

Online Appendix for

Ethnoracial Homogeneity and Public Outcomes:

The (Non)effects of Diversity

Explanatory and Outcome Variables

Demographic data

All demographic variables were constructed using the microdata from the 2010 Population Census, from the Instituto Brasileiro de Geografia e Estatística (IBGE).

Social Spending Per Capita and Share: Total and Disaggregated

These variables shows the amount of public resources destined to the provision of collective “productive goods” (Alesina, Baqir, and Easterly 1999), such as education, housing, health, basic urban infrastructure and transportation. All the data come from the Instituto de Pesquisa Econômica Aplicada (IPEA).

Provision quality

The quality measures concern education and healthcare provision. These indices come from a comprehensive study carried out by Arretche, Fusaro and Vaughan in the Centro de Estudos da Metrópole (CEM), which take into account a set of more than 10 indicators per sector in order to build two overall measures of quality (one for education and one for health) at the municipal level.¹⁸

Geographic controls

The data come from the National Institute of Geology (INGEO) and include *Latitude*, *Distance to Coast*, *Altitude*, *Rainfall*, and *Sunshine*. For details, see Naritomi, Soares, and Assunção (2012).

¹⁸For instance, the health indicator is comprised, among other variables, of infant mortality rate, hospitalization rate and vaccine coverage. As for the education index, it consists of coverage below 6 years of age, failure and abandonment rates, proportion of municipal schools with below-average grades in the national standardized test, etc. For more detailed information, see: <http://web.fflch.usp.br/centrodametropole>.

Summary statistics

Table A1: Full Sample (n = 5505)

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Spending Per capita, log	7.12	0.41	4.92	6.83	7.36	9.42
Spending on Education, share	0.42	0.12	0.00	0.33	0.50	0.93
Spending on Healthcare, share	0.32	0.09	0.00	0.27	0.36	1.00
Education quality	6.50	1.81	1.65	4.87	8.12	10.00
Healthcare quality	5.57	1.00	1.92	4.89	6.24	9.35
Fractionalization	0.47	0.12	0.01	0.42	0.55	0.73
Whites, share	0.47	0.24	0.01	0.26	0.67	1.00
Income per capita, log	6.08	0.50	4.57	5.63	6.48	7.62
Population, log	9.43	1.14	6.69	8.58	10.08	16.24
Population over 65, share	0.08	0.02	0.01	0.07	0.10	0.20
Population under 18, share	0.31	0.06	0.17	0.27	0.35	0.72
GINI	0.49	0.07	0.28	0.45	0.54	0.80
Years of schooling	9.46	1.10	4.34	8.74	10.21	12.83
Area, log	6.20	1.28	1.06	5.32	6.94	11.99
Urban, share	0.64	0.22	0.04	0.47	0.82	1.00
Poor, share	0.23	0.18	0.002	0.07	0.39	0.79
Latitude	-16.40	8.27	-33.69	-22.80	-8.43	4.60
Distance to Coast, log	5.37	1.33	0.003	4.76	6.24	7.91
Altitude	4.12	2.93	0.00	1.53	6.32	16.28
Rainfall	12.80	3.96	3	12	15	33
Sunshine	21.33	3.26	12	18	24	30

Table A2: Sample of Majority White Municipalities Only (n = 2280)

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Spending Per capita, log	7.27	0.40	5.72	6.99	7.53	9.42
Spending on Education, share	0.35	0.09	0.00	0.29	0.41	0.81
Spending on Healthcare, share	0.32	0.09	0.00	0.26	0.36	0.92
Education quality	7.88	1.10	3.49	7.19	8.69	10.00
Healthcare quality	6.00	0.93	2.90	5.34	6.61	9.35
Fractionalization	0.40	0.14	0.01	0.29	0.51	0.63
Whites, share	0.72	0.13	0.50	0.61	0.83	1.00
Income per capita, log	6.48	0.30	4.95	6.31	6.67	7.62
Population, log	9.30	1.23	6.69	8.39	9.98	16.24
Population over 65, share	0.09	0.02	0.02	0.08	0.11	0.20
Population under 18, share	0.28	0.04	0.17	0.25	0.29	0.72
GINI	0.46	0.06	0.28	0.42	0.50	0.68
Years of schooling	10.11	0.94	7.00	9.50	10.76	12.83
Area, log	5.76	0.96	1.06	5.11	6.32	10.18
Urban, share	0.70	0.22	0.06	0.53	0.89	1.00
Poor, share	0.09	0.08	0.002	0.04	0.12	0.65
Latitude	-23.81	4.35	-33.69	-27.26	-21.37	-5.67
Distance to Coast, log	5.42	1.13	0.003	5.00	6.17	7.50
Altitude	5.39	2.85	0.00	3.85	7.50	16.28
Rainfall	13.95	2.36	6	12	15	21
Sunshine	19.97	2.99	12	18	21	27

