	0.494	0	1
Councilor: Muslim	2,933	0.081	0.273	0	1
Councilor: national party	2,157	0.542	0.498	0.000	1.000

Table A2: Summary statistics: SMS experiment

Statistic	N	Mean	St. Dev.	Min	Max
Dependent variable: callback received	2,513	0.129	0.335	0	1
Treatment: migrant	2,513	0.758	0.429	0	1
Treatment: Hindu	2,513	0.501	0.500	0	1
Treatment: neighborhood problem	2,513	0.500	0.500	0	1
Treatment: high skilled	2,513	0.499	0.500	0	1

Table A3: Summary statistics: survey experiment

Statistic	N	Mean	St. Dev.	Min	Max
Dependent variable: registered	411	1.238	0.427	1.000	2.000
Dependent variable: likelihood of being registered	412	1.830	1.123	1.000	4.000
Treatment: migrant	427	0.459	0.499	0	1

B   Additional data description

B.1   Municipal councils election data

Data on councilors' margins of victory in the prior election, which are used in the balance tests, are available for the following cities: Kolkata, Dehradun, Lucknow, Agra, North Delhi, South Delhi, East Delhi, Panaji, Bangalore, Coimbatore, Chennai, Bhubaneshwara, Thiruvananthapuram, Gulbarga, Madurai, Mumbai, Chandigarh, Ranchi, Hyderabad, and Jaipur. The data were gathered from the websites of the state election commissions and using Right to Information (RTI) requests. Our thanks to Anirvan Chowdhury and Saad Gulzar for providing the election results for Uttar Pradesh municipalities.

For 18 cities, we compute margin of victory as $\frac{WinnerVotes - RunnerUpVotes}{TotalVotes}$. For Dehra Dun and Gulbarga, $TotalVotes$ was not available; only $WinnerVotes$ and $RunnerUpVotes$ could be accessed. Thus for these cities we compute margin of victory as $\frac{WinnerVotes - RunnerUpVotes}{WinnerVotes + RunnerUpVotes}$. Because most elections involve only two viable candidates, this small measurement difference is unlikely to matter for the results.

B.2   Coding councilors' party type

We classify councilors' parties as national or non-national using their official Election Commission of India designtation for 2015; a copy of the Commission's list is available at bit.ly/2PXZAdx. Data on councilors' political parties were taken from the election data and (in several cases) from newspaper reports about election victors.

B.3   Languages

For all cities except those in Punjab, the experimental design employed the dominant local language spoken in each city. For logistical reasons, it was necessary to use Hindi for cities in Punjab, which is a state where both Punjabi and Hindi are commonly spoken and bilingualism is the norm.

C Regression estimation of main results for the letters experiment

In the main paper we perform one-sided t-tests separately for each randomly assigned manipulation. Here, we conduct a regression analysis, inputting all of the manipulations as regressors in a single model. Note that the ordinary least squares model implements two-sided tests by default. This is a useful check because of a chance correlation between the migrant treatment and the high-skilled treatment that arose under simple randomization. Accounting for this statistically does not affect the results, this analysis demonstrates.

Table A4: Regression analysis, letters experiment. Robust standard errors in parentheses.

	Dependent variable:
	Callback received (0/1)
Local (0/1)	0.029**
	(0.013)
High skill (0/1)	0.027**
	(0.013)
Hindu (0/1)	0.027**
	(0.013)
Neighborhood problem (0/1)	0.019
	(0.013)
Party member (0/1)	0.010
	(0.013)
Constant	0.082***
	(0.015)
Observations	2,933
Note:	*p<0.1; **p<0.05; ***p<0.01

