Working Paper No. 132

SEPARATE AND SUSPICIOUS: LOCAL SOCIAL AND POLITICAL CONTEXT AND ETHNIC TOLERANCE IN KENYA

by **Kimuli Kasara**

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AFROBAROMETER WORKING PAPERS

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Separate and Suspicious: Local Social and Political Context and Ethnic Tolerance in Kenya

Abstract[1]

Does living in close proximity to members of other ethnic groups make people more or less tolerant of ethnic differences? How does local electoral competition interact with ethnic demography to affect ethnic tolerance? This paper examines these questions by combining survey data with new measures of local ethnic composition and political competition in Kenya. People living in ethnically diverse areas report *higher* levels of interethnic trust and residentially segregated people are less trusting of members of other ethnic groups. In contrast to research linking national electoral competition and ethnic salience, there is no evidence that local electoral competition increases intolerance. This paper has important implications for the study of the political and economic consequences of ethnic diversity and suggests that even in developing countries, where resource conflict along ethnic lines is acute and sometimes violent, sharing neighborhoods with members of different ethnic groups may lead to tolerance.

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Introduction

Does living in close proximity to members of other ethnic groups make people more or less tolerant of ethnic difference?[2] Does electoral politics affect the relationship between tolerance and local ethnic composition? Social scientists make policy recommendations that are informed by their answers to these questions. There is an active debate in the literature on civil conflict regarding whether partition – the spatial separation of groups – is necessary to guarantee peace where conflict has already occurred. Scholars debating which constitutional designs promote ethnic peace disagree fundamentally on whether institutions that encourage members of different groups to share the same political jurisdictions are superior to those that place them in different jurisdictions (e.g. Horowitz (2002) and Lijphart (2004).) Finally, American social policy since the late 1940s has reflected an optimistic view regarding the social benefits of social and residential integration.

I examine the relationships between local ethnic context, electoral competition, and tolerance in Kenya. The relationship between prejudice and neighborhood ethnic composition, has been examined most extensively in the literature on American political behavior and this paper is, to my knowledge, the first to estimate the relationship between both diversity and *segregation* across a large area in a poor conflict-prone country. By examining this question in a new context I make three contributions to the existing research on ethnic politics. First, this study presents a hard test for the notion that contact between members of different ethnic groups promotes tolerance because it takes place in a setting where resource conflict is acute and is commonly understood to take place along ethnic lines. The existing literature in American politics juxtaposes political competition and interethnic contact as explanations for the relationship between local diversity and individual attitudes, but these American studies are limited in important ways. They most often involve explaining tolerance within a small number of metropolitan areas in a two-party system, but they capture very little variation in political competition at the local level and tend to treat group sizes as a proxy for actual (or potential) political competition. By contrast, my data on local context spans areas with multiple political parties and a varying degree of electoral competitiveness allowing me to explore whether electoral competition is associated with intolerance and whether contested elections are particularly problematic in ethnically diverse places where resource competition between groups is understood to be acute.

Second, I examine a question that political scientists interested in ethnic politics in developing countries tend not to ask for historical reasons and because of a lack of data. Recent research on ethnic politics in developing countries has tended to focus on the notion that ethnic hostility arises because ethnicity correlates with different substantive political and/or economic interests (Baldwin and Huber 2010). By contrast, the focus of research in developed countries has been on prejudice as false beliefs people hold regarding what they share in common with members of other ethnic groups. History and context partially account for these different focuses. The racial distinctions of interest to most scholars of ethnic politics in developed countries carry with them centuries-old folk theories regarding why marginalized groups (e.g. blacks in the United States or the Roma in Europe) are *innately* inferior on *multiple* dimensions.[3] Although what Horowitz (2002) calls "ranked" ethnic distinctions exist in some developing countries (most notably India), they have not been a major focus of ethnic politics research in the developing world. Prejudice has also been of less theoretical interest in developing countries because poverty and weak institutions exacerbate resource conflict, drawing scholars' attention to substantive differences across ethnic lines.

[2]There is, of course, an active debate on what constitutes an ethnic identity, but by ethnic group I mean "a group larger than a family in which membership is reckoned primarily by a descent rule" a definition that is consistent with how ethnicity is understood in this context (Fearon 2003).

[3] For example, Horowitz (2002) refers to the "mixed stereotypes" that exist in unranked ethnic groups using the examples of the Kanuri attitudes towards the Ibo in Nigeria and the attitudes of the Sinhalese towards Tamils in Sri Lanka. In the former case the Ibo are "distrusted and despised," but admired for "their Western education, salaried jobs, and higher standards of living" and in the latter, Tamils are viewed as "poor and dirty" as well as "thrifty and diligent."

In addition, students of ethnic politics in developing countries frequently lack the data that would allow them to examine these questions. The logistical problems associated with collecting any data in poor countries aside, where there is a high potential for ethnic conflict, individuals may be unwilling to provide information on ethnicity and governments may resist collecting or sharing information on ethnic composition. As discussed above, this omission is important because these countries present a hard test for claims that interethnic contact promotes tolerance. In addition, because this paper deals with ethnic tolerance in a multi-group setting, it demonstrates the value of measures of segregation developed by sociologists and economists, which are rarely used in the literature on ethnic context and racial attitudes in the United States.

I use the 2005 Afrobarometer survey and original data on local-level ethnic diversity across small areas. Local ethnic context is measured at the level of the location – an administrative unit with an average population of 13,000. Because the Kenyan government collects, but does not officially circulate, data on local ethnic composition, I construct an original dataset capturing ethnic diversity and segregation at a very local level across most of the country by matching names to groups using the 2006 voter register and older census data.

People living in ethnically diverse and racially integrated settings express more trust in members of other ethnic groups. Although I cannot fully dismiss the possibility that there is an association between tolerance and living in ethnically diverse and residentially integrated settings largely because tolerant people seek out diverse settings, I present evidence that this is unlikely to be an explanation for these findings. This is a particularly surprising in Kenya where members of different ethnic groups are commonly understood to have *divergent* political and economic interests and there has been serious ethnic and electoral violence in many parts of the country. Therefore my analysis suggests that scholars of ethnic politics in the developing world ought to pay more attention to explanations of intolerance that link it to false beliefs about members of other groups.

I do not find a statistically significant relationship between local electoral competitiveness and either ethnic tolerance or national identification. Although I measure electoral competition at the local level in the 2002 Kenyan parliamentary elections, alternative measures of electoral competitiveness at the constituency level in across two elections (1997 and 2002) and two races (parliamentary and presidential) are also unrelated to ethnic tolerance. I cannot, given my data, evaluate the relative weight of local and national electoral competition in determining ethnic tolerance and salience. However, the explanation that seems most plausible to us is that local electoral competition does not affect individual attitudes because Kenya was, at this time, a highly centralized state. Therefore, this paper raises an important question that future researchers will be able to examine given richer data on local political competition and ethnic composition across different institutional contexts.

The paper proceeds as follows. The following section examines how my main research question has been studied in other cases. Specifically, it describes the link between the literature and the four hypotheses I test: that local ethnic diversity and integration promote ethnic tolerance (*Hypotheses 1 & 2*), that electoral competition decreases tolerance (*Hypothesis 3*), and that electoral competition is *most* likely to decrease tolerance in ethnically diverse areas (*Hypothesis 4*). In Section 3 I discuss my empirical strategy. Section 4 reports my findings and Section 5 concludes.

The Social Environment and Ethnic Tolerance

Scholars studying the relationship between local ethnic composition and individual attitudes tend to differ on how whether intolerance ought primarily arises out of real political and/or resource conflict over resources or whether it is the expression of false (prejudiced) beliefs about members of other groups. Broadly speaking, if the problem is false beliefs integration has the potential to increase tolerance and if the problem is resource conflict, integration may heighten conflict. These are clearly not mutually exclusive claims and it is hard to distinguish between them empirically because it requires taking position on what counts as a real conflict of interests.

