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The importance of ethnicity in perceived school and clinic quality in Africa

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Abstract

Using two rounds of the Afrobarometer surveys, we consider to what extent ethnicity matters for perceived access and quality of education and health facilities. We allow associations to differ not only across time but across types of countries such as democracies versus nondemocracies. We find evidence of ethnic favoritism, but the degree of ethnic favoritism is similar in democracies and nondemocracies. However, less ethnic favoritism arises in sub-Saharan Africa's higher income countries.

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1. Introduction

Many studies have considered how ethnic heterogeneity could impact long-run outcomes. Easterly and Levine (1997) point to Africa's heterogeneity as going far to explain its poor policies and lack of infrastructure that hindered economic growth. De Luca *et al*. (2018) find that these negative impacts are not limited to Africa. Easterly *et al*. (2006) report negative effects on economic growth through worsening institutional quality. Alesina *et al*. (1999) report that ethnic heterogeneity decreases the provision of public goods. Such public goods could include those associated with augmenting human capital. Churchill *et al*. (2017) find that ethnic heterogeneity worsens health outcomes. Many have found that health and education are key determinants for economic growth and development [Barro (2001), Allam *et al*. (2020), Bloom *et al*. (2014), Hanushek and Woessmann (2020), Ridhwan *et al*. (2022), Lucas (1988, 2015), Goldin (2016), and Weil (2014)]. However, not all studies report negative effects of ethnic heterogeneity. Gisselquist *et al*. (2016) report that ethnic heterogeneity within Zambia is positively associated with public goods provision measured as spending on both education and health. Montalvo and Reynal-Querol (2021) find that diversity in smaller regions raises wages and productivity even though negative associations arise at the country level.

An issue related to ethnic heterogeneity is ethnic favoritism where co-ethnics of leaders receive benefits from the government. Soumahoro (2020) reports that ethnic representation in the government was positively associated with local responses to the 2014 Ebola outbreak in Africa. Dreher et al. (2019) find that foreign aid from China was more likely to be directed to co-ethnics. But once again, results could be more nuanced. Akbari *et al*. (2020) find that kinship ties can be more important. Ahlerup and Isaksson (2015) find evidence for ethnic favoritism but also evidence of regional favoritism in which leaders support their own localities regardless of its ethnic composition. Hodler and Raschky (2014) also focus on regional favoritism. Beiser-McGrath *et al*. (2021) report that infant mortality of co-ethnics falls relative to those of a different ethnicity but not in regions where co-ethnics are a majority, suggesting that public good provision cannot exclude those of differing ethnicity. Bandyopadhyay and Green (2023) do not find that objective outcomes are improved for co-ethnics but they do report more favorable subjective responses among co-ethnics, including quality of life measures.

We examine whether those with different ethnicity than the country's executive leader perceive lower quality treatment or less access at health facilities and schools by using responses from the Afrobarometer surveys. Our paper makes three contributions. First, we consider the individual perceptions of those who use these services as the dependent variable. An alternative approach in the literature considers outcome measures for health (income mortality, life expectancy, etc.) and education (enrollment, years of schooling, literacy, etc.) Franck and Rainer (2012) consider infant mortality and enrollment in primary school. A second alternative considers input measures such as money spent towards providing some benefit or service. Abman and Carney (2020) consider government subsidies in Malawi for fertilizer to farmers, reporting that those who shared the same ethnicity with the leader received greater subsidies.[1] Our approach focuses on a middle link, namely whether perceived quality of services is associated with ethnicity.

[1] Burgess *et al*. (2015) consider both alternatives. They consider road expenditure in Kenya as well as how much road was actually built.

We do not suggest that our measure is superior to these alternatives but complementary as all three have different strengths and weaknesses. Input measures can capture initial intent but perhaps fail to capture how monies are actually used. Downstream providers might deviate from the preferences of those allocating resources through government budgets. At the other end of the spectrum, outcome measures address what ultimately people care about but could also be driven by factors beyond the government's control. For example, genetics, weather, and lifestyle can contribute to health outcomes aside from the quality of the local clinic. However, Bandyopadhyay and Green (2023) discuss a weakness of using perceptions to measure quality as perceptions regarding quality might not stem from improvements in real outcomes but from an affinity for the leader. Therefore, our approach can focus on one part of the link from allocation to outcome that others have not considered, but we do not claim that it is superior, either, and so consider our approach as a complement to other research.

