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The Employment Effects of Ethnic Politics

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The Employment Effects of Ethnic Politics[*]

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Abstract

This paper studies the labor market consequences of ethnic politics in African democracies. Using data from 15 countries, 32 elections, and more than 400,000 individuals, we implement a regression discontinuity design that compares individuals from ethnicities connected to parties at the margin of electing a local representative in the national parliament. Having a local ethnic party politician in parliament increases the likelihood of being employed by 2-3 pp. The available evidence supports the hypothesis that this effect results from strategic interactions between politicians and traditional leaders, the latter being empowered to allocate land and agricultural jobs in exchange for votes.

Keywords: Ethnic politics, employment, democracy, traditional leaders, Africa.
JEL Codes: J15, J70, O10, P26, Q15.

1 Introduction

More than half of Africa's population lives under the influence of traditional ethnic authorities (Michalopoulos and Papaioannou 2015). Recent studies show that contemporary economic differences between ethnic groups are related to the strength of ethnic institutions (Gennaioli and Rainer 2007; Michalopoulos and Papaioannou 2013), and that ethnic inequality is a strong correlate of underdevelopment in Africa (Alesina, Michalopoulos, and Papaioannou 2015). The prominent role of ethnic institutions on the continent is reinforced by the weakness of state institutions. Severe lack of infrastructural power (Mann 1986, 1993) undermines the capacity of the state to implement decisions throughout its territory and have control of rural areas (Herbst 2000; Michalopoulos and Papaioannou 2014), where traditional leaders continue to assert their authority over land allocation, tenure and redistribution (Economic Commission Africa 2007). In African democracies, state actors and politicians interact strategically with ethnic chiefs, forming the basis of ethnic politics. What are the economic consequences of these strategic interactions?

This paper studies the labor market effects of ethnic politics and its impact on the allocation of resources, namely labor, among individuals, ethnic groups and economic sectors. We build a unique, comprehensive dataset that combines geo-referenced data on parliamentary elections at the constituency level with information on individuals across sub-Saharan Africa from the Demographic and Health Survey (DHS). Our analysis leverages data across 15 countries, 32 parliamentary elections, 62 political parties, 243 ethnic groups, more than 2,200 electoral constituencies and 400,000 individuals. We identify links between ethnic groups and political parties in each country exploiting the information on political affiliation and vote intention available in the Afrobarometer.

We use these data to test whether the labor market outcome of individuals belonging to different ethnic groups changes with electoral results. More precisely, we compare individuals from ethnicities linked to political parties which do or do not gain a local representative in the national assembly. We focus on those groups and parties whose vote shares at the constituency level put them at the margin of gaining a local representative in parliament. That is, we adopt a *regression discontinuity design* that compares individuals from ethnicities linked to political parties that gain a local representative or

not by a narrow vote margin. We find evidence that electoral results shape labor market outcomes differentially according to ethnicity. Individuals connected to ethnic party politicians in parliament are 2 to 3 percentage points more likely to be employed, a 3.5 to 5.4% increase over the mean left of the election-winning threshold. This positive effect is stronger when the party the elected politician belongs to supports the central government.

We then turn to investigating the mechanism that is responsible for these employment effects. We focus on the interactions between formally appointed political leaders and traditional ethnic power structures. We argue that these two levels of governance interact in a strategic way. Political parties recruit traditional leaders as political brokers to mobilize the individuals under their authority for political support and voting (Baldwin 2014, 2015; de Kadt and Larreguy 2018). Upon elections, politicians reward traditional leaders by empowering them, acknowledging their authority, and allowing them to retain *de facto* powers, first and foremost the one to allocate agricultural land. As a result, when gaining a local representative in parliament, co-ethnics enjoy a competitive advantage in the agricultural land and labor market.[1] This explains the positive employment effect of being linked to the winning party.

A number of quantitative and qualitative results support this hypothesis. First, we find that the employment effect is concentrated in constituencies located in the historical homelands of ethnicities with strong, more centralized pre-colonial institutions, where traditional leaders have higher capacity to mobilize voters. Second, we find that the employment effect is exclusive to the agricultural sector. Evidence shows no increased employment in manufacturing or services, or in the public sector. This is consistent, on the one hand, with preferential land access being the relevant channel and, on the other hand, with the lack of state capacity and infrastructure needed to sustain more direct and conventional forms of patronage (Colonnelli, Prem, and Teso 2018). Third, the effect is stronger in those countries where the authority of traditional leaders is not recognized *de jure*, a necessary condition for the politician's promise of *de facto* empowerment to have scope and leverage. Finally, evidence from Afrobarometer survey data shows that

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[1]Evidence from developed and democratic countries shows that firms connected to politicians enjoy a certain degree of competitive advantage (Goldman, Rocholl, and So 2013; Cingano and Pinotti 2013). The same is true for individuals on the labor market (Gagliarducci and Manacorda 2017).

electoral outcomes shape individuals' assessment of the role of traditional leaders. Individuals from ethnicities connected to parties that gain a local representative by a narrow margin are systematically more likely to identify the traditional leader as partisan, and and as being mainly responsible for allocating land.