Research linking local ethnic diversity and prejudice is frequently motivated by psychological theories positing that interethnic contact leads to tolerance. The "contact hypothesis," first advanced by Allport (1954), suggests that, under certain circumstances, interethnic contact reduces prejudice.[4] Although there are many descriptions of the contact hypothesis, the mechanism most commonly accepted by political scientists is informational – people become more tolerant when they learn that members of other ethnic groups do not conform to existing stereotypes and/or are not very different from themselves. To be clear, by examining the effect of local ethnic context on attitudes I am examining the *potential* for closer interethnic contact. However, even if residential diversity is only a necessary condition for interethnic contact, local context ought to affect tolerance.

Evidence on racial attitudes in the U.S. suggests that living in close proximity to members of other racial groups is associated with tolerant attitudes (Welch et al. 2001; Kinder and Mendelberg 1995; Oliver and Wong 2003). In pre-civil war Yugoslavia, Massey et al. (1999) find that that ethnic tolerance was higher in ethnically mixed areas, for example, and qualitative evidence from a South African neighborhood suggests that residential desegregation has led to social integration (Lemanski 2006). Varshney (2002) argues that shared neighborhoods help to diminish ethnic riots in Indian cities, but that other forms of civil engagement across ethnic lines are much more effective at maintaining peace. Kasara (2011) shows, using an instrumental variable approach, that ethnic segregation causes increased violence by studying the incidence of violence across over 700 administrative locations in Rift Valley Province during the post-election crisis of 2007-08.

Using survey data, other scholars have argued that increasing local diversity decreases tolerance. The earliest statement of this view comes from Key (1949) who argued that southern whites living in majority black counties (the "black belt") were the most committed to the maintenance of restrictions on black suffrage. Following Key, scholars have examined whether the local presence of African-Americans induces higher levels of white political participation and prejudice (Glaser 1994; Voss 1996). Political and resource competition play an important part in these "racial threat" accounts. Enos (2011), however, advances a purely psychological theory of racial threat, suggesting that in much of the research examining "racial threat" the assumption of real electoral competition is either historically inaccurate or inapplicable to the areal unit under study.

Because African-Americans possess a fairly unusual combination of low economic status and high social stigma, it is difficult to generalize from studies that examine how proximity affects whites' attitudes towards blacks. For this reason, scholars have studied American racial groups other than whites or have examined whether the effect of racial composition on attitudes is conditioned by a person's beliefs about the relative status of groups (Bobo and Hutchings 1996; Oliver and Wong 2003; Dixon 2006). In addition, political scientists have focused on economic as well as racial differences, finding that proximity to relatively wealthy members from other ethnic groups increases tolerance (Oliver and Mendelberg 2000; Cho and Baer 2010). Although economic differences are clearly important at the individual and aggregate level, given the data I am unable to explore these issues.

Actual or potential political competition underlies most accounts of "racial threat" in American politics, but measures of electoral competition are rarely included in these studies. By contrast, politicians' incentives to highlight ethnic differences are an important feature of studies of ethnic politics in the developing world (Young 1965; Bates 1983; Chandra 2004). Prejudice plays little role in this research because resource conflicts between groups are taken as given and ethnic identities are sometimes treated as being in conflict with national identities (Miles and Rochefort 1991; Miguel

[4] The specific conditions under which interethnic contact decreases prejudice are a matter of controversy and one problem with the theory as currently stated is that the proliferation of conditions makes falsifiability impossible (Pettigrew 1998). The two conditions first suggested in Allport (1954) that have evoked the most scholarly interest are the requirement that individuals from ethnic groups be of *equal status* and that they be engaged in the pursuit of *common objectives*.

2004; Robinson 2009).[5] Daniel Posner has shown that ethnic identification and salience are shaped by electoral politics cross-nationally and in Zambia over time (Posner 2005; Eifert, Miguel, and Posner 2010). The literature on civil conflict and communal violence also demonstrates that political competition can explain the geographic incidence of violence within and across countries (Snyder 2000; Wilkinson 2004).

An examination of existing theories of ethnic tolerance and salience, leads to the following four hypotheses tested below. If false beliefs are the primary cause of ethnic intolerance people living in ethnically diverse local environments should be more tolerant because they have greater *potential* contact with members of other ethnic groups (*Hypothesis 1*). By the same logic even people living in ethnically mixed areas should be less tolerant if ethnic groups are *spatially segregated* (*Hypothesis 2*). If political competition promotes hostility along ethnic lines then people living in areas where elections are closely contested will have lower levels of interethnic trust (*Hypothesis 3*). Furthermore, political competition will have the greatest effect on intolerance in ethnically diverse places; that is, there will be a negative interaction between ethnic diversity and local electoral competitiveness (*Hypothesis 4*).

Empirical Strategy

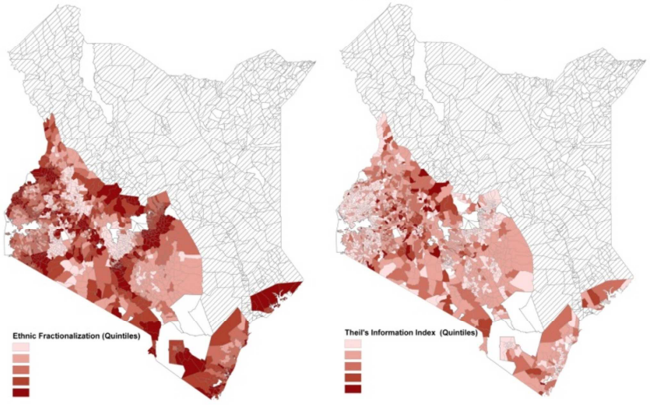
Local ethnic context is measured at the level of the administrative location. Locations are the second smallest administrative division in Kenya. There are multiple locations within a district – the principle administrative jurisdiction – and multiple locations within a constituency – an electoral jurisdiction represented by single Member of Parliament. Excluding arid and semi-arid districts, there are 1,999 locations; the average location has 13,300 residents and has an area of 102 square kilometers. Summary statistics for the individual and location-level variables can be found in Table 1 and Figure 1 shows location boundaries and the area covered.

Table 1: Summary Statistics

Variable	Mean	Std. Dev.	N
Interethnic Trust	1.14	0.84	1164
National Identification	3.44	1.14	1176
Ethnic Fractionalization (Location)	0.34	0.25	1190
Ethnic Polarization	0.44	0.22	1190
Proportion Coethnics in Location	0.67	0.34	1113
Segregation (Theil's Index)	0.05	0.06	1190
Segregation (Dissimilarity Index)	0.17	0.13	1084
Minority	0.23	0.42	1113
Coethnic Interviewer	0.41	0.49	1188
Margin of Victory (Parliamentary 2002)	0.44	0.28	1182
Effective Number of Parties (Parliamentary 2002)	2.04	0.77	1182
Proportion Migrants	0.27	0.24	1190
Urban	0.34	0.48	1190
Ethnic Fractionalization (Constituency)	0.38	0.24	1190
Segregation (Constituency - Theil's Index)	0.10	0.08	1190
Constituency Margin of Victory (Parliamentary 2002)	0.38	0.25	1190
Constituency Margin of Victory (Presidential 2002)	0.56	0.23	1190
Constituency Margin of Victory (Parliamentary 1997)	0.50	0.31	1190
Constituency Margin of Victory (Presidential 1997)	0.50	0.31	1190
Constituency Development Funds per capita (2004-2005)	1760	1521	1190

[5] Although strong feelings of ethnic pride need not correlate with negative attitudes towards members of other ethnic groups the implicit assumption in these studies is that they do. The empirical evidence on this point is mixed (Bahry et al. 2005; Tajfel 1982).