Table A3: Sample of Minority White Municipalities Only (n = 3225)

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Spending Per capita, log	7.00	0.37	4.92	6.76	7.22	8.92
Spending on Education, share	0.46	0.13	0.00	0.37	0.55	0.93
Spending on Healthcare, share	0.32	0.10	0.00	0.27	0.37	1.00
Education quality	5.52	1.57	1.65	4.31	6.68	9.81
Healthcare quality	5.27	0.95	1.92	4.62	5.91	8.32
Fractionalization	0.52	0.07	0.18	0.48	0.56	0.73
Whites, share	0.29	0.11	0.01	0.20	0.37	0.50
Income per capita, log	5.79	0.41	4.57	5.49	6.09	7.53
Population, log	9.52	1.07	6.70	8.74	10.11	14.80
Population over 65, share	0.08	0.02	0.01	0.06	0.09	0.15
Population under 18, share	0.34	0.05	0.20	0.31	0.37	0.58
GINI	0.52	0.06	0.33	0.48	0.55	0.80
Years of schooling	9.00	0.96	4.34	8.45	9.64	12.21
Area, log	6.52	1.39	2.41	5.54	7.35	11.99
Urban, share	0.60	0.21	0.04	0.44	0.76	1.00
Poor, share	0.34	0.16	0.01	0.21	0.46	0.79
Latitude	-11.16	6.08	-26.63	-16.08	-6.47	4.60
Distance to Coast, log	5.34	1.46	0.01	4.54	6.37	7.91
Altitude	3.23	2.64	0.00	0.98	5.05	12.68
Rainfall	11.93	4.64	3	9	15	33
Sunshine	22.36	3.06	12	21	24	30

Additional analyses

Table A4: White Shares and Public Goods Provision

	Total spending	Educ. share	Heal. share	Educ. quality	Heal. quality
	(1)	(2)	(3)	(4)	(5)
Whites, share	−0.300*** (0.038)	0.072*** (0.012)	−0.016 (0.012)	1.255*** (0.117)	0.855*** (0.111)
Income PC, log	0.811*** (0.043)	−0.041*** (0.014)	0.015 (0.014)	1.848*** (0.136)	0.156 (0.129)
Population, log	−0.289*** (0.005)	0.030*** (0.002)	0.029*** (0.002)	−0.209*** (0.016)	−0.203*** (0.015)
Pop. over 65, share	−3.230*** (0.283)	−0.371*** (0.090)	0.183** (0.089)	−1.216 (0.877)	−2.421*** (0.833)
Pop. under 18, share	−0.215 (0.176)	0.322*** (0.056)	−0.271*** (0.056)	−3.496*** (0.546)	−2.651*** (0.518)
GINI	−1.023*** (0.129)	−0.049 (0.041)	0.016 (0.041)	−3.963*** (0.404)	−0.671* (0.383)
Years of schooling	0.010** (0.005)	−0.006*** (0.002)	0.006*** (0.002)	0.219*** (0.015)	0.058*** (0.015)
Area, log	0.012*** (0.004)	−0.001 (0.001)	0.002* (0.001)	−0.001 (0.014)	−0.062*** (0.013)
Urban, share	−0.085*** (0.026)	−0.025*** (0.008)	0.018** (0.008)	−0.127 (0.081)	−0.964*** (0.077)
Poor, share	1.271*** (0.134)	0.198*** (0.043)	0.022 (0.043)	2.932*** (0.419)	−0.061 (0.398)
Constant	5.285*** (0.268)	0.335*** (0.085)	−0.088 (0.085)	−2.536*** (0.837)	8.065*** (0.795)
State FE	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	5,150	5,146	5,149	5,503	5,503
Adjusted R ²	0.598	0.561	0.234	0.791	0.388

The outcome variables are the log of total spending per capita, education and healthcare share and quality in a municipality, respectively. All specifications include “state fixed effects” based on 26 Brazilian states. For variable description, see Appendix. The standard errors are given in parentheses, [†]p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A5: Racial Demography and Public Goods Provision: Robustness to geographic controls

