


ORIGINAL ARTICLE

Surrounded and threatened: how neighborhood composition reduces ethnic voting through intimidation

Ted Enamorado^{1*} and Svetlana Kosterina² 

¹Assistant Professor of Political Science, Washington University in St. Louis, St. Louis, MO 63130, USA and ²Assistant Professor of Economics, University of Pittsburgh,, Pittsburgh, PA 15213, USA

*Corresponding author. Email: svk14@pitt.edu

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Abstract

Ethnic voting is an important phenomenon in the political lives of numerous countries. In the present paper, we propose a theory explaining why ethnic voting is more prevalent in certain localities than in others and provide evidence for it. We argue that local ethnic geography affects ethnic voting by making voters of ethnicity that finds itself in the minority fear intimidation by their ethnic majority neighbors. We provide empirical evidence for our claim using the data from round 4 of the Afrobarometer survey in Ghana to measure the voters' beliefs that they are likely to face intimidation during electoral campaigns. Using geocoded data from rounds three and four of the Afrobarometer, as well as data from the Ghana Demographic and Health Survey, we find no evidence for local public goods provision as an alternative mechanism.

Keywords: Ethnic voting; neighborhood composition; voter intimidation

1. Introduction

In this paper, we propose a theory of ethnic voting based on local ethnic geography. We argue that when one ethnic group surrounds another in a neighborhood, a member of the minority group is likely to choose to vote for a candidate from the majority one due to the fear of intimidation by the majority group. The minority votes for non-coethnic candidates because, surrounded by the majority group, it must necessarily interact with this group with great frequency. This intensity of interaction is not achieved when both groups live in ethnically homogeneous communities and thus have fewer opportunities and incentives to communicate and engage in joint endeavors. To support our claims, we use several variables from the Afrobarometer surveys in Ghana. The largest ethnic group in Ghana, comprising 44 percent of the population, are Akans. Our theory predicts that Akans will intimidate non-Akans in Akan-majority localities, and that this intimidation will cause non-Akans to vote for the the New Patriotic Party (NPP), the party known to advance the interests of Akans. Thus, we use the questions that ask the respondents whether they fear becoming a victim of political intimidation during election campaigns and whether they believe that people have to be careful of what they say about politics. We show that living in a neighborhood with a high percentage of Akans only makes an individual more likely to express the intention to vote for the NPP candidate if this individual fears becoming a victim of political intimidation or believes that people have to be careful of what they say about politics. We also address the most prominent alternative explanation for why individuals may fail to vote along the ethnic lines: provision of local public goods. The instrumental theory of ethnic voting posits that individuals vote along ethnic lines because they expect that they will receive public goods only if they elect their coethnics

(Ferree 2006, Carlson 2015). Recently, Ichino and Nathan (2013) have suggested that the provision of public goods may also explain non-ethnic voting: individuals living in a neighborhood where some ethnicity is in the majority may vote for the candidate of that ethnicity even if she is not their coethnic because they anticipate that she will provide non-excludable public goods in an area where the candidates' coethnics are in the majority. We do not find support for this alternative explanation in the data.

Using geocoded data from rounds three and four of the Afrobarometer, as well as data from the Ghana Demographic and Health Survey (DHS), we show that the impact on the vote choice of living in a neighborhood with a high percentage of Akans does not vary depending on the presence of local public goods in the area and that our finding that the percentage of Akans in the neighborhood only matters for the vote choice when the respondents fear intimidation is robust to controlling for local public goods provision (measured either in levels or changes). We also find that the percentage of Akans in the neighborhood has no statistically significant impact on the levels of local public goods provision.

The results advance our understanding of ethnic voting and the role of intimidation in vote choice in developing countries. We show that the interaction between neighborhood composition and voters' concern about intimidation reduces ethnic voting. This finding implies that an instrumental motive for (non)-ethnic voting is present.¹ This instrumental motive is the desire to avoid political intimidation. However, we do not rule out expressive reasons for ethnic voting: citizens may want to vote for coethnics for expressive reasons but choose not to due to intimidation. Thus both instrumental and expressive reasons may drive ethnic voting. Our findings are especially relevant for those African countries that experience marked ethnic divides and recurrent episodes of electoral violence. Because we find that even in a country like Ghana, which is considered to be one of the most stable democracies in Africa, voters' concern about intimidation impacts ethnic voting, our estimates are likely to be a lower bound on the estimates for a representative sample of developing countries. Thus the case of Ghana constitutes a hard test for our expectation that neighborhood composition affects ethnic voting by making voters of the minority ethnicity concerned about intimidation.

2. Theory

2.1 Ethnic voting and intimidation

Our paper proposes a theory of ethnic voting based on local ethnic geography. We argue that, in order to avoid intimidation by ethnic majority neighbors, members of the minority ethnicities vote for the parties associated with the ethnic majority. Moreover, were they not living in an area where they were a minority, they would have instead voted for a party associated with their own ethnicity. Thus being surrounded by the majority ethnicity and wanting to avoid intimidation causes ethnic minorities to not vote along ethnic lines. We define ethnic voting as the tendency of the voters belonging to an ethnic group to vote for candidates from this ethnic group or candidates advancing the interests of this ethnic group. In the setting in the present paper, a tendency of individuals with non-Akan ethnicity to vote for the NPP, a party that is perceived to advance the interests of Akans, is inconsistent with ethnic voting.