The second contribution is that the use of the Afrobarometer surveys allows for examining many countries, all surveyed under a consistent methodology and in multiple years, namely 2005 and 2011. Although still a relatively short window between the two years, our approach can examine if the degree of ethnic favoritism lessened over time, perhaps due to Africa's relatively strong economy during the 2000s. The use of multiple countries allows us to see if associations between ethnicity and perceived quality vary depending on the type of country – democracies versus nondemocracies, for example. The results would indicate to what extent perceptions of inadequacy are uniform across countries or are more pronounced in certain types of countries. Frank and Rainer (2012) also consider a wide range of African countries, 18, and allow results to differ between bigger and smaller countries, by political freedoms, by cultural heterogeneity, and the presence of a single religion.

Finally, whereas many studies consider shared ethnicity with the leader, we also examine membership in the largest ethnic group. Belonging to a large group could also hold advantages. Leaders from a smaller ethnic group could favor larger ones since they might need to garner political support from that group. Distinctions in results between the two ethnic dummies would then enlighten as to where ethnic favoritism becomes more pronounced, towards one's own group or to one that might be more politically important.

The rest of the paper is organized as follows. Section 2 describes the data and empirical model. Section 3 discusses results and section 4 offers concluding comments.

2. Data and Empirical Specification

Data comes from the third and fifth rounds of the Afrobarometer survey. The survey includes standardized questions answered by individuals from 15 (third round) and 26 (fifth round) African countries. The third round was conducted in 2005-6 whereas round 5 was from 2011-13.[2]

[2] Other rounds of the survey do not ask questions relating to experiences with medical facilities and schools.

The individuals surveyed are not the same in round five as in round three, preventing the use of a panel.

We focus on questions relating to experiences with medical facilities and schools. For medical facilities, six aspects are considered stemming from a common underlying question: *Have you encountered any of these problems with your local public clinic or hospital during the past 12 months: (i) Services are too expensive / Unable to pay, (ii) Lack of medicines or other supplies, (iii) Lack of attention or respect from staff, (iv) Absent doctors, (v) Long waiting time, and (vi) Dirty facilities.* The question and attributes relating to schools is analogous: *Have you encountered any of these problems with your local public schools during the past 12 months: (i) Services are too expensive / Unable to pay, (ii) Lack of textbooks or other supplies, (iii) Poor teaching, (iv) Absent teachers, (v) Overcrowded classes, and (vi) Poor facilities.* In all cases, respondents can answer: *Never* (coded as zero), *Once or Twice* (one), *a few times* (two), o*ften* (three) or *No experience with public clinics/schools during the past year*.

We drop responses of "No experience" although realize this omission is problematic. For medical clinics, a response of "No experience" could indicate that the individual was never sick or hurt, but it could instead indicate a complete absence of such facilities which could arise due to the ethnicity of the community. Perhaps some groups are so disfavored that the government did little to make any such resource available for that community. To the extent that this latter case holds, then removing these observations misses cases of ethnic favoritism. A similar ambiguity could arise with schools. "No experience" could indicate the individual does not have children of schooling age, the complete unavailability of a school, or a choice not to send a child to school (possibly because the child needs to work to help support the family). To partially address this concern, we only consider households that lived nearby (as given by the surveyor's assessment within the survey) to a clinic or school, respectively. This decision to remove these observations reduces the number of responses regarding clinics by 10,998 (16.6% of the survey's full sample) and regarding schools by 21,109 (31.7%) of the sample and so is not trivial.

We also acknowledge that these variables do not objectively measure such attributes as wait times, absenteeism, or cleanliness using well-defined measures of these concepts. They merely capture people's perceptions. We use such variables because we believe that some degree of truth lies behind them but, again, realize that answers could stem from other factors. For example, members of one ethnic group might choose less favorable responses when members of another ethnic group are in power even when underlying conditions remain the same over time. On the other hand, the skewness could work in the opposite direction in that responses could compare the perceived state of the facility with a high expectation when one's own ethnic group is in power. Disappointment following initial hope could make a respondent more critical of the current state of the facilities. Although we acknowledge these possibilities, we still presume that these responses provide information about underlying deficiencies in the provision of these services.

The key independent variables related to ethnicity are: "*What is your ethnic community, cultural group or tribe?"*. We create two dummies: *ETHG* equals one if the individual belongs to the largest ethnic group in the country and *ETHL* equals one if the respondent shares the same ethnicity as the leader. Large groups could be favored regardless of the leader's ethnicity. The

inclusion of both allows one to better interpret the coefficient on *ETHL*. A significant coefficient would then better isolate the effect of being a co-ethnic with the leader and not because the individual comes from the largest group, a group that could also be more likely to provide a country's leader. Table I provides information on the countries in the sample along with the largest group and leader's ethnicity.