Figure 1: Ethnic Fractionalization and Segregation (Theil's Information Index)



I use administrative locations as defined in 1999 and exclude all locations in arid and semi-arid (ASAL) districts (the crosshatched areas in Figure 1). Although these arid and semi-arid areas cover a large portion of Kenya's land mass (37%) they house a relatively small proportion of the national population and of the 2005 Afrobarometer sample (7% in both cases). These areas are excluded from the analysis because conceptualizing and measuring local ethnic context in these areas is complicated by the fact that they are sparsely populated and many residents are transhumant pastoralists served by mobile polling stations. It is important to note that levels of ethnic tolerance in ASAL and non-ASAL districts are not significantly different.[6]

The relationship between tolerance, local context, and other individual-level characteristics are represented below.

$$\textit{Ethnic Tolerance}_{igj} = \beta \textit{Ethnic Context}_{gj} + X'_{igj}\delta + Z'_{j}\gamma + \varepsilon_{igj}$$

where $\textit{Ethnic Tolerance}_{igj}$ is measured for individual i from ethnic group g residing in location j. $\textit{Ethnic Context}_{gj}$ is a measure of the ethnic composition of the locality an individual lives in. The vector Z'_j contains other location-level measures of ethnic context, including the proportion of migrants and whether or not a location is urban. The vector X'_{igj} represents individual characteristics that may affect tolerance such as age, education, and gender.

Because my primary concern is the extent to which local context affects an individual-level attribute, one needs a model that accounts for the hierarchical structure of the data. I report standard errors clustered at the level of the location. I do not fit a multilevel model because the research questions posed here do not concern effects these models would best allow one to estimate. Specifically, this project is not primarily concerned with understanding location-level differences in average levels of interethnic trust and/or how the coefficient on local ethnic context varies by some individual-level attribute.

Ethnic Tolerance

In order to measure ethnic tolerance, I use a question on the 2005 Kenyan Afrobarometer survey that asks respondents how much they trust Kenyans from other ethnic groups. The trust question is asked regarding trust in different social and political groups in 16 Afrobarometer surveys from around the same time (Table 2). Respondents have the option to answer that they trust members of other ethnic groups: 0) not at all; 1) a little; 2) somewhat; and 3) a lot.

[6] The p-value on a two-sided difference of means test on *Interethnic Trust* is 0.19.

I use a respondent's reported level of interethnic trust as a measure of ethnic tolerance. It is easier to gauge prejudiced attitudes regarding a single minority (e.g. Blacks, Muslims, etc.) than it is to measure prejudiced attitudes toward *all* members of other ethnic groups because, in the former case, one can measure whether individuals accept culturally well-established folk theories regarding the negative traits of members of one ethnic group. Rudolph & Popp (2010) note that, like tolerance, trust is an "affective orientation" towards others. Therefore, people who have high levels of interethnic trust are more likely to be tolerant towards members of other ethnic groups. There is a possibility that measures of *trust* between members of different ethnic groups capture respondents' general willingness to trust others. However, when a respondents' *Generalized Trust*, their belief that most people can be trusted, is controlled for the relationship between *Interethnic Trust* local ethnic context and political competition remains unchanged.[7]

Table 2 shows the distribution of answers to some of these trust questions in Kenya and other Afrobarometer countries. The number of respondents answering that they do not trust members of other ethnic groups at all (23%) is about three times the number who would make the same claim about their coethnics (8%) or neighbors (8%). In addition, only 10% of Kenyans say that most people can be trusted. Thus Kenya is ranked 14th out of 17 Afrobarometer countries in terms of general interpersonal trust and levels of *interethnic* trust are lower than in all Afrobarometer countries except Nigeria.

Table 2: Interethnic Trust in Kenya and Other African Countries

	Kenya				**Other Countries**
	Other Groups	*Own Group*	*Neighbors*	*Relatives*	*Other Groups*
Not at All	0.23	0.08	0.08	0.03	0.21
Just a Little	0.45	0.43	0.35	0.24	0.34
Somewhat	0.24	0.34	0.35	0.33	0.27
A lot	0.07	0.16	0.22	0.40	0.18
N	1,251	1,270	1,275	1,275	21,411

Notes: Table reports estimated population proportions for the 2005 Kenyan Afrobarometer survey and other Afrobarometer Round 3 surveys in Benin, Botswana, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, and Zambia.

Local Ethnic Context

Data on local ethnic composition are politically sensitive and the Kenya National Bureau of Statistics does not officially release for this reason. I use data from the 2006 Register of Voters and a map of polling stations I created to measure local ethnic composition. The Register, which was publicly available, contains the names of registered voters and their polling station. Names in Kenya are associated with particular ethnic groups and are used socially as a gauge of ethnic identity and so I match names to groups in the register. For details on the name matching process see the Data Appendix.

The advantage of measuring ethnic composition at the level of the polling-station is that it allows one to examine ethnic patterns across sub-units within a small area (the administrative location).[8] While it would be possible to measure both diversity and segregation at a higher level of aggregation, locations

[7]See Table 9 in the Appendix.

[8] Even if one did have access to official data on ethnic composition in units smaller than the administrative location, it might be preferable to use the ethnic composition of polling stations as a unit of analysis because there are several in each location.

are an ideal unit because of their small size and correspondence with many people's conception of their neighborhood. Locations, as neighborhoods, have a social meaning for their residents.

Ethnic Fractionalization in location *j* is measuring using a standard index of fractionalization which measures the probability that two randomly selected people in location *j* will come from two different ethnic groups. That is

$$Ethnic\ Fractionalization = 1 - \sum_{g=1}^{G} \pi_{gj}^2$$

where π_{gj} is the proportion of people in location j who are members of group g.

Segregation is the unequal distribution of ethnic groups across parts of a region. There is an active debate on the best way to measure segregation that is related to debates concerning the measurement of economic inequality, a closely related concept (Hutchens 2001). Because American scholars studying segregation are most concerned about segregation between two groups – generally blacks and whites – most measures of segregation in the literature are not well-suited to a multi-group setting (Frankel and Volij 2008).

The measure of segregation used in this paper is Theil's *Information Index (Entropy Index)*, which captures how much *additional information* learnt about a person's ethnicity from knowing the sub-region in which they reside. This index is well-suited to measuring segregation when there are several groups (Reardon and Firebaugh 2002; Frankel and Volij 2008). Region A is more segregated than region B if knowing a person's sub-region within A reduces ones uncertainty about their ethnic identity to a greater extent in A than in B. Where groups are perfectly segregated across sub-regions knowing a person's sub-region allows us to perfectly predict their ethnic identity; if groups are perfectly integrated knowing a person's sub-region adds no additional information about their ethnicity.

The measure of uncertainty about ethnic identity used to calculate Theil's *Information Index* is Entropy which is itself a measure of ethnic diversity taking on its maximum value when the population is evenly distributed across groups and equaling 0 if everyone is from the same group.[9]

The measure of segregation used in this paper relates ethnic composition at the polling station and the location. Following Frankel & Volij(2008) *Theil's Information Index* (H_j) for location *j* is:

$$H_j = 1 - \frac{\sum_{k=1}^{K} \begin{pmatrix} Proportion\ of\ Location\ j \\ Voters\ Registered\ in\ in \\ Polling\ Station\ k \end{pmatrix} \begin{pmatrix} Entropy\ of\ Ethnic \\ Distribution\ in \\ Polling\ Station\ k \end{pmatrix}}{\begin{pmatrix} Entropy\ of \\ Ethnic\ Distribution \\ in\ Location\ j \end{pmatrix}}$$

Theil's Information Index (H_j) can also be expressed as

[9]If π_{gj} is the proportion of people in a location *j* who are members of group *g* then the *Entropy* of location *j* is

$$Entropy_j = \sum_{g=1}^{G} \pi_{gj} ln \frac{1}{\pi_{gj}}$$

$$H_j = 1 - \frac{\sum_{=1}^{K} \pi_{kj} \sum_{g=1}^{G} \pi_{kgj} ln \frac{1}{\pi_{kgj}}}{\sum_{g=1}^{G} \pi_{gj} ln \frac{1}{\pi_{gj}}}$$

where π_{kj} is the proportion of registered voters in location *j* registered at polling station *k* and π_{kgj} is the proportion of registered voters at polling station *k* who come from group *g*. The value of *H* ranges from 0, perfect integration, to 1 perfect segregation.