Panel A: Majority White Municipalities Only

	Total spending		Educ. share		Heal. share		Educ. quality		Heal. quality	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Fractionalization	0.509*** (0.077)		-0.025 (0.022)		0.062** (0.023)		-2.108*** (0.226)		-1.001*** (0.230)	
Whites, share		-0.444*** (0.078)		0.022 (0.022)		-0.064** (0.023)		2.045*** (0.229)		0.976*** (0.233)
State FE	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Standard controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Geographic controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	2,074	2,074	2,071	2,071	2,071	2,071	2,139	2,139	2,139	2,139
Adjusted R ²	0.585	0.582	0.391	0.391	0.317	0.318	0.518	0.516	0.283	0.282

Panel B: Minority White Municipalities Only

	Total spending		Educ. share		Heal. share		Educ. quality		Heal. quality	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Fractionalization	-0.006 (0.100)		-0.017 (0.034)		0.096** (0.034)		-0.242 (0.308)		-0.347 (0.276)	
Whites, share		-0.103 (0.079)		0.063* (0.027)		0.015 (0.027)		1.202*** (0.249)		0.830*** (0.223)
State FE	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Standard controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Geographic controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	2,587	2,587	2,586	2,586	2,589	2,589	2,831	2,831	2,831	2,831
Adjusted R ²	0.527	0.527	0.533	0.534	0.232	0.230	0.714	0.717	0.347	0.349

All specifications include “state fixed effects” based on 26 Brazilian states; “standard control” variables as in Table 1, as well “geographic control” variables. For variable description, see Appendix. The standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01 ; ***p<0.001.

Table A6: Racial Demography and Public Goods Provision: Robustness Checks

	Total spending		Educ. share		Heal. share		Educ. quality		Heal. quality	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Fractionalization	0.043*** (0.006)		-0.008*** (0.002)		0.009*** (0.002)		-0.169*** (0.020)		-0.103*** (0.019)	
White, shares		-0.081*** (0.010)		0.016*** (0.003)		-0.003 (0.003)		0.364*** (0.032)		0.154*** (0.030)
Income per capita, log	0.450*** (0.024)	0.440*** (0.023)	-0.018* (0.008)	-0.017* (0.007)	0.013+ (0.008)	0.004 (0.007)	0.870*** (0.074)	0.886*** (0.072)	0.030 (0.069)	0.073 (0.067)
Population, log	-0.328*** (0.006)	-0.328*** (0.006)	0.031*** (0.002)	0.031*** (0.002)	0.035*** (0.002)	0.036*** (0.002)	-0.216*** (0.020)	-0.215*** (0.020)	-0.226*** (0.018)	-0.227*** (0.018)
Pop. over 65, share	-0.069*** (0.007)	-0.070*** (0.007)	-0.007** (0.002)	-0.007** (0.002)	0.004 (0.002)	0.003 (0.002)	-0.053* (0.023)	-0.053* (0.023)	-0.040+ (0.021)	-0.036+ (0.021)
Pop. under 18, share	0.008 (0.011)	-0.005 (0.011)	0.016*** (0.003)	0.019*** (0.003)	-0.017*** (0.003)	-0.017*** (0.003)	-0.249*** (0.033)	-0.190*** (0.034)	-0.174*** (0.031)	-0.150*** (0.031)
GINI	-0.087*** (0.009)	-0.080*** (0.009)	-0.003 (0.003)	-0.004 (0.003)	-0.001 (0.003)	0.003 (0.003)	-0.228*** (0.029)	-0.247*** (0.028)	-0.031 (0.027)	-0.053* (0.026)
Years of schooling	0.018** (0.006)	0.017** (0.006)	-0.006** (0.002)	-0.006** (0.002)	0.006** (0.002)	0.006** (0.002)	0.226*** (0.018)	0.235*** (0.018)	0.064*** (0.017)	0.067*** (0.017)
Area, log	0.028*** (0.007)	0.030*** (0.007)	0.002 (0.002)	0.002 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.033 (0.020)	-0.040* (0.020)	-0.056** (0.019)	-0.058** (0.019)
Urban, share	-0.013* (0.006)	-0.015* (0.006)	-0.005* (0.002)	-0.005* (0.002)	0.005* (0.002)	0.006** (0.002)	-0.029 (0.019)	-0.017 (0.019)	-0.200*** (0.018)	-0.200*** (0.018)
Poor, share	0.298*** (0.027)	0.265*** (0.026)	0.032*** (0.008)	0.038*** (0.008)	0.010 (0.009)	-0.0005 (0.008)	0.322*** (0.083)	0.446*** (0.080)	-0.095 (0.078)	-0.006 (0.075)
Latitude	-0.012 (0.024)	-0.064* (0.025)	-0.007 (0.008)	0.003 (0.008)	0.013+ (0.008)	0.011 (0.008)	0.204** (0.074)	0.427*** (0.076)	-0.001 (0.069)	0.095 (0.071)
Dist. to Coast, log	-0.033*** (0.007)	-0.031*** (0.007)	-0.006** (0.002)	-0.006** (0.002)	0.007*** (0.002)	0.009*** (0.002)	0.084*** (0.021)	0.075*** (0.021)	0.009 (0.020)	0.001 (0.020)
Altitude	-0.017** (0.006)	-0.007 (0.006)	0.009*** (0.002)	0.007*** (0.002)	0.002 (0.002)	0.002 (0.002)	0.064*** (0.017)	0.020 (0.018)	0.148*** (0.016)	0.131*** (0.017)
Rainfall	0.011 (0.008)	0.013+ (0.008)	-0.006* (0.002)	-0.006* (0.002)	-0.007** (0.002)	-0.007** (0.002)	-0.049* (0.023)	-0.058* (0.023)	0.050* (0.021)	0.047* (0.022)
Sunshine	0.006 (0.006)	0.008 (0.006)	-0.005** (0.002)	-0.006** (0.002)	-0.005** (0.002)	-0.005* (0.002)	0.021 (0.019)	0.012 (0.019)	-0.047** (0.018)	-0.051** (0.018)
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,661	4,661	4,657	4,657	4,660	4,660	4,970	4,970	4,970	4,970
Adjusted R ²	0.591	0.592	0.563	0.564	0.250	0.247	0.794	0.796	0.404	0.403