We focus on the leader's ethnicity due to the patrimonial politics of many African countries as well as the relatively weaker power of courts and legislatures (Posner, 2007; van de Walle, 2003). Within the executive branch, we acknowledge that other cabinet positions for ministers could be important. Most notably, a leader might select such officers from different ethnic groups to bolster his political support. These officers could then use their clout to promote their co-ethnics' interests. Nevertheless, we focus on the leader since African countries differ to what extent such power-sharing arrangements arise as cabinet officers, for example, could have greater power in some countries than in others. Focusing on the leader then provides for greater consistency across countries although we will later allow associations to differ between democracies and nondemocracies. Fearon et al. (2007), Kasara (2007), and Frank and Rainer (2012) also use the head of state's ethnicity.

A final concern is that the mere presence of a facility could also be related to ethnicity as leaders could establish clinics near favored groups. Table II provides a country breakdown showing no general relationship between ethnicity and the presence of a facility. Consider Cameroon as an example. 15.9% of the population (in the survey) belongs to the largest ethnic group whereas 14.2% share the same ethnicity as the leader. But of those households living in the same sampling unit as a clinic, 16.7% belong to the largest ethnic group, and 13.7% share the same ethnicity as the leader. In Cameroon's case, the odds of randomly selecting someone sharing the same ethnicity as the leader is lower near a clinic than in the population at large.

We also consider a more formal model to see if ethnicity is tied to the presence of a facility. Let *SCHOOL* = 1 if a school is located in the primary sampling unit as determined by the surveyor. *CLINIC* is defined analogously. Using a logit methodology, we regressed *SCHOOL* on *ETHG*, *ETHL*, a time dummy, and country fixed effects. The coefficient on *ETHL* is -0.029 but insignificant. The coefficient on *ETHG* is -0.067, significant at the 5% level. The negative coefficient suggests that a school is less likely to be present in the same sampling unit as the household. When *CLINIC* replaces *SCHOOL*, the coefficient on *ETHL* is -0.178 and the coefficient on *ETHG* is 0.087. Both are significant at the 1% level. Although households in the largest ethnicity are most likely to have a school in their sampling unit, households that share ethnicity with the leader are less likely. In fact, households where both *ETHL* and *ETHG* equal one and who like the leader belong to the largest ethnic group are less likely to have each of the facilities present. Therefore, the evidence does not consistently show that these facilities are more likely to be present in areas that would be presumably more favored by a leader. Of course, the quality of these facilities could differ and that is what we now examine.

Table I: Ethnicity within the Sample

Country	Years	Largest Group	Leader's Ethnicity		High Income	Democracy
			2005	2011		
Benin	3	Fon	Somba	Yaruba		Yes
Botswana	3	Tswana	Tswana	Tswana	Yes	Yes
Burkina Faso	2	Mossi		Mossi		
Burundi	2	Hutu		Hutu		
Cameroon	2	Bamileke-Bamu		Beti		
Cote d'Ivoire	2	Akan		Bete		
Ghana	3	Akan	Akan	Akan		Yes
Guinea	2	Peulh		Malinke		
Kenya	3	Kikuyu	Kikuyu	Kikuyu		
Lesotho	3	Sotho	Sotho	Sotho	Yes	Yes
Liberia	2	Kpelle		Gola		
Madagascar	3	Merina	Merina	Merina		
Malawi	3	Chewa	Lomwe	Yao		
Mali	3	Bombara	Fula	Fula		Yes
Mozambique	2	Makua	*	Ronga		
Namibia	3	Ovambo	Ovambo	Ovambo	Yes	Yes
Niger	2	Haoussa		Hausa		
Nigeria	3	Hausa	Yaruba	Ijaw		
Senegal	3	Wolof	Wolof	Pulaar		Yes
Sierra Leone	2	Mende		Temne		
South Africa	3	Zulu	Xhosa	Zulu	Yes	Yes
Tanzania	1	Sukumba	Makua	*		
Togo	2	Ewe		Kabye		
Uganda	3	Muganda	Banyankole	Banyankole		
Zambia	3	Bemba	Lenje	Bisa		
Zimbabwe	2	Shona		Shona		

Notes: For "Years": 1 denotes 2005 only, 2 denotes 2011-3 only, and 3 denotes both 2005 and 2011-13 are included in the sample. The ethnicities for the Mozambique (2005) and Tanzania (2011) leaders are not known. A blank entry in the '2005' column signifies that data for that country is not available from Afrobarometer. A "Yes" in the final two columns denotes high income (relative to other African countries) or democracy, respectively.