The patterns we find in the data suggest that the true preference of the individuals is to vote along ethnic lines: if they did not want to vote along ethnic lines, fear of intimidation by ethnic majority neighbors would not have had a discernible impact on the vote choice of the ethnic minorities in the Akan-majority neighborhoods.²

¹See, for example, Posner 2005, Wantchekon 2003, Carlson 2012 on instrumental ethnic voting and, for example, Horowitz 1985 on expressive ethnic voting. Section 3 reviews the related literature on the theories of ethnic voting.

²See Horowitz 1985, Chandra 2004 for theories of ethnic voting and additional empirical evidence for its presence.

We conceptualize political intimidation as unfolding before, during, and after the election. Prior to the election and during the polls, voters may face threats of sanctions should the non-majority ethnicity candidate win. After the election, the sanctions might be carried out if the non-majority candidate indeed wins. Voters may also face violence and threats of violence for expressing intent to vote for a non-majority ethnicity candidate. The goal of such pre-election intimidation efforts is to induce the citizen expressing the vote intent to change her mind and to show to the other citizens that the agents engaging in intimidation are able and willing to carry out the sanctions. Theories of both pre- (Chatuverdi 2005, Collier and Vicente 2012) and post- (Ellman and Wantchekon 2000) electoral intimidation have been developed in the literature.

Ballot secrecy is not needed for the proposed mechanism to work. To see why consider the following example. Suppose that $2/3$ of the voters in a district are of the majority ethnicity, while $1/3$ are of the minority ethnicity, and it is known that each individual prefers to vote along ethnic lines. We call the party of the ethnic majority party \mathcal{A} and the party of the ethnic minority party \mathcal{B} . Suppose that with probability $2/3$ individual experiences a preference shock causing her to vote for party \mathcal{A} with probability $1/3$ and to vote for party \mathcal{B} with probability $2/3$. Then if everyone votes for the majority ethnicity party (conditional on not experiencing a preference shock), its expected vote share is $5/9$, while if only the majority ethnicity votes for the majority party, its expected vote share is $4/9$. Thus if party \mathcal{A} loses, the majority ethnicity can infer that some members of the minority ethnicity failed to vote for it, which gives members of the majority ethnicity grounds for sanctioning members of the minority ethnicity.³

2.2 Evidence of political intimidation

According to the Freedom House report, “Ghanaian elections have been fraught with extreme tension, including intimidation, organized thuggery, and sporadic flare-ups of interparty violence” (Gyimah-Boadi and Brobbey, 2012). The Carter Center, after observing the voter registration process for the 2008 presidential election in Ghana, reported that “In several areas visited by Center observers, it was clear that the lack of political tolerance produced an intimidating environment” (Carter Center, 2008). Paul Nugent writes about the 2000 election in Ghana: “There was some pre-election violence in parts of Accra, significant bloodshed in Bawku during the first round of voting on 7 December and instances of intimidation at the time of the Presidential run-off on 28 December” (Nugent 2001, 406). Other scholarly (Gyimah-Boadi 2009, Straus and Taylor 2012) and journalistic (Kennedy, 2011) accounts confirm the presence of political intimidation in the elections in Ghana as well.

There have been reports of the NPP election observers being kept away from the polling stations and arrested by the army (Osei 2009, 115). Politicians in Ghana have hired “macho men” to intimidate opposition supporters (Amankwaah 2013). Moreover, there is some qualitative evidence that a higher share of party supporters in a neighborhood facilitates voter intimidation. As one researcher writes, “The majority of the interviews and reported cases of violence in Ghana suggest that election-related violence often occurs in areas that are strongholds of one of the two larger parties, where minority supporters can easily be intimidated” (Amankwaah, 2013, 14).

3. Related literature

The present paper is related to the literature on ethnic voting and its determinants. Theories of ethnic voting have argued that citizens engage in ethnic voting due to either instrumental reasons or expressive reasons. Scholars conceptualize instrumental ethnic voting as individuals voting for

³A similar argument has been made in the vote-buying literature, which finds that brokers can use aggregate electoral results to sanction groups instead of relying on observing the individuals’ votes (see e.g., Rueda 2017).

the candidates because the candidates' ethnicity provides information about groups to which these candidates are likely to deliver public goods and other benefits (Ferree 2006, Carlson 2015). In particular, individuals engaging in instrumental ethnic voting expect that politicians will provide benefits only to their coethnics, to the extent that these benefits are excludable. On the other hand, expressive ethnic voting is devoid of such concerns. Instead, it is seen as being akin to ideological voting (Wantchekon 2003), conceptualized as using the act of casting a vote as an affirmation of one's identity as a member of an ethnic group (Horowitz 1985) or is viewed as an effort to elect a coethnic candidate because having a coethnic candidate in power raises the status of the voter's ethnic group (Chandra 2004).

By providing evidence that citizens can fail to engage in ethnic voting because they feel intimidated, the present paper contributes to a more nuanced understanding of ethnic voting. Our argument implies that individuals may want to engage in ethnic voting for expressive reasons but will choose not to for fear of adverse consequences in the localities where another ethnic group is in the majority.

Previous literature has identified the impact of local ethnic geography on ethnic voting. In their 2013 article titled "Crossing the line: Local Ethnic Geography and Voting in Ghana," Ichino and Nathan (2013), using data from Ghana as we do, show that a higher percentage of citizens of a particular ethnicity in a neighborhood makes non-coethnics more likely to vote for the candidates of that ethnicity. They suggest that this is due to the expectation that politicians will provide local public goods in the areas where their coethnics are in the majority and, because these public goods are locally non-excludable, minority ethnicities in these areas will also benefit. However, Ichino and Nathan (2013) have not provided empirical evidence for this mechanism. The present paper confirms that neighborhood composition affects vote choice and provides evidence that this impact is due to the voters' concern about intimidation. Moreover, the present paper finds no evidence for local public goods provision as an alternative mechanism.