Our paper builds upon and contributes to several strands of the literature. First, it speaks to the literature on ethnic politics and voting (Francois, Rainer, and Trebbi 2015; Posner 2005). Eifert, Miguel, and Posner (2010) find evidence that political competition reinforces ethnic identification. Acemoglu, Reed, and Robinson (2014) and Baldwin (2014) show, for Sierra Leone and Zambia respectively, how local chiefs trade their ability to mobilize local communities in exchange for public good provision from the national government. We contribute to this literature by focusing on the allocative consequences of ethnic politics in African democracies and its impact on the labor market. We provide causal evidence on cross-national scale using local level electoral results from 15 different countries. We also explore further the interaction between political parties and ethnic chiefs. In doing this, we speak to the literature on electoral clientelism (Wantchekon 2003; Stokes, Dunning, Nazareno, and Brusco 2013; Robinson and Verdier 2013).[2] Clientelism emerges in equilibrium if both politician and voters can commit to their promises.[3] Reciprocity (Finan and Schechter 2012) and social (ethnic) networks (Robinson and Verdier 2013; Young and Turner 1985) facilitate clientelism. Ethnic chiefs can solve the commitment problem by holding both politicians and voters accountable (Mamdani 1996). de Kadt and Larreguy (2018) document the importance and effectiveness of traditional leaders in the former Bantustans of South Africa in increasing the electoral support of the ANC. While our analysis builds on the role of traditional leaders as "vote brokers," we highlight the allocative consequences of ethnic mobilization.

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[2]See also Larreguy, Marshall, and Querubin (2016) and Fergusson, Larreguy, and Riaño (2018) studying the emergence of clientelism and its implications in Mexico. More recently, Fergusson, Molina, and Robinson (2020) investigate the interconnection between state weakness and clientelism in the Colombian setting and present evidence of a deeply entrenched and self-reinforcing relationship between the two.

[3]Stokes (2007) eloquently summarizes the two-sided commitment problem leading to the emergence of clientelism: "*A voter who receives a bag of food with the understanding (implicit or explicit) that she will return the favor with a vote can easily renege on the deal on election day, especially when she is protected by the secret ballot.*" At the same time, "*a party that before an election promises patronage in exchange for votes may well forget its promise afterwards.*"

Our results also speak to the literature on ethnic favoritism. This occurs if a disproportionate amount of benefits accrue to individuals who share the same ethnicity of the individual or groups who hold political power.[4] Several studies show evidence of ethnic favoritism in the provision of public goods such as roads, schools, and hospitals (Franck and Rainer 2012; Kramon and Posner 2014). Burgess, Jedwab, Miguel, Morjaria, and Padró i Miquel (2015) show that expenditure on roads and the length of paved roads built are twice and five times higher respectively in those Kenyan districts that share the ethnicity of the president as compared to other districts. In line with the theoretical predictions of Lizzeri and Persico (2004), they do not find evidence of ethnic pork-barrel when democratic transitions occur.[5]

Our contribution to this body of research is twofold. First, we show that, in African democracies, favoritism of co-ethnics can still take place through preferential access to land and agricultural jobs. To the best our knowledge, ours is the first paper to present evidence on these issues at the individual level, which is crucial to unpack mechanisms that involve private goods. Our analysis and results are thus complementary to the existing literature on ethnic favoritism and its traditional focus on public good provision. Second, we highlight the role of strategic interactions between politicians and traditional leaders as a root mechanism, and provide evidence consistent with this hypothesis.

The findings in this paper also speak to the literature on patronage politics for presidential runs and ministerial posts (Wantchekon 2003; Posner 2005; Burgess, Jedwab, Miguel, Morjaria, and Padró i Miquel 2015; Francois, Rainer, and Trebbi 2015). We complement this literature by showing that, above and beyond the executive pork-barrel, members of parliaments are pivotal players for the allocation of resources in their electoral constituencies. Our findings challenge the view that national legislatures are rela-

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[4]Alesina, Michalopoulos, and Papaioannou (2015) stress that ethnic inequality may lead to political inequality along ethnic lines, creating discriminatory policies in one group that are directed towards another ethnic enclave.

[5]Using data from 130 countries and nighttime lights as a proxy for economic wellbeing, Mueller and Tapsoba (2016) confirm this finding while also quantifying the intensive margin of the relationship between access to power and ethnic favoritism. In contrast, De Luca, Hodler, Raschky, and Valsecchi (2018) find that nighttime light becomes differentially more intense in the political leaders' ethnic homelands, and even more so around election time. Finally, Dickens (2018) exploits within-group variation across split ethnic groups in Africa to show that ethnic favoritism occurs more along territorial lines than at the individual level.

tively less salient for patronage politics in Africa.