Table II: Breakdown by Ethnicity within Sample

	% in largest group			% sharing ethnicity with leader		
	Total	Clinic = 1	School = 1	Total	Clinic = 1	School = 1
Benin	41.8%	48.4%	43.0%	10.7%	9.7%	11.3%
Botswana	15.5%	14.3%	14.7%	7.9%	3.4%	4.5%
Burkina Faso	52.8%	52.0%	52.6%	52.8%	52.0%	52.6%
Burundi	74.0%	67.4%	72.9%	74.0%	67.4%	72.9%
Cameroon	15.9%	16.7%	15.5%	14.2%	13.7%	14.3%
Cote d'Ivoire	38.2%	38.4%	38.1%	18.3%	16.6%	17.5%
Ghana	53.5%	55.6%	55.9%	53.5%	55.6%	55.9%
Guinea	35.2%	39.0%	35.4%	27.7%	29.2%	28.7%
Kenya	19.4%	16.2%	15.8%	19.4%	16.2%	15.8%
Lesotho	20.7%	19.8%	19.7%	20.7%	19.8%	19.7%
Liberia	22.2%	20.8%	21.0%	4.0%	3.5%	4.2%
Madagascar	27.6%	25.5%	27.3%	27.6%	25.5%	27.3%
Malawi	34.7%	27.1%	34.0%	14.2%	20.7%	15.2%
Mali	29.1%	28.5%	29.7%	6.8%	6.5%	6.3%
Mozambique	30.7%	26.1%	28.6%	1.4%	1.3%	1.5%
Namibia	50.6%	37.6%	50.5%	50.6%	37.6%	50.5%
Niger	51.3%	56.0%	53.3%	51.3%	56.0%	53.3%
Nigeria	23.8%	25.6%	22.9%	12.1%	11.2%	11.0%
Senegal	45.5%	48.6%	45.3%	36.7%	37.3%	37.2%
Sierra Leone	34.0%	27.0%	33.4%	34.0%	27.0%	33.4%
South Africa	17.2%	15.5%	16.8%	16.4%	13.2%	16.4%
Tanzania	13.6%	8.2%	12.0%			
Togo	36.3%	44.3%	37.0%	14.3%	12.0%	14.4%
Uganda	19.5%	20.1%	19.3%	12.1%	11.8%	11.7%
Zambia	28.8%	31.8%	30.8%	1.8%	1.7%	2.1%
Zimbabwe	27.1%	30.7%	28.3%	27.1%	30.7%	28.3%

Notes: "Clinic (School) = 1" denotes that a medical facility (school) is located in the primary sampling unit/enumeration area according to the surveyor.

We consider the following specification:

$$Y_{i,c,t} = f[\alpha_c + \gamma_t + \beta_1(ETHG_{i,c,t}) + \beta_2(ETHL_{i,c,t}) + \mu X_{i,c,t} + \varepsilon_{i,c,t}] \quad (1)$$

where $Y_{i,c,t}$ denotes the perception of the public clinic or school for individual *i* in country *c* at time *t* and takes on one of the four values described in section 3. The ethnicity dummies are $ETHG_{i,c,t}$ and $ETHL_{i,c,t}$. $X_{i,c,t}$ contains control variables, including a gender dummy, and the age of the respondent. We retain a parsimonious specification for the variables in *X* since variables such as

income could be endogenous as they could also be driven by ethnic factors.[3] The specification also includes country and period dummies.

Table III presents descriptive statistics. 20% of the sample shares the same ethnicity as the country's leader whereas 30% comes from the largest ethnic group within the country. The variation in perceived qualities of schools exceeds their counterparts for clinics as shown by the standard deviations.

Table III: Descriptive Statistics

	Mean	Std Dev	Min	Max
ETHL	0.20	0.40	0	1
ETHG	0.30	0.46	0	1
FEMALE	0.50	0.50	0	1
AGE	3.58	0.48	2.89	6.91
Clinic				
Too Expensive	0.98	1.14	0	3
Lack of Medicines / Supplies	1.47	1.39	0	3
Lack of Attention / Respect	1.25	1.48	0	3
Absent Doctors	1.27	1.66	0	3
Long Waiting Times	1.78	1.40	0	3
Dirty Facilities	1.07	1.71	0	3
School				
Too Expensive	0.86	1.09	0	3
Lack of Textbooks / Supplies	1.44	1.80	0	3
Poor Teaching	1.49	2.08	0	3
Absent Teacher	1.46	2.00	0	3
Overcrowded Classrooms	1.77	1.94	0	3
Poor Facilities	1.55	1.94	0	3

With the ordinal nature of the dependent variable, f[ ] denotes the logistic function and so (1) is estimated via an ordered logit methodology. Since higher values of Y denote more dissatisfaction with the clinic or school, a negative β_1 implies that those belonging to the largest ethnic group report fewer problems. The coefficient β_2 is interpreted similarly.