Ichino and Nathan (2013) described their contribution as extending the theory of instrumental ethnic voting by showing that local ethnic geography affects ethnic voting and conjecturing that this impact is through expectations of local public goods provision. Our paper contributes to the theory of ethnic voting as well, showing that there is evidence that citizens in Ghana are guided by instrumental reasons in choosing whether to vote for non-coethnics. While theories of instrumental ethnic voting (Posner 2005, Wantchekon 2003, Carlson 2012) have tended to focus on a particular instrumental reason for vote choice—the expectation that politicians are more likely to provide local public goods to their coethnics, other instrumental reasons are, in principle, possible. The key contribution that we make is to identify a novel instrumental reason—fear of political intimidation—for voting for candidates of a particular ethnicity.⁴

Exploring the heterogeneity of treatment effects, Ichino and Nathan (2013) find that local ethnic geography affects ethnic voting only in rural areas. They suggest that this is due to local public goods being more easily accessible to a larger population in urban areas. In contrast, we find that for respondents fearing political intimidation the effect is present in both rural and urban areas (for respondents who feel that they have to be careful when talking about politics, on the other hand, it is only present in rural areas). Thus, unlike the mechanism Ichino and Nathan suggest, the mechanism we identify may be at work regardless of the urbanization level.

Our paper is also related to the literature on the allocation of local public goods. A number of recent papers have identified a relationship between ethnic segregation and local public goods provision. For example, Ejdemyr et al. (2018) show that Member of Parliament (MP) in Malawi are more likely to target local public goods to their coethnics when the coethnics are

⁴In our framework, instrumental and expressive motives for ethnic voting are not mutually exclusive. This is because citizens may want to vote for coethnics for expressive reasons but, when surrounded by non-coethnic majorities, they may choose to not act on this desire for an instrumental reason, in order to avoid political intimidation. Thus our results provide evidence for instrumental motives in ethnic voting and are also consistent with expressive ethnic voting.

sufficiently segregated. Harris and Posner (2019) showed that politicians in Kenya are more likely to reward their supporters by allocating Constituency Development Fund projects when the supporters and the opponents are geographically segregated. The reason is that segregation makes it easier to target local public goods only to the supporters.⁵ Relatedly, a paper by Harding (2020) demonstrates that geography matters for the allocation of public goods, finding that competitive elections lead politicians to implement pro-rural policies to get the votes of the rural majority. Harding shows that this pro-rural bias manifests in improved access to primary education and lower infant mortality rates, but only in rural areas.

Finally, the present paper relates to the literature on voter intimidation. This literature has addressed the questions of whether voter intimidation happens before or after the elections, who is targeted, who the perpetrators are and which tactics are used. With respect to timing, Ellman and Wantchekon (2000) present a theory of post-election violence, while Chatuverdi (2005) and Collier and Vicente (2012) present theories of voter intimidation employed before and during elections.

Independent of the timing of electoral violence, the victims are likely to be swing voters since their choice is most likely to be swayed (Collier and Vicente 2012; Chatuverdi 2005, Robinson and Torvik 2009, Gutierrez-Romero 2014), voters who are poor and uneducated since they are the most vulnerable (Bratton 2008, Gonzalez-Ocantos *et al.* 2020), and voters who live in rural areas since monitoring is more difficult in those areas (Gonzalez-Ocantos *et al.* 2020). The literature is divided on who should be more likely to employ electoral violence, with some expecting that strong incumbents will intimidate voters (Chatuverdi 2005), and some predicting that weak incumbents will do so (Collier and Vicente 2012).

Over half of all elections in Sub-Saharan Africa experience some form of electoral violence and intimidation (Burchard 2015). Most electoral violence occurs prior to the election and is associated with the incumbent party (Straus and Taylor 2012). The tactics of the perpetrators of electoral violence in Sub-Saharan Africa include employing youth wings of the parties and hiring thugs (Makumbe 2002). The literature on voter intimidation, however, considers neither the interaction between neighborhood composition and voter intimidation nor its impact on ethnic voting.⁶ Our contribution to the literature on voter intimidation is to provide a more nuanced understanding of the conditions under which intimidation is used by showing that it is facilitated when an ethnic minority is surrounded by an ethnic majority in a locality.

4. Measuring voters' concerns

4.1 Main independent variables

We use the following question from round 4 of the Afrobarometer to measure intimidation: "During election campaigns in this country, how much do you personally fear becoming a victim of political intimidation or violence?"⁷ 49 percent of the 1200 respondents report that they fear political intimidation "A little bit," "Somewhat," or "A lot," while 48 percent do not fear being a victim of political intimidation. The remaining 3 percent of the respondents chose the "Don't know" option. A closer look at the distribution of the political intimidation variable reveals that 24 percent of the respondents fear political intimidation "A little bit," 11 percent fear political intimidation "Somewhat," 13 percent of the respondents fear political intimidation "A lot,"

⁵See also Franck and Rainer 2012 and De Luca *et al.* 2018 on the relationship between ethnic segregation and ethnic favoritism.

⁶An exception is Fafchamps and Vicente 2013. However, the focus of their work differs from ours: they are interested in the effects of anti-intimidation campaigns and the channels through which such campaigns work, including local interactions.

⁷We have recoded the responses so that 0 means "Not at all," 1 means "A little bit," 2 means "Somewhat," and 3 means "A lot." If the respondent answered "Don't know," we treat the observation as missing.