D   Main results in letters experiment with full data

We re-run the primary analyses (estimates of the main effects for each treatment condition) including the 80 "mistake" cases: namely, letters that were sent from putative out-of-state migrants yet contained a within-state place of origin. The results are unaffected, substantively and in terms of statistical significance.
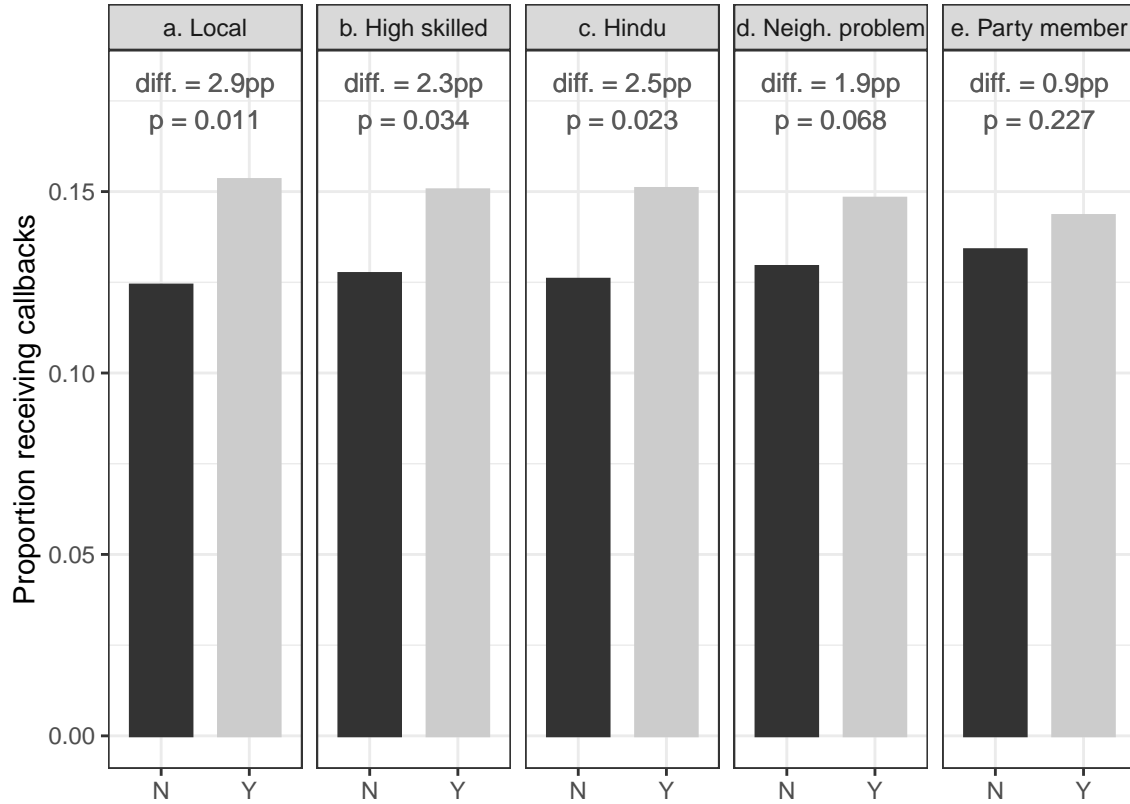

Figure A1: Callback rates for requests for help, across five randomized attributes. Differences and p-values are based on one-sided t-tests. N is 3013 for all models.

E   Regression estimation of main result in letters experiment adjusting for imbalanced covariate

Table A5: Regression analysis of letters experiment data, including covariate found to be imbalanced in balance test. Robust standard errors in parentheses.

	Dependent variable:
	Callback received (0/1)
Local (0/1)	0.028**
	(0.013)
Marathi-language councilor (0/1)	0.053***
	(0.020)
Constant	0.117***
	(0.009)
Observations	2,933
Note:	*p<0.1; **p<0.05; ***p<0.01

F Further descriptive evidence: 2011 Census of India

Table A6: Study cities ranked by size of male migrant population. (All percentages pertain to the male migrant population.) The data are drawn from the 2011 Census of India Tables D-3, *Migrants by place of last residence, duration of residence and reasons for migration 2011 (India/State/UT/District/City/UA)*, available at bit.ly/2x0zqRY.