[3]The Afrobarometer surveys lack detailed demographic information regarding households although ordinal data regarding income and education are available. In separate robustness checks, we included these as controls along with an urban dummy. However, coefficients for *ETHL* and *ETHG* were mostly unaffected. We prefer the parsimonious specification presented in the text due to the increased sample size and the aforementioned endogeneity concerns when using controls such as income and education. These results are available upon request.

3. Results and Discussion

Table IV presents the baseline results. Panel A considers medical clinics whereas panel B examines schools. For both *ETHL* and *ETHG*, coefficients are generally negative. Lower values of the dependent variable denote fewer problems and so these results suggest that those belonging to the same ethnicity as the leader as well as those belonging to the largest ethnic group report fewer problems in these areas. The fact that distinct, relatively precise coefficients arise for both ethnicity variables implies that sufficient variation between the two exists as leaders do not always come from the largest ethnic group.[4]

Moreover, belonging to the same ethnic group as the leader more strongly associates with reporting fewer problems with schools than does belonging to the largest group. The coefficients for *ETHL* are negative across the board in panel B but those on *ETHG* generally show less strong associations. For clinics in panel A, distinctions between *ETHG* and *ETHL* are not as obvious. Therefore, more evidence arises of ethnic favoritism in education than in healthcare.

As for the control variables, the coefficient on the time dummy is negative regarding expensiveness for both schools and clinics, suggesting that increasing income over time lessens the burden of paying for these services. Many characteristics of schools are perceived to be better in later periods but not so generally for clinics where attributes are perceived to be of lower quality than in 2005. Likewise, the coefficient for *AGE* is positive (or zero) for expenses but often negative for other characteristics. Older people might find medical care more expensive given more health problems. However, their experiences stretch back further in time and so older people

[4] Although not presented, the results in Table IV are qualitatively similar to taking f[*] in (1) to be linear and estimating by least squares. Of those coefficients on *ETHL* or *ETHG* significant at least at the 5% level, only the coefficient on *ETHL* in the last column (Dirty facilities) in Panel A of Table IV loses statistical significance in the linear model. No coefficient for *ETHL* or *ETHG* in the linear model is significant that is also not significant in Table IV. Results available upon request.

Table IV: Baseline Results

	Panel A: Medical Clinic					
	Too expensive or unable to pay	Lack of medicines or other supplies	Lack of attention or respect from staff	Absent doctors	Long waiting time	Dirty facilities
ETHL	-0.104***	-0.087**	-0.096***	0.021	-0.060*	-0.080**
	(0.035)	(0.034)	(0.035)	(0.036)	(0.033)	(0.037)
ETHG	-0.101***	-0.045	-0.054*	-0.159***	-0.070**	-0.164***
	(0.030)	(0.029)	(0.029)	(0.029)	(0.028)	(0.030)
FEMALE	-0.009	-0.011	-0.046**	-0.100***	0.020	-0.090***
	(0.023)	(0.022)	(0.022)	(0.022)	(0.022)	(0.024)
AGE	0.071***	0.030	-0.187***	-0.127***	-0.156***	-0.103***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.024)	(0.026)
2011-3 Dummy	-0.134***	0.003	0.075***	0.007	0.189***	0.249***
	(0.029)	(0.027)	(0.027)	(0.027)	(0.027)	(0.030)
# of obs	27,688	27,614	27,459	27,145	27,599	27,043
Pseudo-R^2	0.063	0.036	0.020	0.022	0.023	0.030
	Panel B: School					
	Services too expensive	Lack of Textbook and supplies	Poor teaching	Absent teachers	Overcrowded classes	Poor Facilities
ETHL	-0.141***	-0.144***	-0.191***	-0.119***	-0.156***	-0.111***
	(0.031)	(0.030)	(0.032)	(0.031)	(0.031)	(0.031)
ETHG	-0.062**	-0.026	-0.016	-0.045*	0.003	-0.123***
	(0.026)	(0.026)	(0.027)	(0.026)	(0.026)	(0.026)
FEMALE	0.035*	-0.008	-0.171***	-0.149***	-0.099***	-0131***
	(0.020)	(0.020)	(0.021)	(0.020)	(0.020)	(0.020)
AGE	-0.007	-0.079***	-0.159***	-0.177***	-0.129***	-0.197***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.023)	(0.022)
2011-3 Dummy	-0.133***	-0.035	-0.046*	0.028	-0.108***	-0.171***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
# of obs	35,303	34,211	33,555	33,686	33,999	34,015
Pseudo-R^2	0.032	0.034	0.036	0.032	0.046	0.034

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All regressions contain country dummies.

may have witnessed greater improvement over time in schools and medical care. Females perceive fewer problems across some of these characteristics although they do not find these services less expensive.