The maps in Figure 1 show the geographic incidence of *Ethnic Fractionalization* and *Theil's Information Index*. These maps show that both ethnic diversity and ethnic segregation are higher in areas that experienced high degrees of in-migration in the post-independence period, specifically urban areas and areas alienated to white settlers in the colonial period and resettled by Africans after independence. In addition, both ethnic segregation and diversity are clearly higher along the boundaries of what were "native" or "tribal" reserve areas, which were designed to be ethnically exclusive in the colonial period. These spatial patterns increase my confidence that these measures of ethnic diversity and segregation are valid.

Local ethnic context may be viewed as a feature of an area as a whole, something experienced by all residents regardless of their ethnic group (*Ethnic Context*$_j$). Alternatively, the same ethnic environment may be experienced differently depending on an individual's ethnic identity (*Ethnic Context*$_{gj}$). The difference between the two ways of thinking about local context is subtle. On the first account a person's interethnic attitudes are affected by the way in which *all other* people who do *not* share his or her ethnic identity are distributed across an area and on the second account all ethnic others are treated identically as coming from a *different* group than the respondent. Research on American social and political behavior concentrates on area and group specific measures because it examines the attitudes of one specific ethnic group towards members of another group, most commonly whites' attitudes towards blacks. In this case, it makes little substantive difference whether I summarize ethnic composition for all groups across the whole of a respondent's location or whether I use group-specific variables like the *Proportion Coethnics in Location* and the *Dissimilarity Index* for each respondent, largely because these variables are highly correlated.[10]

Controls

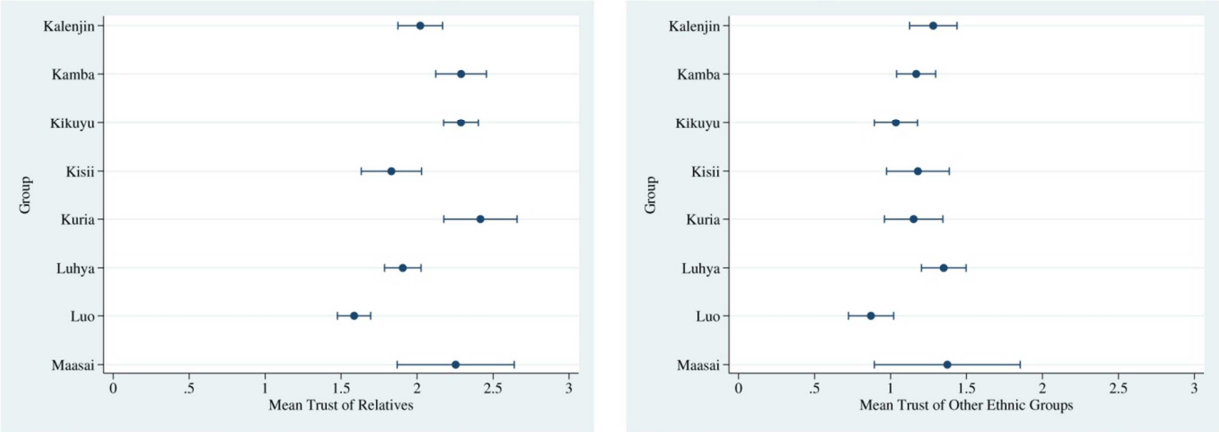
All regressions include controls for individual-level demographic characteristics that could affect attitudes towards members of other ethnic groups, including: gender, secondary education, and employment as an agricultural worker. Summary statistics are reported in Table 1. In addition, I control the proportion of the population in a location who are migrants and whether a location is urban, because both are likely confounds.[11]

I also include dummies for membership of each of the eight largest ethnic groups because it may be the case that members of different ethnic groups have lower levels of inter-personal trust for historical and cultural reasons (Nunn and Wantchekon 2009). A comparison of estimated mean levels of trust for relatives clearly indicates that levels of trust vary across groups. Trust in relatives differs more across ethnic groups than does interethnic trust, partly because levels of interethnic trust are lower than levels of trust in relatives. Figure 2 shows that members of the Luo, Luhya, and Kisii groups, which are geographically proximate to each other, express the lower level of trust in their relatives than members of other groups.

[10] I describe these measures in the Appendix, illustrate how they are related to the measures I include in the paper, and demonstrate that the main findings remain unchanged using alternative measures.

[11] Locations are classified as urban or rural using questions in the Afrobarometer and the *Proportion Migrants* is the percent of the residents in a location who were born outside that district in the 1999 census.

Figure 2: Trust by Ethnic Group



Because I am primarily interested in how social context affects ethnic attitudes, it is worth considering a different type of interethnic context – the respondent-interviewer interaction (Schuman 2008). Several studies illustrate that many Americans express more racial tolerance when interviewed by members of other groups. The literature on this particular type of social desirability bias is extensive.[12] However, little work has been done on these effects in sub-Saharan Africa. An important exception is work on the effect of quotas on tolerance in Burundi by Samii (2010). I control for whether a respondent and an interviewer are from the same ethnic group (*Coethnic Interviewer*).

Findings

Because respondents may select one of four ranked descriptions of their degree of trust in members of other ethnic groups, an ordered regression model is appropriate. Because ordered regression models can be difficult to interpret and, in this case, do not generate findings that are substantively different from the linear regression model, I present both ordinary least squares and ordered logit estimates.

Ethnic Tolerance and the Local Ethnic Environment

People sharing neighborhoods with members of other ethnic groups are more ethnically tolerant. Respondents report more *Interethnic Trust* in locations where *Ethnic Fractionalization* is high, consistent with *Hypothesis 1* (Table 3). In addition, residents of *segregated* neighborhoods are less trusting of members of other ethnic groups even when the underlying ethnic diversity of the location is controlled for (*Hypothesis 2*). Most of the findings that follow report estimates from ordered logit models.[13] Table 4 shows the marginal effect of each ethnic context variable on each of the four possible responses to the trust question from the models in Table 3, Column 2 with all other independent variables (including dichotomous ones) held at their means.

[12] For a discussion see Anderson et al. (1988) and Schuman (2008).

[13] Assuming that an OLS model is appropriate (and that there are equal intervals between ordinal responses) a standard deviation increase *Ethnic Fractionalization* is associated with an increase of 18% of a standard deviation in *Interethnic Trust* and *Segregation (Theil's Index)* with a decrease of 12% (Table 3, Model 2).