Moreover, non-Akans fear political intimidation “A lot” to a greater extent than Akans (62 percent, as compared to 38 percent). The following question from the Afrobarometer is used to measure the voters’ belief that they cannot express their political views freely: “In this country, how often do people have to be careful of what they say about politics?”⁸ 50 percent of the respondents report that people have to be careful of what they say about politics “Often” or “Always,” while 46.5 percent of the respondents believe that people in Ghana “Rarely” or “Never” have to be careful in expressing their political views. The remaining 3.5 percent report that they “Don’t know.”⁹

These descriptive statistics suggest that political intimidation and concerns about political expression are prevalent enough in Ghana to affect electoral outcomes and lend plausibility to our hypothesis that neighborhood composition affects vote choice through voters’ fear of intimidation.

4.2 Data

The main dependent variable in our analysis is a binary indicator that takes a value of 1 if the respondent indicated the intention to vote for the NPP in the 2008 presidential election and 0 otherwise. The main independent variables are fear of political intimidation (*Political Intimidation*), concerns about political expression (*Careful*), and the share of Akans within a 30 km radius of the respondent’s location. In total, 1200 respondents participated in round 4 of the Afrobarometer in Ghana. Table A1 in the Appendix presents descriptive statistics for the variables used in our analysis.

The Afrobarometer data is better suited for our analysis than other possible data sources, such as the polling station-level data. This is because, as we explain in greater detail in the Appendix, the use of aggregate data for explaining individual-level behavior is problematic. Consider the following example. If a higher share of Akans in a neighborhood was associated with a higher percentage fearing intimidation and a higher percentage voting for the NPP at a polling station, we could not be sure whether the individuals who fear intimidation, or a different set of individuals entirely, were voting for the NPP. In other words, polling station-level data is subject to the ecological inference problem. For this reason, we do not use the polling station-level data in our main analysis.

Polling station-level data is used in a related paper by Ichino and Nathan (2013). We show in Section A1.6 in the Appendix that their results are driven by incorrect standard errors. In particular, as we show in Table A39 in the Appendix, once we properly account for the uncertainty in the estimates by clustering the standard errors by electoral districts and using wild cluster bootstrap, we find that the polling station-level data does not contain enough variation to precisely estimate the effects we are interested in.

4.3 Ethnic groups and elections in Ghana

In this section, we briefly summarize the facts about ethnic groups and elections in Ghana that are relevant to our arguments. Akans are the largest ethnic group in Ghana, comprising 44 percent of the population. The other sizable ethnic groups are Dagombe, Ewe and Ga, comprising 16, 12 and 8 percent of the population, respectively (Encyclopedic World Atlas 2002, 108).

Since 1992, parliamentary and presidential elections have been held in Ghana every four years. The National Patriotic Party (NPP) and the National Democratic Congress (NDC) emerged as

⁸The responses are coded as follows: 0 means “Never,” 1 means “Rarely,” 2 means “Often” and 3 means “Always.” If the respondent answered “Don’t know,” we treat the observation as missing.

⁹Figures A1 and A2 in the Appendix show the distributions of the fear of political intimidation and the belief that people have to be careful of what they say about politics for Akans and non-Akans.

the main contenders in the elections. The NDC won the election in 1992. Since then, power changed hands between the NDC and the NPP three times: in 2000, 2008, and 2016. The 2008 election was the closest in Ghana's history, with the NDC presidential candidate winning the runoff election with 50.23 percent of the vote.

Ethnic voting has been prominent in Ghanaian elections, with the NPP seen as the party associated with Akans. On this, Ziblim Iddi writes "In Ghana, the Ashanti and Wolta regions are noted for voting largely along ethnic lines. The Akan votes in the Ashanti region largely go to the NPP, while the Ewe votes in the Volta region go to the NDC" (Iddi 2016, 80). Fridy (2007, 281) writes that "ethnicity matters in Ghanaian elections far more than socioeconomic variables." According to Faanu and Graham, "the NDC and the NPP are tagged as Ewe-Northerners party and Akans party, respectively" (Faanu and Graham 2017, 141) and "the Akan-non-Akan divide has shaped elections" Faanu and Graham (Faanu and Graham 2017, 154). A number of other scholars such as Arthur (2009) and Adams and Agomor (2015) confirm the importance of ethnic voting in Ghana. Further, there is evidence of Ghanaian parties using ethnic appeals: as Faanu and Graham (2017, 143) write, "...parties in Ghana often play the ethnic tone on campaign platforms during elections."

5. The impact of the concern about intimidation

Model (1) in Table 1 estimates the impact of the percentage of Akans in the neighborhood with the intention to vote for the NPP candidate. We find that this impact is not statistically significant. Model (2) in Table 1 adds to the specification used in model (1) an interaction of the percentage of Akans in the neighborhood and the *Intimidation* variable.¹⁰ We find that the percentage of Akans in the neighborhood has no statistically significant impact when *Intimidation* is 0 or 1 but has a positive and statistically significant impact when *Intimidation* takes values 2 and 3 on a scale that goes from 0 to 3. Substantively, increasing the percentage of Akans in the 30 km radius by 10 percent makes a respondent who fears becoming a victim of political intimidation or violence during an election campaign "Somewhat" 1.72 percent more likely to express an intent to vote for the NPP candidate, while if the respondent fears political intimidation "A lot," the probability of expressing an intent to vote for the NPP candidate increases by 2.56 percent.