City	Total number of male migrants	Percent reporting work/business as reason for migration	Percent from rural areas	Percent from another state
Mumbai	3010953	53%	72%	67%
Bangalore	2324298	47%	37%	36%
Delhi	2300022	52%	61%	92%
Hyderabad	2274551	33%	26%	7%
Surat	1692823	49%	79%	55%
Ahmadabad	1291727	37%	55%	28%
Pune	913431	42%	44%	24%
Thane	739454	37%	35%	28%
Chennai	672847	33%	23%	26%
Lucknow	650479	37%	38%	9%
Jaipur	555103	47%	55%	24%
Ludhiana	514561	39%	37%	39%
Bhopal	414553	42%	43%	26%
Kolkata	384445	45%	62%	62%
Bhubaneswar	333470	46%	59%	8%
Chandigarh	321139	54%	60%	95%
Coimbatore	258579	40%	21%	13%
Raipur	253734	47%	50%	39%
Amritsar	252434	23%	29%	16%
Agra	251130	22%	19%	7%
Ranchi	217635	44%	48%	48%
Jalandhar	206486	34%	33%	33%
Madurai	171106	28%	22%	3%
Dehradun	153502	41%	44%	50%
Thiruvananthapuram	151725	21%	40%	11%
Gulbarga	131655	22%	31%	4%
Shimla	66422	53%	68%	25%
Panaji	42326	28%	44%	34%

G Formal interactions tests: letters experiment

Table A7: Assessing interaction effects between migrant treatment and other attributes. Robust standard errors in parentheses.

	Dependent variable:			
	Callback received (0/1)			
	(1)	(2)	(3)	(4)
Local (0/1) x High skill (0/1)	0.058**			
	(0.025)			
Local (0/1) x Hindu (0/1)		0.030		
		(0.025)		
Local (0/1) x Neighborhood problem (0/1)			−0.027	
			(0.025)	
Local (0/1) x Party member (0/1)				−0.023
				(0.025)
High skill (0/1)	−0.003			
	(0.017)			
Hindu (0/1)		0.013		
		(0.017)		
Neighborhood problem (0/1)			0.034*	
			(0.017)	
Party member (0/1)				0.023
				(0.017)
Local (0/1)	−0.00001	0.014	0.043**	0.042**
	(0.017)	(0.017)	(0.017)	(0.018)
Constant	0.125***	0.117***	0.107***	0.112***
	(0.012)	(0.012)	(0.011)	(0.012)
Observations	2,933	2,933	2,933	2,933
Note:			*p<0.1; **p<0.05; ***p<0.01	

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H   Multiple comparisons corrections

We present a version of Figures 2 and 4 (from the main text) with the set of p-values in those figures re-calculated using the Benjamini-Hochberg correction for multiple comparisons. The correction is implemented using the `p.adjust` function in `R`. A description of the method is available at: bit.ly/33PfEFa.
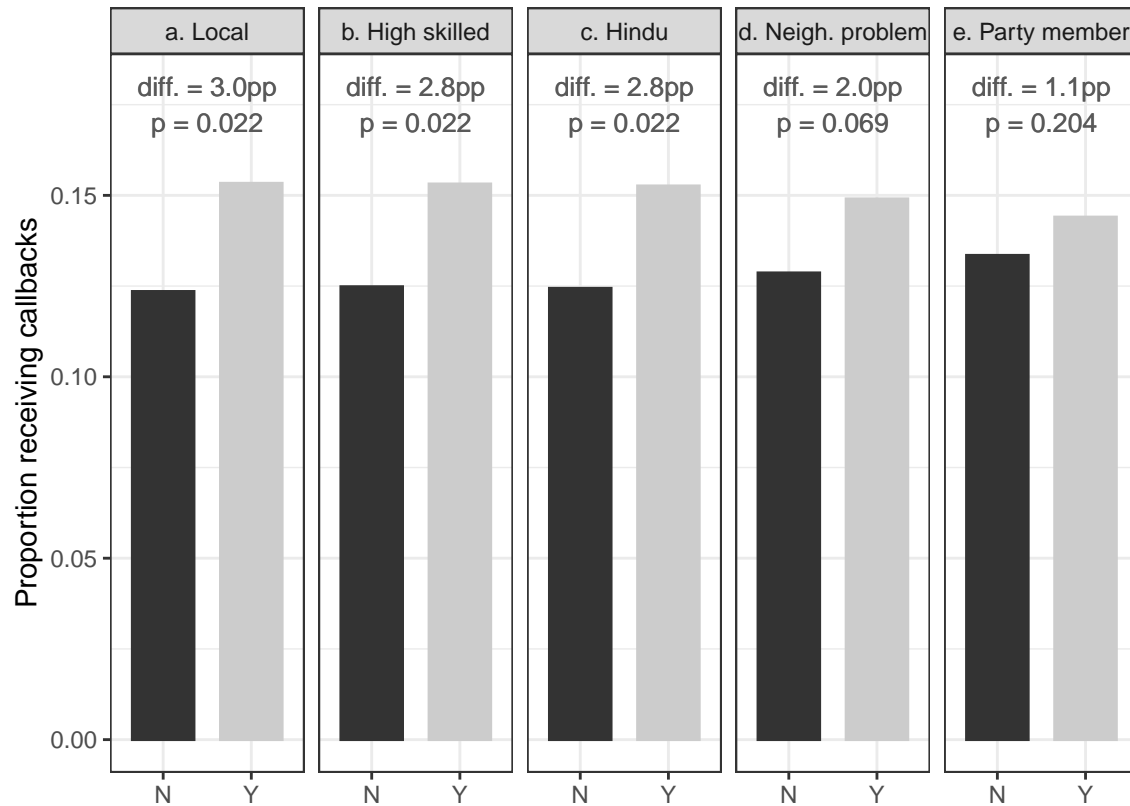