Table 3: Interethnic Trust and the Local Context

	OLS				*Ordered Logit*			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Ethnic Fractionalization	0.53**	0.61***	0.85***	0.86***	1.23**	1.41***	1.99***	1.99***
	(0.24)	(0.22)	(0.22)	(0.23)	(0.54)	(0.48)	(0.50)	(0.51)
Margin of Victory	-0.11	-0.12	0.06	0.03	-0.23	-0.27	0.18	0.15
	(0.13)	(0.13)	(0.18)	(0.25)	(0.30)	(0.30)	(0.42)	(0.58)
Segregation (Theil's Index)		-0.79**	-0.84**	-1.01		-1.72**	-1.85***	-2.04
		(0.36)	(0.33)	(0.96)		(0.78)	(0.71)	(2.31)
EF x Margin			-0.66*	-0.65			-1.59*	-1.58*
			(0.40)	(0.41)			(0.90)	(0.94)
Segregation x Margin				0.62				0.70
				(3.16)				(7.78)
Urban	-0.10	-0.11	-0.11	-0.11	-0.26	-0.29*	-0.28	-0.28
	(0.08)	(0.08)	(0.08)	(0.08)	(0.18)	(0.18)	(0.17)	(0.17)
Coethnic Interviewer	-0.14*	-0.13*	-0.14*	-0.14*	-0.31*	-0.30*	-0.31*	-0.31*
	(0.07)	(0.07)	(0.07)	(0.07)	(0.17)	(0.17)	(0.17)	(0.17)
Prop. Migrants	-0.47**	-0.54**	-0.50**	-0.50**	-1.02*	-1.17**	-1.08**	-1.08**
	(0.23)	(0.22)	(0.21)	(0.21)	(0.52)	(0.50)	(0.47)	(0.48)
No. of Clusters	97	97	97	97	97	97	97	97
N	1134	1134	1134	1134	1134	1134	1134	1134
Adjusted R^2	0.04	0.04	0.05	0.05				
AIC					2480	2477	2474	2476

Notes: Standard errors clustered at the level of the administrative location are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All models include controls for respondent gender, secondary education, and status as an agricultural worker, age, age-squared, as well as dummies for the following ethnic groups: Kalenjin, Kamba, Kikuyu, Kisii, Kuria, Luhya, Luo, and Maasai.

Ethnically diverse neighborhoods differ from homogenous ones in two important ways. First, urban areas are more ethnically diverse and it may be the case that people who live in towns and cities are more open-minded. However, the positive association between ethnic diversity and tolerance remains we include a dummy for urban areas and, in contrast to the pattern in the West, city-dwellers are less tolerant of members of other ethnic groups (Table 3). Second, ethnic diversity may be the result of high in-migration and people may be more trusting towards people they have a long history of interacting with. Barr (1999), for example, demonstrates that Zimbabweans settled in new villages after 1980 exhibit lower levels of interpersonal trust than people in older villages in behavioral games. The data support the claim that *Interethnic Trust* is lower when the proportion of the population who are recent migrants (*Prop. Migrants*) is higher, but recent in-migration cannot fully account for the positive association between local ethnic diversity and *Interethnic Trust*.

Table 4: Ordered Logit - Marginal Effects

	[2] Ethnic Fractionalization	[2] Theil's Index
Not at All	-0.24 **	0.29**
Just a Little	-0.06*	0.07
Somewhat	0.21***	-0.26**
Alot	0.08***	-0.10**

Notes: Table reports marginal effects (dX/dY) with all variables at their means for Table 3, Column 2.

Although locations are a good description of what respondents are likely to view as their neighborhood in my study areas, one concern with the analysis of contextual effects is that the findings may change if the way in which neighborhoods are defined is changed. Geographers call this the modifiable areal unit problem and it has two components. First, empirical results may depend on the scale used (the scale effect). Second, findings may vary by drawing different boundaries at the same scale (the zoning effect) (Fotheringham, Brunsdon, and Charlton 2000). I do not have the kind of data that would allow me to explore the zoning effect, but it is possible to test for whether defining an individual's social context at a different geographic scale changes the main findings of the paper. Following Cho & Baer(2010), I examined broader definitions of interethnic context, absorbing a respondent's location of residence with 1, 2, and 3 of its nearest neighbors. Increasing the *scale* of "neighborhoods" reduces the coefficients on the ethnic context variables.[14] The effect of *Ethnic Fractionalization* is robust to measurement at different geographic scales, but the effect of *Segregation (Theil's Index)* is not.[15] The fact that segregation does not have an effect on a larger scale, suggests that the lack of close residential proximity with members of other ethnic groups is what is important.

Finally, respondents express significantly less interethnic trust when interviewed by members of their own ethnic group 16% of a standard deviation of *Interethnic Trust* in the ordinary least squares models (Table 3, Column 2). This is substantively one of the larger effects I find and is about the same size as the difference between urban and rural residents. These findings suggest that other studies using these Afrobarometer surveys to gauge attitudes regarding ethnicity ought to take interviewer identity into account.

Accounting for Residential Sorting

Is it the case that people living in diverse and integrated settings are more tolerant because tolerant people seek out diverse settings? It is difficult to prove causal claims regarding the effect of local context on ethnic attitudes because local contexts arise out of the interdependent residential choices made by a large number of people (Schelling 1971). However, real residential choices are hard to change in an experimental setting.[16] Furthermore, because experimental studies generally manipulate subjects' *perceptions* and not political or demographic variables, these studies privilege psychological over resource competition accounts of the effect of local ethnic composition on tolerance. A few recent works on segregation in the U.S. use an instrumental variable approach for specific cities or exploit exogenous variation in ethnic composition and, while these approaches are more promising history does not often cooperate (Ananat 2007; Enos 2010).

Given these data I cannot demonstrate conclusively that local integration and diversity *cause* ethnic tolerance. However, residential sorting is unlikely to account for the findings presented here. The best test of this claim would be to examine whether migrants living in ethnically diverse areas are more tolerant than migrants living in homogenous areas. However, using these data it is not possible to know respondents' migration status and therefore I can only present indirect tests. Although *Interethnic Trust* is lower in high in-migration areas, neither *Ethnic Fractionalization* nor *Segregation (Theil's Index)* has a different effect on *Interethnic Trust* in high and low in-migration areas (Table 5, Columns 1 & 2). In addition, if the most tolerant individuals were sorting into ethnically diverse areas, one would observe *more* tolerant attitudes amongst ethnic minorities living in diverse areas. By contrast ethnic minorities (defined as members of groups with a share of the population smaller than 30%) are less, rather than more, likely to be tolerant in ethnically diverse settings (Table 5, Columns 3 & 4).

[14] I calculate a location's nearest neighbor by measuring distances between the central points of each location.

[15] These findings are presented in Table 10 in the Appendix.

[16] Lawrence et al. (2007) take advantage of a unique program randomly assigning housing vouchers (the Moving to Opportunity Program) to examine the health effect of moving people from areas in which poverty is highly concentrated and Gay(2009) examines the effect of the same program on political participation.

Another potential concern is that people living in diverse settings may be more likely to under-report negative attitudes towards members of other ethnic groups. That is, the social desirability bias associated with reporting ethnic intolerance may be more acute in ethnically mixed settings. However, the coefficient on the relationship between Coethnic *Interviewer* and Interethnic *Trust* is not smaller in ethnically diverse settings (Table 5, Columns 5 & 6). In addition, respondents' answers to the questions on national identification also support the view that social desirability bias does not account for the relationship between ethnic diversity integration and ethnic tolerance. There is less social stigma attached to stating that one is a national rather than ethnic identifier as is illustrated by the fact that there is no evidence of an identity-of-the-interviewer effect in responses to this question. However, respondents living in both ethnically diverse and integrated settings are more likely to be national rather than ethnic identifiers.[17]

Table 5: Examining the Effect of Residential Sorting

	[1]	[2]	[3]	[4]	[5]	[6]
Ethnic Fractionalization	2.08***	2.09***	1.32**	1.37**	1.42***	1.42***
	(0.75)	(0.73)	(0.59)	(0.61)	(0.52)	(0.52)
Segregation (Theil's Index)	-2.14***	-1.72	-2.09***	-1.96***	-1.71**	-0.96
	(0.74)	(2.78)	(0.64)	(0.71)	(0.79)	(1.02)
Prop. Migrants	-0.26	-0.15	-0.94*	-1.05**	-1.16**	-1.15**
	(0.74)	(1.06)	(0.48)	(0.53)	(0.50)	(0.50)
Margin of Victory	-0.25	-0.25	-0.30	-0.36	-0.27	-0.26
	(0.31)	(0.31)	(0.28)	(0.30)	(0.30)	(0.30)
Coethnic Interviewer	-0.32*	-0.32*	-0.24	-0.25	-0.29	-0.22
	(0.17)	(0.17)	(0.17)	(0.17)	(0.28)	(0.27)
EF x Prop. Migrants	-2.11	-2.18				
	(1.45)	(1.48)				
Segregation x Prop. Migrants		-1.76				
		(10.57)				
Minority			0.74**	1.19**		
			(0.32)	(0.49)		
EF x Minority			-0.85	-1.17*		
			(0.60)	(0.67)		
Segregation x Minority				-5.64		
				(5.86)		
EF x Coethnic Interviewer					-0.05	0.03
					(0.65)	(0.67)
Segregation x Coethnic Interviewer						-1.72
						(1.23)
No. of Clusters	97	97	97	97	97	97
N	1134	1134	1058	1058	1134	1134
AIC	2559	2561	2557	2558	2560	2562