Model (3) in Table 1 adds to the specification used in model (1) an interaction of the percentage of Akans in the neighborhood and the *Careful* variable. Similar to the impact of *Intimidation*, we find that the percentage of Akans in the neighborhood has no statistically significant impact when *Careful* is 0 or 1 but has a positive and statistically significant impact when *Careful* takes values 2 and 3 on a scale that goes from 0 to 3. Increasing the percentage of Akans in the 30 km radius by 10 percent makes a respondent who believes that he or she "Often" needs to be careful when expressing political views 1.38 percent more likely to express an intent to vote for the NPP candidate, while if the respondent believes that he or she "Always" needs to be careful in political expression, the respondent is 2.21 percent more likely to express an intent to vote for the NPP candidate.

Finally, model (4) in Table 1 adds to the specification used in model (1) an interaction of the percentage of Akans in the neighborhood and the *Intimidation* variable and an interaction of the percentage of Akans in the neighborhood and the *Careful* variable. We find that if a respondent both fears political intimidation "A lot" and believes that he or she needs to "Always" be careful in political expression, then increasing the percentage of Akans in the 30 km radius by 10 percent makes the respondent 5.55 percent more likely to express an intent to vote for the NPP candidate.¹¹

¹⁰We use the data for Akans and not for other ethnic groups because the variation in the percentage of an ethnic group in a neighborhood is the greatest for Akans, and this variation facilitates a more precise estimation.

¹¹Table A2 in the Appendix presents the results weighting the observations by the post-stratification weights included in Round 4 of the Afrobarometer. Because the use of weights in regression analysis (as opposed to descriptive statistics) remains

Table 1. The Impact of Percent Akan in the 30 km Radius on the Intent to Vote for NPP Without and With Intimidation

(1)				
<i>No interactions</i>				
Marginal effect of <i>Akan30</i>	0.089			
Standard error	(0.079)			
(2)				
<i>Intimidation</i>				
	Not at all	A little bit	Somewhat	A lot
Marginal effect of <i>Akan30</i>	−0.039	0.072	0.172**	0.256**
Standard error	(0.095)	(0.080)	(0.088)	(0.110)
(3)				
<i>Careful</i>				
	Never	Rarely	Often	Always
Marginal effect of <i>Akan30</i>	−0.043	0.049	0.138*	0.221**
Standard error	(0.108)	(0.086)	(0.080)	(0.092)
(4)				
<i>Intimidation and careful</i>				
	Not at all, Never	Not at all, Always	A lot, Never	A lot, Always
Marginal effect of <i>Akan30</i>	0.007	−0.042	−0.173	0.555***
Standard error	(0.124)	(0.132)	(0.137)	(0.116)

Model (1) does not include interaction terms. Model (2) includes an interaction term for *Akan30* and *Intimidation*. Model (3) includes an interaction term for *Akan30* and *Careful*. Model (4) includes interaction terms for *Akan30* and *Intimidation*, as well as for *Akan30* and *Careful*. Table A38 in the appendix shows additional results from model (4), providing marginal effects of *Akan30* conditional on different combinations of the levels of *Intimidation* and *Careful*. All models include the following additional controls: indicators for major ethnic groups in Ghana (Akans, Ewe, Dagomba), gender, perception of the economy, poverty, local level of development and indicators for a central region and for urban and rural areas. The coefficients presented in the table are marginal effects with continuous variables held at means and binary variables held at median values. Standard errors obtained via the delta method and clustered by enumeration area in parentheses. ***p < 0.01, **p < 0.05, *p < 0.10.

The magnitude of our estimates is comparable to the magnitude of the estimates in Ichino and Nathan (2013). Ichino and Nathan estimate that increasing the percentage of Akans in the 30 km radius by 10 percent makes a respondent 3.5 percent more likely to express an intent to vote for the NPP candidate. This is larger than the effect we estimate for respondents who fear political intimidation or violence (2.56percent at the maximal level of *Intimidation*) but smaller than the effect for the respondents who both fear political intimidation and believe that they need to be careful when expressing political views (5.55 percent at the maximal level of *Intimidation* and *Careful*).

To further illustrate the magnitude of the effects, Figure 1 shows the predicted probabilities of supporting the NPP across the relevant independent variables. Specifically, for each of the values for *Intimidation* and *Careful* in Table 1, we calculate the predicted probabilities of support for the NPP fixing the share of Akans in the 30 km radius at low (10 percent, light blue bars) and high levels (80 percent, dark blue bars).¹² In line with the findings above, higher levels of *Intimidation* and *Careful* are associated with higher predicted support for the NPP. For example, in our preferred specification (model (4)), for respondents who fear intimidation and believe they should be

controversial (see Gelman (2007) and Solon *et al.* (2015)) and because our conclusions are unaltered when we use weights, our regression estimates are unweighted everywhere except for Table A2.

¹²These two levels of *Akan30* represent the 25th (low) and 75th percentile (high) of the empirical distribution. In addition, in Section A1.2 in the Appendix, we present the predicted probabilities of support for the NPP across all values of *Akan30*. We show that, conditional on intimidation, there is a strong positive relationship between the share of Akans in a neighborhood and the probability of voting for the NPP.