Finally, our paper is linked to the empirical literature on African state capacity. The inability to project power from the centre to the periphery and rural areas is key in the challenge to improve state capacity in Africa (Herbst 2000).Michalopoulos and Papaioannou (2014) find evidence that state capacity is negatively correlated with distance from the capital. At the same time, there is a growing appreciation of the role of ethnic chiefs for the functioning of local economies in rural Africa (Michalopoulos and Papaioannou 2015; Acemoglu, Reed, and Robinson 2014). Our contribution to these literatures is to shed light on the relationship between national state institutions and local co-ethnic chiefs. As democratization takes place in several African countries and national level institutions improve, would one expect the role of local chiefs to weaken or strengthen? The prevailing view is that the strength of these local ethnic-specific actors is a legacy of past institutional weaknesses of African countries. In this respect, improvements in institutions should make local chiefs irrelevant. In contrast, our findings suggest that the role of local chiefs and their authority in resource allocation can be enhanced by multi-party politics (Eggen 2011).

The remainder of the paper is organized as follows. Section 2 provides information on data sources and how we build our final dataset. Section 3 describes our main empirical and estimation strategy while Section 4 presents the first set of results. Section 5 focuses on the strategic interactions between politicians and ethnic leaders as a mechanism, and provides the corresponding evidence. Section 6 concludes.

2   Data

Elections   We assembled our final dataset by combining and harmonizing several different sources. The first piece of information pertains to electoral results. We started our data collection by accessing the Constituency-Level Election Archive (CLEA) (Kollman, Allen, Caramani, Backer, and Lublin 2018). This is a repository of detailed election results at the constituency level for lower chamber and upper chamber legislative elections from around the world. We first restricted the sample to all sub-Saharan African countries. In our analysis, we exploit variation in the political affiliation of local representatives in the national parliament. We thus consider only those electoral

systems where electoral results at the constituency level map directly into representation in the national assembly. For instance, we consider single-member plurality district voting, where one representative is elected in each constituency, and the candidate achieving the relative majority of votes is elected. We also consider proportional systems that allocate a given number of seats in each constituency based on vote shares within the constituency. By contrast, we exclude pure proportional systems where the nationwide allocation of seats to parties is determined by vote shares at the country level, and constituencies only serve logistical and vote counting purposes. We also further restrict the sample to those countries and years for which, as we explain later, we can retrieve information from other sources on the ethnic connotation of parties and individual employment following the election year.

To increase coverage, we collected, processed, and validated information from additional sources. We used data from Elections in Africa (Nohlen, Bernard, and Krennerich 1999) to complement information on Ghanaian and Liberian parliamentary elections. We relied on Carr (2017) to retrieve information for the following countries: Burkina Faso, Kenya, Mali, and Nigeria. We obtained additional electoral constituency-level data from National Electoral Commissions (Burkina Faso) and the European Commission (Kenya). We also collected information on each party's support for the central government in the aftermath of the elections. We retrieve this data from the Inter-Parliamentary Union (2018), the world organization of parliaments. Whenever missing, we derived this information from a handful of other sources including the Freedom House and Wikipedia.

An innovation of our empirical analysis is the spatial mapping of individual-level observations into electoral constituencies, which allows us to investigate the relationship between electoral results and individual outcomes. The paucity of digitized maps of electoral constituencies for the countries in our analysis makes this a daunting task. We pursued two strategies to overcome this data limitation. First, we collected and harmonized shapefiles of sub-national administrative divisions to match them with the electoral boundaries. To check for potential inconsistency we cross-checked those maps with both encyclopaedic sources and archival maps from both the British Library and the US Library of Congress (e.g. Ghana and Kenya). Second, when no shapefile existed, we retrieved and digitized ourselves the relevant electoral maps from several sources in-

cluding Population Census publications (e.g. Uganda) and Electoral Commission's reports (Liberia, Malawi, and Sierra Leone). All the relevant sources and steps are listed in the Supplementary Appendix **??**.

The first column of Table A.1 in the Online Appendix shows the set of countries and election years for which geo-referenced information on election constituencies is available and are thus included in our final election dataset. The second column shows the total number of constituency-level observations available for each country across the different election years. Our final election dataset contains information on election results for 4,721 constituency-level observations across 32 elections in 15 sub-Saharan African countries. For each constituency and election year, the data provide information on each political party running in the constituency and the corresponding number of votes. We can thus calculate the vote share of each party, and, knowing the electoral rule, whether any candidate from that party and constituency was ultimately elected to the national assembly.