Figure A2: Callback rates for requests for help, across five randomized attributes. Differences and p-values are based on one-sided t-tests. P-values are corrected for multiple comparisons using the Benjamini-Hochberg method. N is 2933 for all models.

We next present a version of Figure 5, once more with the set of p-values in that figure re-calculated using the Benjamini-Hochberg correction for multiple comparisons.
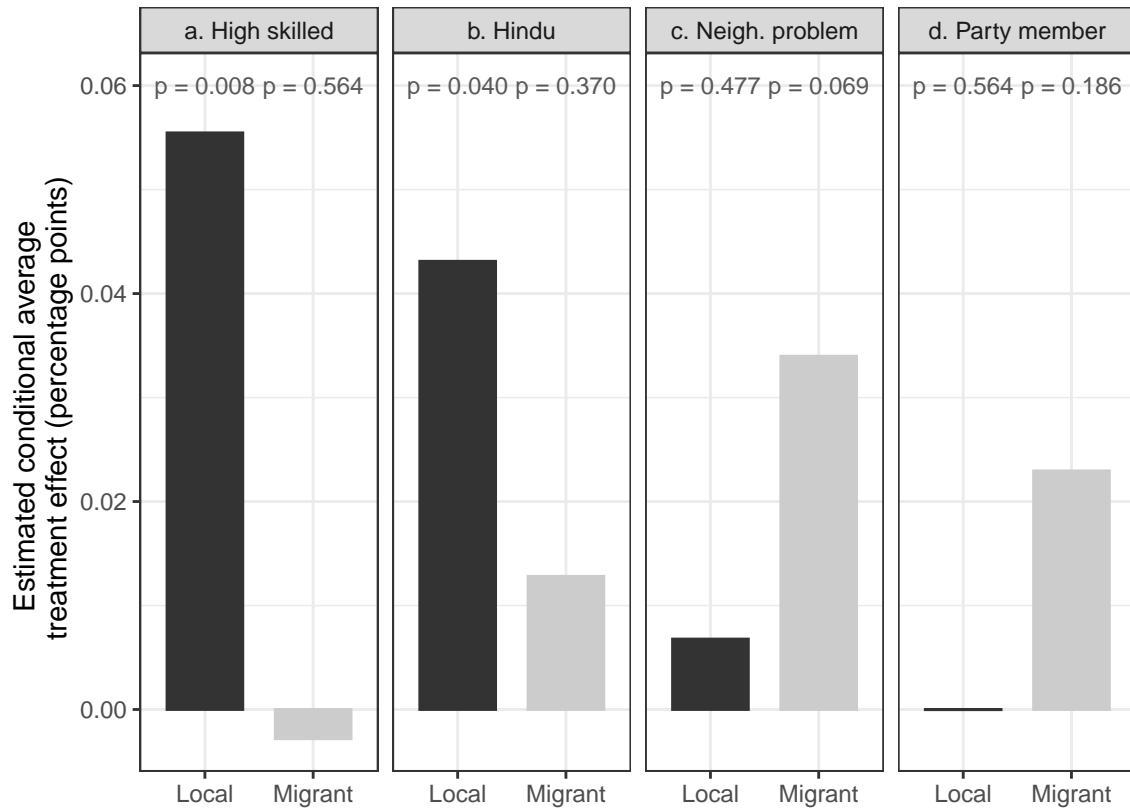

Figure A3: Estimated average treatment effects on callback rates induced by other randomized attributes, conditional on signaling the requester to be a local or a migrant. Differences and p-values based on one-sided t-tests. P-values are corrected for multiple comparisons using the Benjamini-Hochberg method. N is 1500 for *Local* models and 1433 for *Migrant* models.