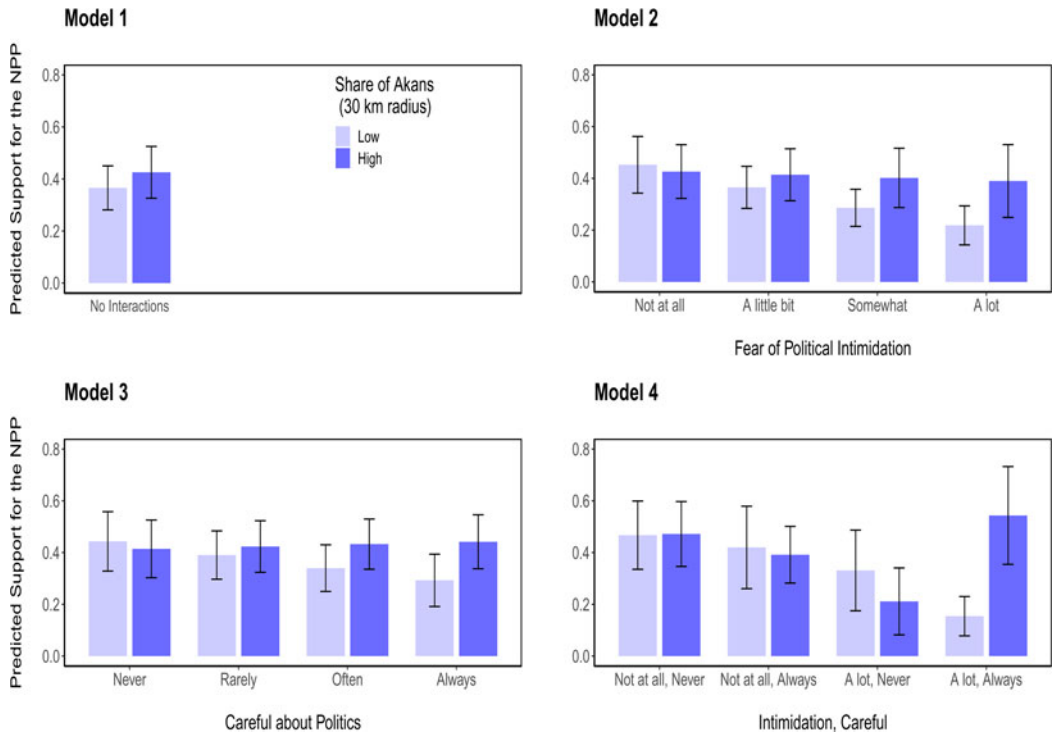


Figure 1. Predicted Support the NPP.

Each bar represents the estimated support for the NPP with the corresponding 95 percent confidence interval (black vertical lines). The share of Akans in a 30 km radius is fixed at the two values: low (10 percent, light blue bars) and high (80 percent, dark blue bars). Other continuous variables held at means and binary variables held at median values. Model 1 does not include interaction terms. Model 2 includes an interaction term for *Akan30* and *Intimidation*. Model 3 includes an interaction term for *Akan30* and *Careful*. Model 4 includes interaction terms for *Akan30* and *Intimidation*, as well as for *Akan30* and *Careful*. In addition, all models include the following controls: indicators for major ethnic groups in Ghana (Akans, Ewe, Dagomba), gender, perception of the economy, poverty, local level of development and indicators for a central region and for urban and rural areas. Standard errors obtained via the delta method and clustered by enumeration area in parentheses.

careful in political speech living in an area with a high share of Akans increases the probability of supporting the NPP by almost 40 percentage points.

We also test whether the effects differ in rural and urban areas. Tables A3–A10 in the Appendix show the results. We find that conditional on the respondents’ fearing political intimidation, the percentage of Akans in the 30 km radius and in the 5 km radius has a statistically significant impact on vote choice both in rural and in urban areas. Conditional on the respondents believing that they have to be careful in expressing opinions about politics, the percentage of Akans in the 30 km radius and in the 5 km radius has a statistically significant impact on vote choice in rural but not in urban areas. Conditional on the respondents both fearing political intimidation and believing that they have to be careful in political expression, we similarly find that the percentage of Akans in the 30 km radius and in the 5 km radius has a statistically significant impact on vote choice in rural but not in urban areas.

To test whether the mechanism we explore operates through the influence of Akans on non-Akan respondents, we split the sample into non-Akan and Akan respondents and repeat the analysis separately for each of the two samples. Tables A11–A14 in the Appendix show the results. We find that the interaction of political intimidation and the percentage of Akans in the 30 km radius has a statistically significant impact on vote choice only for non-Akan respondents. We also find that conditional on the respondent believing that one has to be careful in political

expression and fearing political intimidation, the percentage of Akans in the 30 km radius has a statistically significant impact on vote choice for both Akan and non-Akan respondents.

6. The lack of the impact of local public goods provision

Theoretically, the existing literature suggests that the public goods provision mechanism is unlikely to explain the relationship found in the data. This is because the feasibility of promises of public goods provision as an electoral strategy is contingent on a history of credible commitments by political parties, something that is unlikely to be satisfied in a country such as Ghana, which has only relatively recently become democratic (for a similar argument see Bratton 2008, Keefer and Vlaicu 2008).

Empirically, in this section we provide evidence showing that the effect of the percentage of Akans in a neighborhood does not operate through local public goods provision, as captured in the Afrobarometer questions. In principle, it is possible that the Afrobarometer questions do not capture local public goods provision with sufficient accuracy. It is also possible that voters care about local public goods which are different from those used in the Afrobarometer questions. Finally, it is possible that voters expect that the winning party will provide local public goods in the areas where its coethnics are in the majority, but the party does not in fact do this so that the voters are wrong in their expectations.

We attempt to allay these concerns through a variety of robustness checks. To show that our findings do not rely on the use of the Afrobarometer data set, in Section A1.3 in the Appendix we repeat the analysis using questions from 2008 Ghana DHS. To show that our findings do not rely on the use of levels of public goods provision, in Section 6.2 we show that the dynamics of local public goods provision do not explain the impact of the neighborhood composition on the vote choice. To address the possibility that expectations of public goods provision matter, in Section A1.4 in the Appendix we repeat the analysis using questions from Afrobarometer that may serve as proxies for the expectations.