Ethnic Parties   A key component of our analysis is the identification of links between ethnic groups and political parties in each country. We do so using information on the political affiliation of individuals belonging to different ethnic groups. We retrieve this information from Afrobarometer, a research network that conducts public attitude surveys on democracy, governance, economic conditions, and related issues in Africa (Afrobarometer 2015).[6]

Identifying links between ethnic groups and political parties involves several steps. First, we harmonize ethnic group names in Afrobarometer with those in the Demographic Health Survey, our source of information for individual outcomes. Second, we harmonize party names in Afrobarometer with those in our election dataset. Third, we attach a party "label" to each ethnic group based on a quantitative criterion. Specifically, let N and N_p be respectively the total number of individuals in a given country, and the number of voters for party p in that country. Let instead N_e and N_e^p denote respectively the total number of individuals from ethnic group e and the number of voters for party p among them.[7] Our baseline measure aims at capturing over-representation of particular

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[6]We use all waves (1-6) available at the time of writing.

[7]As explained in detail in Section B.2, we identify party voters using survey questions on political affiliation. In Afrobarometer waves 1-2, respondents are asked "Do you feel close to any particular

ethnic groups among the voters of a given party. That is, we compute for each ethnic group and country a measure

$$\hat{p}^e = \arg\max_p \left[\frac{N_e^p}{N_e} - \frac{N_p}{N} \right] \tag{1}$$

and we assign party label "p" to ethnic group "e" if party p is (the most) over-represented, relative to its overall vote share in the country, among voters from ethnic group e. Section B.2 of the Supplementary Appendix provides further details on the labelling algorithm. To further validate the algorithm, we use the qualitative information contained from a variety of external sources from which we derived qualitative information. Section B.3 of the Supplementary Appendix provides the corresponding details.

Notice that the links we establish between ethnic groups and political parties are country-specific and time-invariant. Our empirical strategy will exploit variation in the vote share of political parties across constituencies, and, in our preferred specification, within countries and years. Measurement error in the identification of ethnic parties should therefore have no bite on our estimates and yield no systematic bias.

Employment and Other Individual Characteristics   We gather individual-level information on labor market outcomes and sociodemographic characteristics from the Demographic and Health Survey (DHS) (ICF 2017). These are nationally representative household-level surveys that are carried out in developing countries around the world. We consider those sub-Saharan African countries and waves for which geocoded data are available, so that they can be matched according to geography and time to electoral constituencies and election results from the most recent elections. The geographic information available in the DHS corresponds to the geographical coordinates of each DHS cluster (group of villages or urban neighborhoods) in the sample. We discuss the final DHS sample we use and its characteristics in Section 3.

DHS data provide information on the employment status and occupation of respondents. The survey asks whether the respondent is currently working, and provides harmonized information on occupations from which we can derive employment statistics

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party?" "If yes, which party?" In waves 3 to 6, they are additionally asked "If the election were held tomorrow, which party would you vote for?" We use the direct voting question where available and use the closeness to party only where the answer to the direct voting question is not available.

across sectors. We map occupations into sectors following McMillan and Harttgen (2014), who use DHS employment data to study structural change in Africa. We also use the most detailed information on occupation to identify public sector workers, the vast majority of them being in the education and health sector.

Using DHS data to measure labor market outcomes has both pros and cons. On the one hand, the scale of the DHS project is uniquely suitable to fit the scope of our analysis. The information is harmonized and comparable across countries and survey rounds, a necessary condition for implementing our empirical strategy. On the other hand, though, the survey is primarily designed to gather information on population and health, focusing mostly on women. Measurement of labor market status and employment by sector can be prone to error. This is particularly the case in sub-Saharan Africa where many individuals are engaged in multiple economic activities, either at once or across seasons in the same year. Notice however that this is not necessarily a threat to the validity of our analysis and interpretation of results. Our identification strategy compares individuals from ethnicities linked to political parties that gain a local representative or not by a narrow vote margin. Measurement error in the labor market outcomes of interest is problematic only insofar as it changes systematically and discontinuously across and within ethnic groups at the relevant election-winning threshold. There is no reason to believe that this is the case.

We address the measurement concern directly by contrasting the information on employment by sector in the DHS with the one available from census data. These belong to the Integrated Public Use Microdata Series (IPUMS) International (Minnesota Population Center 2017), which provides a harmonized version of population censuses and surveys from national statistical agencies. We calculate the share of employment in each of the three main sectors – agriculture, manufacturing, and services – at the level of administrative subdivisions or regions within countries. Although these regions do not coincide with and are typically larger than electoral constituencies, individual-level DHS observations can also in this case be mapped and matched accordingly. We relate employment shares by sector and gender calculated from DHS data with those obtained from IPUMS census data across regions for those countries in our sample for which IPUMS data are available.[8] In doing so, we consider those DHS survey years that are

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[8] We are thus able to do so for Benin, Cameroon, Ghana, Liberia, Mozambique, Malawi, Nigeria,

closest in time to census years. Figure A.1 shows that the employment shares in the two datasets align closely, providing support for the reliability and validity of the employment information in the DHS.