I Effects in letters experiment by party type

Table A8: List of political parties of councilors included in the sample, by type, as classified by the Election Commission of India.

National Parties	State Parties	Registered Unrecognized Parties	List Parties
Indian National Congress	All India Trinamool Congress	Revolutionary Socialist Party	Babush List
Communist Party of India	All India Forward Bloc	Peace Party	Panaji First
Communist Party of India (Marxist)	Rashtriya Janta Dal	Marumalarchi Dravida Munnetra Kazhagam	
Bharatiya Janata Party	Samajwadi Party	Socialist Janata (Democratic)	
Bahujan Samaj Party	Rashtriya Lok Dal	Communist Marxist Party	
National Congress Party	Lok Janshakti Party	Congress (Secular)	
	Indian National Lok Dal	Janathipathiya Samrakshana Samithy	
	Janata Dal (Secular)	Social Democratic Party of India	
	All India Anna Dravida Munnetra Kazhagam	Karnataka Janata Paksha	
	Dravida Munnetra Kazhagam	Republican Party of India	
	Desiya Murpokku Dravida Kazhagam	Bharipa Bahujan Mahasangh	
	Biju Janata Dal	Akhil Bharatiya Sena	
	Indian Union Muslim League	Republican Party of India (Athawale)	
	Pattali Makkal Katchi	All India Majlis-e-Ittehadul Muslimeen	
	Shiv Sena	Majlis Bachao Tehreek	
	Maharashtra Navnirman Sena	Praja Rajyam Party	
	Shiromani Akali Dal	People's Party of Punjab	
	Telugu Desam Party		

Table A9: Differences in proportions of callbacks to migrants versus locals, subsetting the letters experiment sample by party type. Each row represents one model. Differences and p-values are based on one-sided t-tests.

Party-type subgroup	Callback prop.		C2 - C1	p-value	N
	Migrants (C1)	Locals (C2)			
National	0.145	0.200	0.055	0.006	1169
State; registered unrecognized; list	0.114	0.118	0.004	0.428	798
Independents	0.150	0.189	0.039	0.240	190

J Assessing possible spillovers between the two experiments

Table A10: Testing for spillovers from experiment 1 to experiment 2.

	Dependent variable:
	SMS experiment: Callback received (0/1)
Letters experiment: Local (0/1)	0.003
	(0.013)
Letters experiment: High skill (0/1)	−0.008
	(0.013)
Letters experiment: Hindu (0/1)	0.009
	(0.013)
Letters experiment: Neighborhood problem (0/1)	0.002
	(0.013)
Letters experiment: Party member (0/1)	−0.00005
	(0.013)
Constant	0.125***
	(0.016)
Observations	2,513
Note:	*p<0.1; **p<0.05; ***p<0.01

Table A11: Correlation between callbacks in experiments 1 and 2.

	Dependent variable:
	SMS experiment: Callback received (0/1)
Letters experiment: Callback received (0/1)	0.053**
	(0.021)
Constant	0.121***
	(0.007)
Observations	2,513
Note:	*p<0.1; **p<0.05; ***p<0.01

K Testing for alternative in-group preferences in the letters experiment

Table A12: Estimation of whether politicians are more responsive to migrants from states where the same languge is spoken as in the destination city. The sample is restricted to politicians assigned to receive a migrant requester.

	Dependent variable:
	Callback received (0/1)
Linguistic match (0/1)	0.056
	(0.037)
Constant	0.119***
	(0.009)
Observations	1,433
Note:	*p<0.1; **p<0.05; ***p<0.01

Table A13: Estimation of whether politicians are more responsive to requesters of the same gender.

	Dependent variable:
	Callback received (0/1)
Gender match (0/1)	−0.023*
	(0.013)
Constant	0.150***
	(0.009)
Observations	2,933
Note:	*p<0.1; **p<0.05; ***p<0.01