Notes: The outcome variable equals 1 if a respondent is registered to vote and 0 otherwise. Standard errors clustered at the level of the administrative location are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All models include controls for respondent gender, secondary education, and status as an agricultural worker, age, age-squared, respondent and interviewer coethnicity, whether a location falls in an urban area, as well as dummies for the following ethnic groups: Kalenjin, Kamba, Kikuyu, Kisii, Kuria, Luhya, Luo, and Maasai.Akaike's Information Criterion (AIC) is calculated for each model where N = 1058 as in Model 3 to facilitate comparison.

Political Competition

As discussed above, existing research on ethnic politics suggests that the political interests of elites affect mass attitudes towards members of other ethnic groups (*Hypothesis 3*). I measure the degree to

[17]See Table 12 in the Appendix.

which local electoral politics is contested using the winner's Margin *of Victory* in an administrative location in the 2002 parliamentary elections. I find no relationship between the *Location Margin of Victory* and a respondents' reported *Interethnic Trust* in 2005. Indeed, in the models where there is a statistically significant association between *Interethnic Trust* and *Location Margin of Victory* it is in the opposite direction – places where one candidate dominates are associated with higher levels of interethnic trust.[18]

The absence of an association between electoral competition and tolerance is surprising given the association between electoral politics and ethnic conflict in Africa generally and Kenya specifically. Eifert et al. (2010) find that national political competition and the temporal proximity to national elections increases ethnic identification the Afrobarometer countries. If the dependent variable is ethnic salience to bring the outcome variable closer to that used by Eifert et al. (2010), there is no relationship between local electoral competitiveness and the degree to which respondents identify in national rather than *ethnic* terms.[19] In addition, the relationship between the variables measuring ethnic context remain unchanged across both of these dependent variables. That is, both ethnic diversity and integration are positively correlated with tolerance and national identification. One potential explanation for this disconnect between local and national electoral competition that may be worth exploring is the highly centralized nature of the Kenyan state at the time.

It may be the case that it is necessary to examine ethnic composition in a politically *relevant* jurisdiction.[20] In order to present an arguably fairer test of the political mobilization account of ethnic tolerance, I examine whether electoral competition and ethnic composition are linked to trust at the level of the parliamentary constituency. Recall that administrative locations are subunits of parliamentary constituencies. People living in diverse electoral constituencies are more likely to report that they trust members of other ethnic groups, but that constituency-level segregation has no effect on *Interethnic Trust* (Table 6).

The findings on constituency-level diversity suggest that segregation at the very local level is more important for ethnic tolerance than segregation over larger areas.[21] I also consider the effect of different election years and races. Because many parliamentary jurisdictions are ethnically homogenous, more people are likely to be presented with the choice between candidates who share their ethnic identity and those who do not at the presidential than the parliamentary level. However, local electoral competitiveness in presidential elections is unassociated with ethnic tolerance (Table 6, Column 2). Furthermore, the 2002 Kenyan elections are peculiar because this election pitted a multiethnic coalition against an incumbent party on the decline. In 1997, because more parties were running, more people had ethnically-identified parties they could support and I use measure of both parliamentary and presidential competitiveness at the *constituency* level (Table 6, Columns 3 & 4).[22] In both cases there is no statistically significant relationship between electoral competition and ethnic tolerance.[23]

[18]This lack of an association between local electoral competitiveness and ethnic tolerance is robust to a number of different ways of characterizing electoral competitiveness at the local level, whether competitiveness is measured by a dummy variable capturing whether the *Margin of Victory* was less than 10% or using the *Effective Number of Parties* as a measure of electoral competition. See Table 11 in the Appendix.

[19]See Table 12 in the Appendix.

[20]Although administrative locations are sometimes civic wards represented by local councilors, this is not always the case and matching location and ward boundaries is incredibly complex because they are in flux.

[21]This is confirmed by the findings for different levels of aggregation presented in Table 10, This discrepancy might arise because constituencies are a socially meaningful jurisdiction and the bespoke units in Table 10 are arbitrary.

[22] I do not use local-level measures of electoral competitiveness for 1997 because electoral results were not collected at the polling-station-level in these elections and the dataset contains a large number of errors as a result.

[23] I also tried to gauge the *stakes* associated with winning electoral office in each constituency, by measuring the value of Constituency Development Funds per capita in each of these constituencies. Constituencies in which

Table 6: Interethnic Trust and the Constituency-Level Context

	[2]	[2]	[3]	[4]	[5]	[6]
Constituency Ethnic Fractionalization	1.31***	1.27***	1.29***	0.87*	1.41***	3.28
	(0.44)	(0.42)	(0.47)	(0.47)	(0.43)	(2.42)
Constituency Segregation (Theil's Index)	-0.53	-0.65	-0.62	-0.17	-1.24	-1.06
	(1.09)	(1.14)	(1.07)	(1.10)	(1.05)	(1.16)
Margin (Parliamentary 2002)	0.31					
	(0.35)					
EF x Margin (Parliamentary 2002)	-0.58					
	(5.14)					
Margin (Presidential 2002)		-0.02				
		(0.41)				
EF x Margin (Presidential 2002)		-1.20				
		(2.31)				
Margin (Parliamentary 1997)			0.05			
			(0.34)			
EF x Margin (Parliamentary 1997)			-0.49			
			(0.95)			
Margin (Presidential 1997)				-0.63*		
				(0.33)		
EF x Margin (Presidential 1997)				-0.25		
				(1.53)		
Constituency Development Funds per capita					0.14	0.23
					(0.11)	(0.16)
EF x CDF per capita						-0.27
						(0.35)
No. of Clusters	98	98	98	98	98	98
N	1142	1142	1142	1142	1142	1142
AIC	2755	2756	2751	2751	2753	2754

Notes: Standard errors clustered at the level of the administrative location are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All models include controls for respondent gender, secondary education, and status as an agricultural worker, age, age-squared, the proportion of migrants in a location, respondent and interviewer coethnicity, whether a location falls in an urban area, as well as dummies for the following ethnic groups: Kalenjin, Kamba, Kikuyu, Kisii, Kuria, Luhya, Luo, and Maasai.

Perhaps contested elections do not on alter attitudes towards members of other ethnic groups unless electoral jurisdictions are *already* diverse. Therefore, the impact of electoral competition on tolerance may be higher in diverse than homogenous settings (*Hypothesis 4*). To account for this possibility I examine the interaction between *Ethnic Fractionalization* and the *Margin of Victory* in order to see whether it is *positive* and contested elections in diverse settings *decrease* ethnic tolerance (Tables 3 & 6). At both the location and constituency level and across different electoral races and years, the interaction between electoral competitiveness is either not statistically significant or indicates that ethnic diversity leads to less ethnic tolerance in uncompetitive rather than competitive areas.

MPs could expect to control more money are not more likely to have lower levels of ethnic tolerance (Table 6, Columns 5 & 6).

Conclusion

Under what circumstances are individuals more likely to be tolerant of ethnic differences? This paper has addressed two important aspects of this broader question; whether local ethnic composition and electoral politics affect ethnic tolerance. This paper draws on an extensive literature on this question in social psychology, ethnic politics, and American political behavior and advances the debate on the implications of ethnic diversity in a number of ways.