Importantly, DHS data also report the ethnic group to which each individual belongs. By harmonizing the ethnic classification in the DHS with the one in Afrobarometer, we can match individuals in the DHS sample to political parties based on the linking procedure described in the previous section. Throughout the empirical analysis, we also use information on other individual socioeconomic characteristics available in the DHS such as gender and education.

Ethnic Institutions   We retrieve information on pre-colonial ethnic institutions using the "Jurisdictional Hierarchy beyond the Local Community" index (Gennaioli and Rainer 2007; Michalopoulos and Papaioannou 2013). This variable, which is available for 534 African ethnic groups from the Ethnographic Atlas (Murdock 1967), identifies the jurisdictional structure above the local community level for each ethnicity. In other words, this index measures the degree of political centralization of pre-colonial societies. The degree of political centralization ranges from zero to four. A zero scores indicates stateless societies lacking any form of political authority beyond the local; one refers to petty chiefdoms; a score of two identifies paramount chiefdoms; and three and four are the scores assigned to ethnic groups characterized by pre-modern states as political organization. We attach this information to each electoral constituency in our dataset by matching geographically the constituency centroid to historical ethnic homelands in the Murdock map (Michalopoulos and Papaioannou 2013, 2014). We therefore assign to each constituency the level of pre-colonial centralization of the ethnic group that is historically dominant in the area.

The richness of Afrobarometer allows us to also recover information on the role of traditional leader within countries, and establish a relationship with electoral outcomes. In order to do so, we use a confidential geo-referenced version of Afrobarometer. The questionnaire administered in 2008 – the fourth wave of the survey – includes questions on traditional leaders such as whether they should be partisan, whether they are responsible for allocating land, maintaining law and order, or governing the community

Sierra Leone and Zambia.

([Michalopoulos and Papaioannou 2015](#)). We use the answers to these questions in the exploration of the mechanisms behind the baseline results. In doing this, we are forced to restrict our sample to a subset of 8 out of the 15 countries that comprise our main dataset.[9]

Recognition of Traditional Leaders We also exploit heterogeneity across countries in the extent to which traditional chiefs are officially recognized, meaning whether their authority is recognized *de jure* by the national legislation. We retrieve this information from a variety of sources, first and foremost the Constitution of the countries in our sample. In order to be as conservative as possible, we classify countries based on whether there is any mention of traditional leaders in the Constitution. Section B.4 of the Supplementary Appendix provides the details of such classification and information on the relevant sources.

Village Characteristics We use the geographical information in DHS data to derive a number of characteristics at the cluster or village level. We do this by spatially matching DHS locations to other datasets. In particular, we use information on latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. In exploring the relevant mechanism, we also use information from satellite data on the share of land within a 1km radius from the village that is devoted to cropland, or mixed cropland and natural vegetation. We use this information as recorded in the year after elections take place. The Supplementary Appendix B.5 provides a detailed explanation of sources and variable definitions, and summary statistics at this level.

3 Empirical Strategy

Do electoral results shape individual outcomes according to ethnicity? To answer this question, we compare individuals from ethnicities linked to political parties which gain or do not gain a local representative in the national assembly. However, those eth-

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[9]We can retrieve information on the role of traditional leaders from the 2008 Afrobarometer for: Burkina Faso, Ghana, Kenya, Liberia, Malawi, Nigeria, Senegal, and Zambia.

nicities and parties that gain a representative may potentially be very different from those that do not along a number of observable and unobservable dimensions which may themselves be related to individual outcomes. This undermines a causal interpretation of a simple comparison across the two groups. To address this issue, we focus on those ethnic groups and political parties that are at the margin of gaining a local representative in parliament. We implement a regression discontinuity design (Imbens and Lemieux 2008; Lee and Lemieux 2009a) and compare individuals from ethnicities linked to political parties that are within a narrow vote margin of gaining or not gaining a representative. The key identification assumption is that average individual characteristics do not change discontinuously at the vote threshold that is relevant for the linked party to gain a local representative.

Let c_{dnt} be the relevant vote share threshold to gain a local representative in constituency d of country n in the the elections prior and closest to year t. Let instead X_{ednt} be the vote share of the party linked to ethnicity e in the constituency. Let D_{ednt} be the treatment dummy, equal to one if the party gained a local representative in the constituency, i.e. $D_{ednt} = \mathbb{1}(X_{ednt} \geq c_{dnt})$. Consider the following local linear regression specification

$$
\begin{aligned}
y_{iednt} = \alpha + \beta \, D_{ednt} + \gamma \, (1 - D_{ednt}) \times (X_{ednt} - c_{dnt}) + \\
+ \, \delta \, D_{ednt} \times (X_{ednt} - c_{dnt}) + u_{iednt}
\end{aligned}
\tag{2}
$$

where y_{iednt} is the outcome of individual i from ethnicity e surveyed in constituency d in country n and year t. $X_{ednt} - c_{dnt}$ is the adjusted vote share of the party linked to ethnicity e. The terms $\gamma \, (1 - D_{ednt}) \times (X_{ednt} - c_{dnt})$ and $\delta \, D_{ednt} \times (X_{ednt} - c_{dnt})$ capture any systematic linear change in individual outcome with the party vote share on the left and right side respectively of the relevant threshold. Our coefficient of interest is β, which captures a discontinuous change in the average of individual outcomes associated with gaining a local representative in the national assembly.