In spite of our robustness checks, it is still possible that local public goods provision impacts ethnic voting. However, to the extent that the results about the lack of impact of public goods provision might be viewed as more convincing than the results about the lack of impact of expectations of public goods provision, our analysis shows that, if public goods provision matters for the ethnic voting, it is likely to matter through the *incorrect* expectations of the voters. If we expect voters to learn over time, so that in equilibrium they correctly anticipate that public goods will not be provided, then this implies that the impact of the expectations of public goods provision is likely to be only short-term.

6.1 The presence of local public goods

We focus on three local public goods: paved roads, schools, and health clinics. These goods are geographically targetable and locally non-excludable and thus might, in principle, mediate the impact of the percentage of Akans in a neighborhood on the vote choice.

We use the following three questions from the Afrobarometer to measure the level of local public goods provision within an enumeration area:

- (1) “Thinking of your journey here: was the road at the start point in the primary sampling unit/enumeration area paved/ tarred/ concrete?”
- (2) “Are the following facilities present in the primary sampling unit/enumeration area, or within easy walking distance: School?”
- (3) “Are the following facilities present in the primary sampling unit/enumeration area, or within easy walking distance: Health clinic?”

We assign the value of 1 to the variable *Road/School/Health clinic* if the answer is “Yes” and the value of 0 if the answer is “No.”

We first analyze the impact of the presence of local public goods and being surrounded by Akans on the intention to vote for the NPP.¹³ Tables A15–A26 in the Appendix show the results for roads, schools and health clinics. In each of the tables, models (1) and (2) use the percentage of Akans in the 30 km radius, while models (3) and (4) use the percentage of Akans in the 5 km radius. Models (1) and (3) include the variable for the local public good and the interaction of this local public good with the percentage of Akans in the neighborhood. Models (2) and (4) also include the variable *Careful* and the interaction of *Careful* with the percentage of Akans in the neighborhood (Tables A15, A19, and A23), the variable *Intimidation* and the interaction of *Intimidation* with the percentage of Akans in the neighborhood (Tables A16, A20, and A24), both of these variables and interactions (Tables A17, A21, and A25), and, finally, a three-way interaction of these variables (with all the lower interactions and constituent terms included, Tables A18, A22, and A26).¹⁴

Neither the presence of local public goods nor the interaction of the local public goods with the percentage of Akans in the neighborhood has a statistically significant effect on the intention to vote for the NPP candidate in any of the specifications in Tables A15–A26. In contrast, the result that the fear of political intimidation and the belief that one has to be careful in political expression mediate the effect of the percentage of Akans in the neighborhood is robust: in all specifications, the percentage of Akans in the neighborhood has a statistically significant effect on the intention to vote for the NPP candidate when the respondents fear political intimidation and believe that one has to be careful of what one says about politics. Figure 2 summarizes the results by plotting the marginal effect of *Akan30* on the intention to vote for the NPP candidate when a local public good is present and when it is not.

In light of the finding that local public goods do not affect vote choice directly and do not mediate the effect of the percentage of Akans in the neighborhood, we estimate a model testing whether the percentage of Akans affects local public goods provision. If non-Akan voters in Akan-majority areas vote for the NPP due to the higher likelihood of receiving public goods from the NPP, then NPP-affiliated politicians should be more likely to provide local public goods in these areas. Because the variable for the provision of local public goods does not vary by the respondent and instead varies by the enumeration area, we collapse the data to the means by enumeration area. Table A27 in the Appendix shows the results. Models (1), (3), and (5) use the percentage of Akans in the 30 km radius, while models (2), (4) and (6) use the percentage of Akans in the 5 km radius. We see that the percentage of Akans in the neighborhood has no statistically significant impact on local public goods provision.

6.2 Dynamics of local public good provision

Alternatively, the impact of the percentage of Akans in a neighborhood may affect the dynamics of local public good provision and not the levels. It is possible that the longer the NPP is in power, the more local public goods areas with a high share of Akans receive. It is also possible that the NPP provides local public goods to the areas where there is more need for such goods, so that, if we were to just compare the levels of local public goods, we would mistakenly conclude that the NPP is less likely to provide such goods to the areas surrounded by Akans. To explore this

¹³If being surrounded by Akans impacts vote choice through local public goods provision, then districts with high proportions of Akans that had also received local public goods when the NPP controlled the presidency in 2000–08 should be most likely to vote for the NPP. While it is a possibility that the local public goods recorded in the survey had been provided by the NDC before 2000, this concern is alleviated insofar as the NDC is hypothesized to have little incentive to provide local public goods to Akan-majority districts. To further alleviate this concern, we analyze the dynamics of local public goods provision in Section 6.2.

¹⁴We treat intimidation as a continuous variable in Tables A3–A26. This means that a unit change in intimidation has a constant impact on the latent propensity of voting for the NPP. As a robustness check, we allow the effect of intimidation to differ by intimidation levels. Tables A36 and A37 present the main results from Tables A3–A26, treating each level of intimidation as a different category. Our results are robust in this change in specification.