Local ethnic diversity and integration are associated with tolerance and demonstrate, albeit indirectly, that these findings are unlikely to arise because more tolerant people sort into diverse and integrated areas. Because there is no evidence of a relationship between shared residential space and tolerance in a country where resource conflict along ethnic lines is acute and sometimes violent, it seems likely that research on ethnic conflict would benefit from paying closer attention to the role of prejudice as suggested by Green & Seher (2003). In addition, my findings suggest policymakers ought to consider policies encouraging interethnic contact as an important complement to institutional reforms to mitigate resource conflict along ethnic lines.

Resource conflict and elite mobilization are undoubtedly important factors in enabling us to understand conflict between ethnic groups and it seems likely that politicians have the greatest incentive to highlight ethnic differences in ethnically diverse areas. However, there is no evidence for a negative interaction between ethnic diversity and electoral competition. This remains the case whether one considers local or constituency-level electoral competition across two different jurisdictions and two different elections.

Taken together with existing research on the role of *national* political competition and elections on ethnic salience and with research on the link between local electoral competition and violence, this paper raises two important questions for further research. First, to what extent do ordinary peoples' attitudes affect whether ethnic conflict occurs? Because those actually involved in communal violence are often a small minority, it would be worthwhile understanding the circumstances under which these individuals and groups fomenting violence benefit a public hostile to members of other ethnic groups (Kasara 2011).

Second, under what circumstances might national-level but not local-level political competition increase ethnic salience? One potential reason competitiveness does not affect individual attitudes is that Kenya was a highly centralized state during the time of the survey. Future research into the relative importance of national and local politics for promoting ethnic peace across a number of cases will enable political scientists to determine whether political institutions such as proportional electoral systems and fiscal decentralization, which purportedly increase national-level politicians' incentives to promote peace across ethnic lines, have different effects at the local level.

Appendix

A.1 Notes on the Dataset

A.1.1 Matching Names to Groups

Given the unavailability of disaggregated census data on ethnic composition, I construct estimates of ethnic composition at the location level by using the 2006 Voter Register and location-level data from the 1962 census. A few other studies use voter registers and match names to groups including Field et al. (2008) in Ahmedabad, India. Names in Kenya are associated with particular ethnic groups and are used socially as a gauge of ethnic identity.

To construct this measure, I calculate the probability that it falls into an administrative location in which a group has over 90% of the population and then use these probabilities to match names to groups. I created a map of local-level ethnic composition in 1962 in order to identify highly disaggregated ethnic majority jurisdictions in 1962 (Republic of Kenya 1964).

In order to match names to groups, one would like to calculate the probability that a person is a member of each ethnic group (g) given their last name ($P(g|name)$). However, it is not possible to calculate this probability given the available data.[24] For each of the approximately 500,000 unique name strings in the register I calculate the probability that a person holding it is resident in a location (s) where members of ethnic group g were a *supermajority* in 1962 ($P(s|name)$). This probability is calculated for each of the groups in the dataset and names were matched to groups where this probability is highest.

The probability that a person with some name is resident in an area s where group g has a supermajority is

$$P(s|name) = \frac{n_s}{n}$$

where n is the number of registered voters with the last name and n_s is the number of registered voters with that name located in area s.

To match names to groups it is necessary to make two decisions. First, choosing a threshold for determining what counts as a supermajority area. I use a conservative threshold of 90%. Using this rule there are 308 supermajority locations, comprising 72% of all locations.[25] I match names to the following groups Embu, Kalenjin, Kikuyu, Kamba, Luhya, Luo, Maasai, Mbeere, Meru, Mijikenda, Orma, Pokomo, Taita, Teso, and Tharaka. Second, a rule for assigning names to groups must be selected. Groups were matched to names with the highest value of $P(s|Name)$ only if this probability was over three times larger than the probability for the group with the second highest probability in order to reduce the possibility of misclassifying ethnically ambiguous names.

A.1.2 Mapping Polling Stations

Frequent changes in administrative jurisdictions which are uncoordinated across administrative agencies present a major challenge to measuring local-level electoral outcomes. I use polling stations to construct local-level aggregates because they are fixed points in space. I created a map of polling

[24] Enos (2010) takes this more direct approach, using Bayes' Rule to update the initial probability that a person with a surname is of a given raced based on the racial demographics of the census block in which they are resident. However, this method could not be used here because he takes initial probability that a name belongs to some racial group from a list of surname counts by race published by the U.S. Census Bureau and there is on such list for Kenyan names. That is, there is no way of calculating $P(name|g)$.

[25] More accurately, the 1962 census includes administrative locations and county council wards. Although the location remains a relevant administrative unit, present-day locations are probably more ethnically homogenous on average because they are smaller and because boundaries were redrawn after the 1962 census in order to ensure ethnic homogeneity (Republic of Kenya 1964).

stations drawing on two sources. First, I acquired large scale paper maps (on a scale of 1:50,000 or larger) covering 175 local authorities from the Electoral Commission of Kenya in 2007. These paper maps were constructed by the Electoral Commission for administrative purposes and, at that time, the Electoral Commission was a more credible source of data on both electoral and administrative boundaries than other government agencies. These maps were georeferenced and the polling stations were plotted from these maps. Because many polling stations are primary schools, I also used data from a survey of schools conducted by the Ministry of Education. The final dataset covers 97% of the 14,000 polling stations in existence in 2002 and 83% of the 21,000 polling stations in existence in 2006, the date of the voter register data.

A.2 Alternative Measures of Local Ethnic Context

In the main text segregation is measured by *Theil's Index* and diversity is measured by *Ethnic Fractionalization.* An alternative way of thinking about local ethnic composition is as something specific to each group within each location; that is assuming individuals are only affected by how others in their group are distributed relative to those outside their group. The main findings are unchanged if a location-group measure of ethnic context measure of ethnic context is used.

Rather than using *Ethnic Frationalization* in a location to gauge residents' potential interethnic contact, one can use the proportion of the population composed by members of a respondent's ethnic group in that location. All individuals from group *g* and residing in location *j* would be assigned the same value on the variable *Proportion Coethnics in Location* (π_{gj}).

Instead of treating segregation as a concept summarizing residential patterns in a location, it can be measured by ethnic group. That is, one can measure the degree of segregation of individuals who share a respondent's location of residence *and* ethnic identity using the *Dissimilarity Index* (*DI*). This measure of segregation captures how much the ethnic balance of sub-regions mirrors the ethnic balance in the parent region as a whole. It can also be thought of as the proportion of members of the group that would have to change residence to produce an even distribution. The *Dissimilarity Index* (*DI*) ranges from 0, perfect integration to 1 perfect segregation. A value of the *DI* is calculated for each group in each location in the dataset. For a member of group *g* in location *j*

$$Dissimilarity\ Index_{gj} = \frac{1}{2}\sum_{k=1}^{K}\left|\pi_{gkj} - \pi_{\sim gkj}\right|$$

where *k* indexes polling stations, π_{gkj} is, as above, the *proportion* of members of group *g* registered at polling station *k* in location *j*, and $\pi_{\sim gkj}$ is the proportion of registered voters in polling station *k* who are *not* members of group *g*. As stated above, this measure treats all ethnic others as identical and only measures the segregation of a member of group *g* from members of all other ethnic groups.

Each of these four measures captures a slightly different notion of local ethnic context and it is worth considering how they are related. The location and group specific measures of ethnic context are richer descriptions of an individual's ethnic context, but are harder to measure accurately, particularly for small groups. Table 7 shows the linear correlation coefficient between each of these four measures of diversity and segregation.

Table 8 presents the ordered logit regressions in Table 3 with different measures of ethnic diversity and segregation. Some scholars believe that ethnic polarization rather than ethnic diversity leads to conflict between members of different groups. However ethnic polarization – as measured by Montalvo & Reynal-Querol (2005) – is unrelated to tolerance. Respondents who are a majority in their location and respondents who are members of highly segregated groups report less *Interethnic Trust*.