To identify β, we exploit variation in the vote share of political parties across constituencies, countries and election years as well as variation in the links between ethnic groups and political parties across countries. We can thus saturate the specification in equation 2 with country $\times$ year fixed effects and exploit variation across ethnic groups

and political parties across constituencies within the same election round. This is important as our dataset pools together information from 32 elections across 15 countries thus carrying a large amount of variation that is likely not captured by our main explanatory variables. Our preferred specification also includes ethnicity fixed effects, thus netting out average differences across ethnic groups. Finally, note that for a subset of countries we have data on more than one election round. This means we can further evaluate the robustness of results by saturating equation 2 with the full set of constituency fixed effects or even ethnicity × constituency fixed effects, thus exploiting variation within constituencies and ethnic groups and political parties over time.

A necessary condition for implementing this specification is having a complete mapping from ethnicities to parties. Our estimation sample is therefore restricted to those DHS observations belonging to individuals from ethnic groups for which our linking procedure described in Section 2 identifies a link with a political party. The labelling algorithm links a party to the ethnic group that has the largest gap between the share of voters from that ethnic group for that party and the party's overall vote share in the country. Although highly unlikely, this gap could theoretically be zero for all parties. This would happen if the ethnic group in question voted exactly as the population average. More realistically, the gaps might be very small for many parties. We therefore impose a minimum cutoff on the size of the gap used to attribute links. Increasing the size of the cutoff means fewer false positives – erroneously labelling ethnic groups that happen to be over-represented only by a small margin among the voters of a party. There is a cost, however, in that the number of false negatives – failing to label ethnic groups that should be labelled – will increase. Failing to label an ethnic group also reduces the total number of observations, since we can only compute the running variable (see below) for ethnicities that are linked to a party. Our baseline estimates are obtained using a labeling cutoff of 0.01. Section B.1 of the Supplementary Appendix reports the results obtained when imposing a cutoff of 0.05, which are essentially unchanged.

The final dataset counts 409,604 individuals across 243 ethnic groups linked to 62 different political parties across 15 countries and 32 elections. Table A.3 in the Online Appendix shows the distribution of individual observations across countries and election years. It also reports the DHS survey years that we match to each election round.[10]

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[10]Panel A of Table A.2 in the Online Appendix shows the summary statistics all variables used in the

The third column of Table A.1 in the Online Appendix shows instead the number of constituency-year observations in the election dataset that we match with individual-level observations and are therefore relevant for our analysis, for a total number of 3,254.

3.1 Definition of the Running Variable

The vote share threshold c_{dnt} and the associated adjusted vote share $X_{ednt} - c_{dnt}$ is defined differently across constituencies and electoral systems. The vast majority of countries in our sample adopt a single-member plurality rule, where one representative – the one obtaining the relative majority of votes – is elected in each constituency. We can therefore define the adjusted vote share as follows. For the winning party, it is the difference between its vote share and that of the second party. For all other parties, it is defined as the difference between their vote shares and that of the winning party. In proportional systems in our sample, a given number of seats are assigned proportionally to vote shares within constituencies. The adjusted vote share is defined differently depending on whether the system follows the d'Hondt – such as Mozambique – or the Hare method – Benin, Burkina Faso – to allocate seats. The relevant threshold is the one associated with the last relevant quotient (d'Hondt) or the vote share of the last party gaining a representative (Hare).[11]

To better understand the variation that we exploit for identification, the last three columns of Table A.1 in the Online Appendix show the number of constituency-year observations in the election dataset for which we observe any party with a vote margin within 20%, 10%, and 5% respectively from the relevant vote margin threshold associated with gaining a representative in parliament. When considering a vote margin as narrow as 5%, we can still leverage variation in the variables of interest across 419 constituency-year observations. Yet, all our estimates consider an optimal bandwidth of around 20%, thus keeping a number of constituency-year observations as high as 1,456 in the estimation sample.[12] Figure A.2 in the Online Appendix depicts the spatial distri-

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empirical analysis.

[11]The Supplementary Appendix ?? provides information on the electoral systems of countries in our sample.