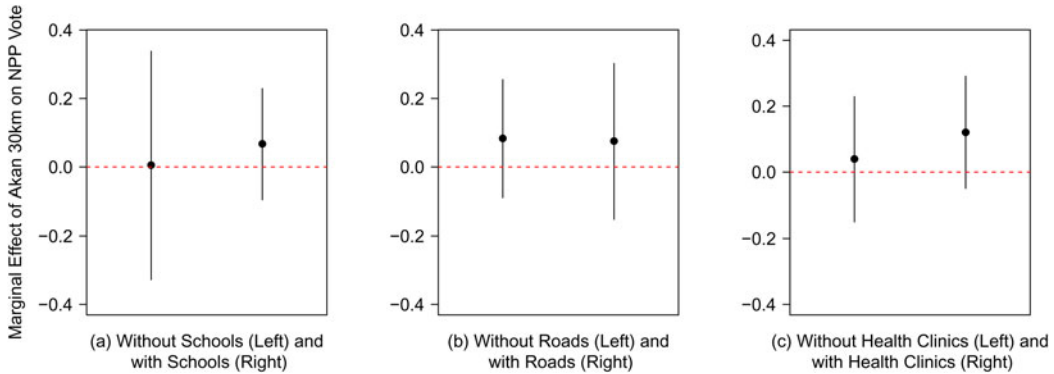


Figure 2. The impact of percent Akan in the 30 km radius on the intention to vote for the NPP without and with local public goods. The figures show the coefficients and the corresponding confidence intervals. The coefficients are marginal effects with continuous variables held at means and binary variables held at median values.

possibility, we estimate the effect of the share of Akans in a neighborhood on the changes in local public goods provision between 2005 and 2008, using the data from round 3 (2005) and round 4 (2008) of the Afrobarometer. In order to obtain measures of local public goods provision in the same areas at two points in time, we geocoded and then matched the enumeration areas included in rounds 3 and 4 of the Afrobarometer by their geographical proximity. Once paired, we compared the changes in our three measures of local public provision.¹⁵ Since in many instances the enumeration areas differ between the rounds, we selected only those enumeration areas in round 3 that are <20 km away from the ones included in round 4. In doing so, we are treating the presence of public goods in a matched enumeration area from round 3 as a proxy for the presence of public goods in 2005 for those enumeration areas included in round 4.¹⁶

As a result, we can compare the provision of local public goods at two points in time, that is, we can compare those enumerations areas that did not receive a local public good in either 2005 or 2008 to those which received it either in 2008 or both in 2005 and 2008.¹⁷ Since round 4 was conducted before the 2008 election where the NPP lost, the NPP is in power in both periods included in the data set. If the impact of local ethnic geography is due to public goods provision, then we should see a positive impact on the share of Akans in a neighborhood: that is, the longer the NPP is in power, the more local public goods should be provided to the areas surrounded by Akans. Table A29 shows that the impact of the percentage of Akans does not explain changes in local public goods provision. The coefficient is only significant for *Roads*, but its sign (negative) goes in the direction not consistent with the public goods explanation.

As a result, we can compare the provision of local public goods at two points in time, that is, we can compare those enumerations areas that did not receive a local public good in either 2005 or 2008 to those which received it either in 2005 and/or 2008.¹⁸ Since round 4 was conducted

¹⁵The geocoded references for round 3 at the enumeration area level were generously provided by Omar García-Ponce and Leonard Wantchekon.

¹⁶As a robustness check, in Table A30 we present the results using different distances (5, 10, and 15 km) to match the enumeration areas. Our results are robust in using different distances. (There is no variation in *School* when we use distances <20 km, so we present the results for *Road* and *Health clinic* only.)

¹⁷The dependent variable takes a value of 1 if a local public good was present in the enumeration area in either 2008 or both 2005 and 2008; it takes a value of 0 if a local public good was present in the enumeration area neither in 2005 nor 2008. Our results are robust in treating the dependent variable as having three categories (receiving the public good in neither period, only in 2008 and both in 2005 and 2008) and estimating an ordered logit (the results are available from the authors upon request).

¹⁸The dependent variable takes a value of 1 if a local public good was present in the enumeration area in either 2008 or both 2005 and 2008; it takes a value of 0 if a local public good was present in the enumeration area neither in 2005 nor 2008.

before the 2008 election where the NPP lost, the NPP is in power in both periods included in the data set. If the impact of local ethnic geography is due to public goods provision, then we should see a positive impact on the share of Akans in a neighborhood: that is, the longer the NPP is in power, the more local public goods should be provided to the areas surrounded by Akans. Table A29 shows that the impact of the percentage of Akans does not explain changes in local public goods provision. The coefficient is only significant for *Roads*, but its sign (negative) goes in the direction not consistent with the public goods explanation.

7. Conclusion

While previous literature showed that neighborhood composition can impact ethnic voting, it did not provide empirical evidence for the mechanism through which this happens. We have provided evidence that there is an association between reported feelings of intimidation and voting for the majority ethnic group's party. Moreover, we have shown that data does not support local public goods provision as an alternative explanation. The findings advance our understanding of both ethnic voting and the role of intimidation in elections in developing countries. Our findings imply that an instrumental motive for ethnic voting—the desire to avoid political intimidation—is present in the voting behavior in Ghana. Our results do not rule out that this instrumental motive co-exists with an expressive motive, yet voters who would like to vote along ethnic lines for expressive reasons may nevertheless refrain from doing so due to political intimidation. Our findings may seem surprising for a country like Ghana, which is considered one of the most stable democracies in Sub-Saharan Africa. We conjecture that had Ghana not experienced such marked improvements in democracy and the rule of law, the effect that we find would have been larger. As such, one can think of the effect found for Ghana as a lower bound. Because of this, we would expect the effect for countries like Kenya and Nigeria, which have suffered from more severe episodes of electoral violence, to be larger. It is thus likely that the extent to which neighborhood composition affects vote choice depends on the political environment that allows for or inhibits the influence of the majority ethnic groups on the minorities.

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