To provide a sense of the magnitudes of the coefficients in Table IV, Table V considers hypotheticals considering ethnicity and the extent of problems at a facility. For each characteristic of clinics and schools, we consider the two boundary outcomes: problems "never" arise versus they "often" arise. For these two outcomes, we compare the probabilities of these outcomes under the two extreme cases of co-ethnicity: the individual belongs to the largest ethnic group which is also the leader's group (*ETHL* = *ETHG* = 1) versus the individual sharing ethnicity neither with the leader nor with the largest group (*ETHL* = *ETHG* = 0). The first two blocks of columns in Table V provide the probabilities of the respective boundary outcomes and the last block computes the difference in the probability of the outcome when *ETHL* = *ETHG* = 1 versus when *ETHL* = *ETHG* = 0. Households with shared ethnicity have higher probabilities of never encountering problems and lower probabilities of often encountering problems versus those with no shared ethnicity. However, the magnitudes of the differences are not great. Households with shared ethnicity (both with the leader and with the largest group) are two to six percentage points more likely to never experience problems and one to four percentage points more likely to often experience problems. We find such distinctions to be in line with other studies. Using a linear probability model, Frank and Rainer (2012) find that co-ethnics see an increase in completing primary education by 1.8 percentage points and a decline in infant mortality by 0.37 percentage points. However, we acknowledge once again that Table V considers the two extreme cases and so the predicted differences are smaller for less extreme cases such as being a co-ethnic with the leader or with the largest group but not a co-ethnic of both. Therefore, we find these distinctions across shared ethnicity meaningful but not paramount in perceiving the quality of these facilities.

Table V: Predicted Probabilities of Outcomes "Never" and "Often"

		ETHL=ETHG=1		*ETHL=ETHG*=0		Difference (1-0)	
	Problems	Never	Often	Never	Often	Never	Often
Clinic	Too Expensive	0.542	0.113	0.491	0.135	0.051	-0.022
	Lack of Medicines / Supplies	0.331	0.187	0.302	0.208	0.029	-0.021
	Lack of Attention / Respect	0.466	0.161	0.429	0.182	0.037	-0.021
	Absent Doctors	0.471	0.132	0.437	0.149	0.034	-0.017
	Long Waiting Times	0.255	0.321	0.231	0.350	0.024	-0.029
	Dirty Facilities	0.619	0.104	0.560	0.129	0.059	-0.025
School	Too Expensive	0.583	0.102	0.533	0.122	0.050	-0.020
	Lack of Textbooks / Supplies	0.448	0.150	0.407	0.173	0.041	-0.023
	Poor Teaching	0.523	0.132	0.471	0.157	0.052	-0.025
	Absent Teacher	0.487	0.127	0.446	0.146	0.041	-0.019
	Overcrowded Classrooms	0.408	0.275	0.370	0.308	0.038	-0.033
	Poor Facilities	0.483	0.187	0.425	0.225	0.058	-0.038

Notes: All variables besides *ETHL* and *ETHG* set at mean values. 'Difference (1-0)' denotes the difference between the predicted values for the responses of Never and Often, respectively.

Tables VI and VII allow the coefficients on the ethnicity variables to differ on country characteristics, namely whether the country is democratic or has relatively high income. Decision-making processes presumably differ between democracies and nondemocracies. For example, democratic leaders could face more constraints that preclude them from explicitly favoring their own ethnic groups. Instead, larger groups providing for larger voting blocs could have more power to obtain resources. In these cases, the coefficient on *ETHL* should be greater in magnitude (more negative) in nondemocracies but the coefficient on *ETHG* should be smaller. Of course, such outcomes might not arise as nondemocratic leaders also face constraints and might have to buy support from important groups to remain in power. Democracy classifications come from Freedom House where *DEM* equals one for countries classified as 'free' and equals zero otherwise. Table I labels countries as democratic or not.

Results in Table VI do not generally produce statistically significant differences between democracies and nondemocracies. Burgess et al. (2015) report that ethnic favoritism lessened in Kenya during periods of democracy. Our results differ from theirs although they rely on within-country variation whereas the persistency of the democracy classification necessitates that our analysis utilizes cross-country differences. Nevertheless, we do not find evidence that the degree of ethnic favoritism lessens in democracies.

We also allow results to vary by income. Perhaps ethnic favoritism is more pronounced when resources are more scarce. If so, then associations between ethnicity and quality should be weaker in higher income countries. Given the negative coefficients in table III, positive coefficients on the income-ethnicity interaction terms would then denote weaker associations. However, we only classify four countries as "high" income: South Africa, Botswana, Namibia, and Lesotho since lower thresholds would separate more similar countries.[5] We acknowledge that all four of these countries are also democratic and come from the same subregion within Africa, making it more difficult to disentangle competing explanations.