[12]Panels B and C of Table A.2 in the Online Appendix provide the summary statistics for the subsample of individual observations from ethnic groups linked to political parties within 20% of the vote margin

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bution of constituency-year observations that are included in our final sample. It does so separately for West Africa (a), East Africa (b), and Southern Africa (c). We highlighted in black those constituency-years where we observe two or more parties in our dataset with a vote margin of less than 20% percent from the relevant threshold for winning a seat in parliament. There is significant spatial variation both across and within countries. The average number of parties in contested constituency-year observations is 1.64 with a standard deviation of 0.7.[13]

3.2 Estimation

We estimate the coefficient of interest β from equation 2 using different methods. The first one is OLS $- \hat{\beta}_{OLS}$. This requires selecting the estimation bandwidth, which in turns defines the estimation sample. We also rely on the latest advances in regression discontinuity methods and implement the estimators proposed by Imbens and Kalyanaraman (2012) and Calonico, Cattaneo, and Titiunik (2014) $- \hat{\beta}_{IK}$ and $\hat{\beta}_{CCT}$, respectively. These are both local polynomial nonparametric estimators with data-driven bandwidth selectors and bias-correction techniques. We implement the bandwidth selector proposed by Calonico, Cattaneo, and Titiunik (2014) and implement all estimators including OLS using that bandwidth.

3.3 Balance Tests

The validity of regression discontinuity designs rests on the assumption of there being no manipulation of the running variable around the threshold. To support this assumption, we test for the null hypothesis of continuity of the density of the running variable. Figure A.3 in the Online Appendix shows graphically the distribution of the density function on both sides of the threshold, together with 95% confidence intervals. The p-value from a McCrary (2008) test of equality of the value of the density function on the left and right side of the threshold is equal to 0.4761, and equal to 0.4263 using the

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threshold that is relevant to elect a local representative to the national assembly, right and left of the threshold respectively.

[13]Notice that, in order to be part of our final sample, a party has to be linked with an ethnicity in the DHS. Therefore, the final dataset does not necessarily have information on all parties running in a given constituency.

more recent test developed by Cattaneo, Janssonz, and Ma (2018). We therefore cannot reject the hypothesis of no discontinuity in the density of the running variable at the relevant vote share threshold, which is suggestive of the absence of manipulation.[14]

We also test for any discontinuous change in the value of covariates at the threshold. We consider a wide range of both village-level and individual characteristics. Tables A.4 and A.5 in the Online Appendix report the estimated coefficient of interest that we obtain when estimating equation 2 which has as dependent variable these covariates. We report estimates we obtain using the three estimators discussed above. With the exception of a few OLS estimates, none of the estimated coefficients are statistically significant, which is what we expect if local randomization is effectively implemented at the relevant threshold. Figure A.5 in the Online Appendix provides a graphical representation of the data and the local linear regression fit, showing the absence of any meaningful discontinuities in the value of covariates at the threshold.

4 Results

4.1 Descriptive Evidence

Panel A of Table A.2 in the Online Appendix shows the summary statistics in the full sample of all the variables we use in the empirical analysis. Panels B and C of Table A.2 do the same for the subsample of individuals from ethnic groups linked to parties within 20% of the vote margin threshold that is relevant to elect a local representative to the national assembly, on the right and left of the threshold respectively. 58.7% of the individuals in the full sample report that they are working at the time of the DHS interview. Panels B and C indicate that the average probability of employment is 1.4 percentage points higher for individuals from ethnicities linked to parties that gain a representative compared to individuals linked to losing parties. The probability of working in the agricultural sector is 2.3 percentage points higher, while that of working in the manufacturing or service sectors is either lower or the same as the one of individuals linked to parties that do not gain a representative. The same is true for the probability

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[14]Figure A.4 in the Online Appendix shows graphically the distribution of the density function on both sides of the threshold together with 95% confidence intervals across different subsamples over which we later implement our main regression specification.

of reporting an occupation that is associated with the public sector, such as teachers or health professionals.

Panel D of Table A.2 shows the summary statistics in the sample that we derive from the 2008 Afrobarometer. On the one hand, only 1.1% of individuals on average believe that traditional leaders should be partisan in politics. On the other hand, the authority of local chiefs is widely recognized. 38% of respondents recognize the traditional leader as the main authority that is responsible for the allocation of land, and 57% believe the chief is responsible for governing the community.

Next, we provide some insights into the extent of political competition in the electoral constituencies in our sample and its correlates. To this end, we keep from our sample only those individual DHS observations that belong to the year that is closest in time to the one of elections. We derive ethnic diversity measures and summary statistics for the 2,293 unique electoral constituencies in our sample, and correlate them with measures of political competition. The mean of the number of parties running in a constituency is 4.72. Of these, an average of 1.19 parties achieve a vote share that is within a 20% vote margin of gaining a representative in parliament. We can use vote shares to derive a Herfindahl-type index of political competition. Its average value across constituencies is 0.41.