A6

All predictor variables are standardized. All specifications include “state fixed effects” based on 26 Brazilian states. For variable description, see Appendix. The standard errors are given in parentheses, +p<0.1; *p<0.05; **p<0.01 ; ***p<0.001.

Table A7: Racial Group Shares and Public Goods Provision: Robustness Checks

	Total spending		Educ. share		Heal. share		Educ. quality		Heal. quality	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
White, shares	-0.331*** (0.043)		0.066*** (0.014)		-0.013 (0.014)		1.492*** (0.133)		0.630*** (0.124)	
Blacks, shares		0.448*** (0.102)		-0.020 (0.032)		0.034 (0.033)		-2.676*** (0.309)		-1.458*** (0.289)
Brown, shares		0.284*** (0.047)		-0.066*** (0.015)		0.008 (0.015)		-1.263*** (0.146)		-0.479*** (0.137)
Asian, shares		1.247*** (0.475)		-0.433*** (0.150)		-0.058 (0.152)		-0.851 (1.426)		0.993 (1.333)
Indigenous, shares		0.384*** (0.133)		-0.268*** (0.042)		0.231*** (0.043)		-0.121 (0.414)		-1.807*** (0.387)
State FE	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Standard controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Geographic controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	4,661	4,661	4,657	4,657	4,660	4,660	4,970	4,970	4,970	4,970
Adjusted R ²	0.592	0.593	0.564	0.567	0.247	0.252	0.796	0.798	0.403	0.405

The outcome variables are the log of total spending per capita, education and healthcare share and quality in a municipality, respectively. All specifications include “state fixed effects” based on 26 Brazilian states; “standard control” variables as in Table 1, as well “geographic control” variables. For variable description, see Appendix. The standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01 ; ***p<0.001.

Table A8: Racial demography and Public Goods Provision (Fractionalization and Shares)

	Total spending	Educ. share	Heal. share	Educ. quality	Heal. quality
	(1)	(2)	(3)	(4)	(5)
Fractionalization	0.005 (0.013)	-0.007* (0.003)	0.012*** (0.003)	-0.052+ (0.030)	-0.062* (0.027)
Whites, share	-0.068*** (0.017)	0.014*** (0.004)	0.002 (0.004)	0.311*** (0.038)	0.118*** (0.035)
State FE	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Standard controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Geographic controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Observations	3,916	3,908	3,911	4,195	4,195
Adjusted R ²	0.405	0.553	0.235	0.787	0.352

Note that none of the associations in the case of fractionalization are robust to the Bonferroni-Holm adjustment. All predictor variables are standardized. All specifications include “state fixed effects” based on 26 Brazilian states. For variable description, see Appendix. The standard errors are given in parentheses, +p<0.1; *p<0.05; **p<0.01; ***p<0.001. The sample is restricted to municipalities where group shares and fractionalization measures are not collinear (i.e., with white shares between 0.2 and 0.6, see Figure 1). The F-test further indicates that, with an exception of healthcare spending, group share coefficients are significantly stronger than those of fractionalization.