Table VII reports results. Although the coefficients on the interaction term are not always statistically significant, they are positive. Moreover, the coefficients of the sums on the interaction terms with the respective coefficients on *ETHL* or *ETHG* are close to zero. Evidence of ethnic favoritism weakens for these higher-income countries. To the extent that greater income allows for greater spending on public services, including across ethnicities, then SSA's continued economic development could diminish problems of ethnic favoritism.

Finally, Table VIII allows associations to differ for Round 5 (2011-13) of the Afrobarometer survey compared to Round 3 (2005-6) as *Time* = 1 for round 5 observations and *Time* = 0 for round 3 observations. Although we acknowledge that the elapsed time between survey rounds is small, no evidence arises that favoritism diminished in these six to eight years. In fact, over half the coefficients on the time-ethnicity interaction terms are negative, suggesting that ethnicity is more strongly related to one's perceptions of clinic and school quality.

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[5] Lesotho had the fourth highest GDP per capita in 2005 at $3100. Ghana had the 5th highest at $2300. But after Ghana, only $200 or $100 separated countries in the rankings and so using a lower threshold than $3000 would have separated countries with very similar income levels.

Table VI: Results by Democracy

	Too expensive or unable to pay	Lack of medicines or other supplies	Lack of attention or respect from staff	Absent doctors	Long waiting time	Dirty facilities
Panel A: Medical Clinic						
ETHL	-0.109**	-0.112**	-0.091**	-0.002	-0.074*	-0.063
	(0.042)	(0.042)	(0.043)	(0.043)	(0.041)	(0.045)
*ETHL*DEM*	0.014	0.074	-0.015	0.074	0.045	-0.060
	(0.075)	(0.071)	(0.074)	(0.075)	(0.068)	(0.079)
ETHG	-0.120***	-0.023	-0.062*	-0.123***	-0.030	-0.206***
	(0.036)	(0.036)	(0.035)	(0.036)	(0.035)	(0.036)
*ETHG*DEM*	0.058	-0.066	0.025	-0.110*	-0.156***	0.135***
	(0.063)	(0.060)	(0.062)	(0.063)	(0.024)	(0.066)
# of obs	27,688	27,614	27,459	27,145	27,599	27,043
Pseudo-R^2	0.063	0.036	0.020	0.022	0.023	0.030

	Services too expensive	Lack of Textbook and supplies	Poor teaching	Absent teachers	Overcrowded classes	Poor Facilities
Panel B: School						
ETHL	-0.113***	-0.180***	-0.155***	-0.064	-0.159***	-0.109***
	(0.038)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
*ETHL*DEM*	-0.090	0.091	-0.106	-0.150**	0.015	0.010
	(0.065)	(0.062)	(0.067)	(0.065)	(0.064)	(0.065)
ETHG	-0.094***	-0.030	-0.021	-0.044	0.016	-0.092***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.031)
*ETHG*DEM*	0.099*	0.006	0.022	0.008	-0.054	-0.095*
	(0.056)	(0.053)	(0.057)	(0.056)	(0.054)	(0.055)
# of obs	35,303	34,211	33,555	33,686	33,999	34,015
Pseudo-R^2	0.032	0.034	0.036	0.032	0.046	0.034

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All regressions contain country dummies.

Table VII: Results by Income

	Too expensive or unable to pay	Lack of medicines or other supplies	Lack of attention or respect from staff	Absent doctors	Long waiting time	Dirty facilities
Panel A: Medical Clinic						
ETHL	-0.114***	-0.101***	-0.110***	-0.021	-0.081**	-0.101***
	(0.036)	(0.036)	(0.038)	(0.038)	(0.035)	(0.039)
*ETHL*INC*	0.096	0.085	0.075	0.406***	0.166	0.024
	(0.139)	(0.111)	(0.106)	(0.113)	(0.104)	(0.121)
ETHG	-0.108***	-0.056*	-0.067**	-0.142***	-0.073**	-0.199***
	(0.031)	(0.030)	(0.031)	(0.031)	(0.029)	(0.032)
*ETHG*INC*	0.078	0.074	0.099	-0.247**	-0.003	0.247***
	(0.127)	(0.096)	(0.094)	(0.100)	(0.092)	(0.030)
# of obs	27,688	27,614	27,459	27,145	27,599	27,043
Pseudo-R^2	0.063	0.036	0.020	0.022	0.023	0.030