Table 7: Correlation Between Measures of Local Ethnic Context

	Ethnic Fractionalization	Theil's Segregation Index	Prop. Coethnics in Location
Theil's Segregation Index	0.00		
Proportion Coethnics in Location	-0.83	-0.03	
Dissimilarity Index	0.16	0.82	-0.24

Notes: Table reports correlations for locations in the 2005 and 2008 Afrobarometer samples.

Table 8: Alternative Measures of Local Ethnic Composition

	[1]	[2]	[3]	[4]	[5]	[6]
Ethnic Polarization	0.87	1.38**				
	(0.59)	(0.54)				
Segregation (Theil's Index)		-2.79***				
		(1.01)				
Margin of Victory	-0.25	-0.27	-0.33	-0.45	-1.14**	-1.50**
	(0.31)	(0.31)	(0.27)	(0.30)	(0.55)	(0.76)
Prop. Coethnics in Location			-0.71***	-0.76**	-1.13**	-1.18**
			(0.27)	(0.34)	(0.52)	(0.51)
Segregation (Dissimilarity Index)				-0.78*	-0.78*	-1.26*
				(0.43)	(0.41)	(0.73)
Prop. Coethnics x Margin					0.93	1.14
					(0.80)	(0.82)
DI x Margin						1.42
						(1.81)
No. of Clusters	97	97	97	96	96	96
Observations	1134	1134	1058	1031	1031	1031
AIC	2483	2478	2482	2481	2482	2483

Notes: Standard errors clustered at the level of the administrative location are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All models include controls for respondent gender, secondary education, and status as an agricultural worker, age, age-squared, the proportion of migrants in a location, respondent, interviewer coethnicity, whether a location falls in an urban area, as well as dummies for the following ethnic groups: Kalenjin, Kamba, Kikuyu, Kisii, Kuria, Luhya, Luo, and Maasai. Akaike's Information Criterion (AIC) is calculated for each model where N = 1031 as in Model 6 to facilitate comparison.

A.3 Extra Tables

Table 9: Controlling for Generalized Trust

	(1)	(2)	(3)	(4)
Ethnic Fractionalization	1.22**	1.42***	2.06***	2.07***
	(0.54)	(0.49)	(0.48)	(0.49)
Segregation (Theil's Index)		-1.90**	-2.05***	-2.45
		(0.76)	(0.68)	(2.38)
Generalized Trust	1.61***	1.63***	1.64***	1.64***
	(0.36)	(0.36)	(0.36)	(0.36)
Margin of Victory	-0.21	-0.25	0.25	0.18
	(0.31)	(0.31)	(0.42)	(0.60)
EF x Margin			-1.77**	-1.74*
			(0.90)	(0.95)
Segregation x Margin				1.45
				(7.99)
Urban	-0.36*	-0.40**	-0.38**	-0.38**
	(0.19)	(0.19)	(0.19)	(0.19)
Coethnic Interviewer	-0.24	-0.23	-0.24	-0.24
	(0.19)	(0.18)	(0.18)	(0.18)
Prop. Migrants	-0.97*	-1.13**	-1.03**	-1.03**
	(0.51)	(0.49)	(0.48)	(0.48)
No. of Clusters	97	97	97	97
N	1128	1128	1128	1128
AIC	2430	2428	2424	2426

Notes: Standard errors clustered at the level of the administrative location are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *Generalized Trust* is a dummy variable that equals 1 if people answer "most people can be trusted" in response to the question: "Generally speaking, would you say that most people can be trusted or that you must be very careful in dealing with people?" All models include controls for respondent gender, secondary education, and status as an agricultural worker, age, age-squared, as well as dummies for the following ethnic groups: Kalenjin, Kamba, Kikuyu, Kisii, Kuria, Luhya, Luo, and Maasai.

Table 10: Local Context for Different Levels of Aggregation

	[2b]			
Number of Nearest Neighbors	*0*	*1*	*2*	*3*
Ethnic Fractionalization	1.41***	1.16**	1.13**	1.24***
	(0.48)	(0.50)	(0.50)	(0.48)
Segregation (Theil's Index)	-1.72**	0.03	-0.30	0.01
	(0.78)	(1.10)	(0.94)	(0.84)

Notes: Control variables as in Table 3, Column 2.

Table 11: Interethnic Trust and Alternative Measures of Local Electoral Competition

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Ethnic Fractionalization	1.19**	1.38***	1.26**	1.26**	1.28**	1.46***	-0.25	-0.37
	(0.52)	(0.48)	(0.50)	(0.50)	(0.55)	(0.49)	(0.98)	(1.02)
Segregation (Theil's Index)		-1.52*	-1.47*	-1.48*		-1.66**	-1.72**	-8.88
		(0.79)	(0.76)	(0.76)		(0.81)	(0.75)	(8.12)
Competitive Location	0.22	0.21	-0.02	-0.02				
	(0.23)	(0.22)	(0.48)	(0.49)				
EF x Competitive Location			0.56	0.55				
			(0.85)	(0.88)				
Segregation x Competitive Location				0.24				
				(4.82)				
Effective Number of Parties					0.04	0.05	-0.14	-0.29
					(0.12)	(0.13)	(0.16)	(0.25)
EF x ENP							0.78**	0.82**
							(0.35)	(0.36)
Segregation x ENP								3.08
								(3.52)
No. of Clusters	97	97	97	97	97	97	97	97
N	1134	1134	1134	1134	1134	1134	1134	1134
AIC	2735	2735	2737	2739	2739	2736	2733	2735

Notes: Standard errors clustered at the level of the administrative location are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All models include controls for respondent gender, secondary education, and status as an agricultural worker, age, age-squared, the proportion of migrants in a location, respondent and interviewer coethnicity, whether a location falls in an urban area, as well as dummies for the following ethnic groups: Kalenjin, Kamba, Kikuyu, Kisii, Kuria, Luhya, Luo, and Maasai.

Table 12: National Identification and Local Ethnic Context

DV: National Identification

	[1]	[2]	[3]	[4]
Ethnic Fractionalization	0.79	1.17***	1.17**	1.17**
	(0.57)	(0.42)	(0.52)	(0.53)
Segregation (Theil's Index)		-3.70***	-3.70***	-4.04
		(0.71)	(0.71)	(2.94)
Margin of Victory	0.19	0.12	0.12	0.06
	(0.26)	(0.25)	(0.40)	(0.57)
Urban	-0.50*	-0.57**	-0.57**	-0.57**
	(0.27)	(0.25)	(0.25)	(0.26)
Coethnic Interviewer	0.11	0.13	0.13	0.13
	(0.13)	(0.13)	(0.13)	(0.14)
Prop. Migrants	-0.01	-0.31	-0.31	-0.31
	(0.56)	(0.48)	(0.48)	(0.48)
EF x Margin			0.01	0.02
			(1.03)	(1.04)
Segregation x Margin				1.26
				(11.07)
No. of Clusters	97	97	97	97
N	1148	1148	1148	1148
AIC	2894	2884	2886	2888

Notes: The outcome variable is a respondent's identification with national rather than ethnic groups, that is their response to the question "Let us suppose that you had to choose between being a [Ghanaian/Kenyan/etc.] and being a X [respondent's identity group]. Which of these two groups do you feel most strongly attached to?" This variable = 1 if the respondent answers that they feel only like a member of their ethnic group, =2 if identify more with ethnic than national identity, = 3 if they feel equally members of their ethnic and national group, = 4 if they feel national then ethnic, and = 5 if they feel only like a member of their national group. Standard errors clustered at the level of the administrative location are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All models include controls for respondent gender, secondary education, and status as an agricultural worker, age, age-squared, as well as dummies for the following ethnic groups: Kalenjin, Kamba, Kikuyu, Kisii, Kuria, Luhya, Luo, and Maasai.

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