	Services too expensive	Lack of Textbook and supplies	Poor teaching	Absent teachers	Overcrowded classes	Poor Facilities
Panel B: School						
ETHL	-0.160***	-0.195***	-0.220***	-0.144***	-0.192***	-0.178***
	(0.033)	(0.033)	(0.034)	(0.037)	(0.033)	(0.033)
*ETHL*INC*	-0.036	0.252***	0.200**	0.115	0.194**	0.379***
	(0.109)	(0.095)	(0.101)	(0.092)	(0.094)	(0.097)
ETHG	-0.097***	-0.052*	-0.023	-0.061**	-0.019	-0.150***
	(0.027)	(0.027)	(0.028)	(0.028)	(0.027)	(0.027)
*ETHG*INC*	0.357***	0.164*	0.003	0.122	0.101	0.140
	(0.101)	(0.090)	(0.096)	(0.088)	(0.092)	(0.095)
# of obs	35,303	34,211	33,555	33,686	33,999	34,015
Pseudo-R^2	0.032	0.034	0.036	0.032	0.046	0.034

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All regressions contain country dummies.

Table VIII: Results over Time

	Too expensive or unable to pay	Lack of medicines or other supplies	Lack of attention or respect from staff	Absent doctors	Long waiting time	Dirty facilities
Panel A: Medical Clinic						
ETHL	-0.382***	-0.120*	-0.125*	-0.005	-0.083	-0.308***
	(0.076)	(0.068)	(0.068)	(0.071)	(0.063)	(0.075)
*ETHL*Time*	0.364***	-0.194**	-0.111	-0.059	-0.185**	0.231**
	(0.094)	(0.089)	(0.090)	(0.092)	(0.084)	(0.097)
ETHG	0.300***	0.028	-0.005	-0.127**	-0.012	0.162**
	(0.066)	(0.062)	(0.060)	(0.062)	(0.058)	(0.064)
*ETHG*Time*	-0.535***	0.004	0.073	-0.064	0.063	-0.406***
	(0.082)	(0.077)	(0.077)	(0.079)	(0.073)	(0.082)
# of obs	17,801	17,692	17,617	17,442	17,691	17,394
Pseudo-R^2	0.055	0.051	0.023	0.021	0.026	0.022
Panel B: School						
	Services too expensive	Lack of Textbook and supplies	Poor teaching	Absent teachers	Overcrowded classes	Poor Facilities
ETHL	-0.261***	-0.156***	-0.076	-0.035	-0.130**	-0.109*
	(0.061)	(0.059)	(0.060)	(0.058)	(0.058)	(0.059)
*ETHL*Time*	0.120	-0.071	-0.324***	-0.228***	-0.205***	-0.143*
	(0.078)	(0.077)	(0.079)	(0.077)	(0.077)	(0.078)
ETHG	0.203***	0.155***	0.052	0.022	0.083	-0.018
	(0.055)	(0.053)	(0.055)	(0.054)	(0.053)	(0.053)
*ETHG*Time*	-0.382***	-0.266***	-0.069	-0.100	-0.009	-0.113*
	(0.069)	(0.068)	(0.069)	(0.069)	(0.067)	(0.06895)
# of obs	23,025	22,150	21,937	21,874	22,100	22,113
Pseudo-R^2	0.025	0.034	0.035	0.027	0.040	0.028

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All regressions contain country dummies.

4. Conclusion

This study took a different approach than did others examining to what extent ethnic favoritism prevails. Instead of considering the quantity of inputs or final outcomes, we focus on the perceptions of those in the vicinity of schools and clinics. Like other studies, we find evidence that ethnic favoritism arises as those sharing the same ethnicity as the leader report higher quality facilities or greater access. We take this finding to complement others within this

literature, showing that this finding remains robust to approaching this issue from a different angle.

We found little evidence that democracies experience lower levels of favoritism, at least for our sample of countries. Our finding does not suggest that democratization has no positive impact on clinics or schools. For example, a democratization that doubles the quality of every school would still leave disparities across schools that could break down along ethnic lines. We also see little difference over time in the degree of perceived ethnic favoritism. Again, this does not mean that no improvement in schools or clinics occurred, only that any changes did not greatly influence the association between sharing ethnicity with a leader and one's assessment of nearby facilities. We also acknowledge that data limitations allowed for only a short window to examine whether associations changed. This short window could be particularly problematic when utilizing perceptions since attitudes regarding the quality of these facilities could be well engrained. Revisiting this question using a longer time period (when available) appears warranted, especially given global campaigns to encourage inclusivity.

Where evidence of distinctions arises is for income. Less perceived favoritism generally arises in the four higher-income countries within the sample. Admittedly, such a finding remains tentative given that these four countries are all within southern Africa. If the association is, indeed, driven by income then one implication is that further economic growth will lessen the degree of perceived ethnic favoritism across these countries. Again, revisiting this issue as other countries in Africa enjoy rising income would provide an interesting avenue for further research.

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