Table A.6 in the Online Appendix shows the coefficient estimates we obtain when regressing measures of political competition in the constituency over a number of district-level characteristics. We start by investigating the relationship between number of parties running in the constituency and ethnic diversity as measured by the *fractionalization* and *polarization* indices.[15] When included separately as the only regressor in columns 1 and 2, their coefficient is positive and significant. Yet, when we include the two of them together in column 3, only the coefficient of the fractionalization index retains its significance. This does not change when conditioning on the full set of country fixed effects in column 4. This indicates that the number of parties running for elections is higher in more ethnically fractionalized constituencies, where the number of ethnic groups is larger. In column 5, we add a set of variables that capture other economic and demographic characteristics of the electoral constituency. The number of parties is

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[15]See Montalvo and Reynal-Querol 2005 for an extensive discussion of the two indices and their relationship with the incidence of civil war.

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higher in more populated, more educated, and less rural constituencies. The share of individuals that are employed is positively correlated with the number of parties, although not significantly so. The share of individuals that report to be working in agriculture and services – including subsistence self-employment – is negatively and significantly correlated with the number of parties running for election. In column 6, we replace as dependent variable the Herfindahl-type index of political competition that we calculate using party vote shares. The index value is higher when vote shares are more concentrated, and political competition is lower. Coefficient signs are largely consistent with the ones obtained when looking at the raw number of running parties. In particular, ethnic fractionalization is significantly and positively correlated with political competition.

Before implementing the empirical strategy illustrated in the previous section, we present two examples that illustrate the kind of variation that we exploit for identification. The top maps in Figure 1 shows a cluster of constituencies in Sierra Leone where the Sierra Leone People's Party (SLPP) gained or did not gain a local representative in the national assembly in the 2007 elections. The left map reports the adjusted vote share of the SLPP across these constituencies. In 2007, the SLPP lost by a narrow margin in the two constituencies of Kakua and Panga Kabonde while winning in the other constituencies in the cluster with a vote margin of less than 20%. The right map reports the employment rate in 2008 of individuals belonging to the Mende ethnic group, which the labelling algorithm identifies as linked to the SLPP. The employment rate of Mendes is lowest in those constituencies where the SLPP lost.

The bottom maps in Figure 1 focus on the case of two Ghanaian constituencies and the electoral performance of the New Patriotic Party (NPP) across the two elections of 2004 and 2012. The left maps report the adjusted vote share of the NPP across these constituencies. The NPP gained a representative from both districts in 2004, but lost the one from Nkoranza in 2012. The right map reports the employment rate in 2008 and 2014 respectively of individuals belonging to the Akan ethnic group, which the labelling algorithm identifies as linked to the NPP. The employment rate of Akans decreases in the district that the NPP lost in 2012 while it increases in the district that the party retained. The analysis that follows aims to investigate these patterns in a systematic way.

4.2 Employment Effects

Table 1 shows the first set of coefficient estimates that we obtain by implementing the specification in equation 2. The dependent variable is a dummy equal to one if the individual is employed. For each specification, we report different estimates of β using the same optimal bandwidth (Calonico, Cattaneo, and Titiunik 2014). The bottom row reports the number of individual-level observations that are effectively used to produce these estimates, meaning those for which the vote margin of the associated party is within the selected bandwidth. Column 1 reports unconditional estimates of β. These range from 2 to 3.8 percentage points. Yet, none of them is statistically significant. Notice that our sample includes individuals from 15 countries over a period of around 20 years of the DHS. It therefore comes as no surprise that the variation in employment rates that is not explained by the included regressors is large, and so are the estimated standard errors. This can be clearly seen in the left graph of Figure 2, which groups observations in 20 bins left and right of the vote margin threshold and plots average employment probabilities per bin.

Column 2 of Table 1 reports the estimates that we obtain when exploiting variation within each country and year. Point estimates are remarkably similar to the one in column 1 and, with the exception of OLS, are now statistically significant at the 10% level. This is indeed what we would expect if our identification strategy is valid and local randomization is effectively implemented at the threshold: including the full set of country-year fixed effects does not change meaningfully the estimated coefficients, but decreases the amount of unexplained variation in the dependent variable thus decreasing standard errors.

In column 3, we net out average differences in employment rate across ethnicities. Once again, point estimates do not change in any meaningful way, but all of them except the OLS one are now significant at the 5% level. Results do not change meaningfully when including the full set of controls at the village and individual level in columns 4 and 5 respectively. In column 6, we implement our most demanding specification, which includes constituency fixed effects and therefore exploits variation within constituencies across individuals belonging to different ethnicities and over time. The magnitude of all estimates decreases, but they remain significant at the 5% level.

Overall, the results from Table 1 show that individuals from ethnic groups linked to parties that gain a local representative in parliament are 2 to 3 percentage points more likely to be employed compared to others. This represents a 3.5 to 5.4% increase over the average employment probability left of the threshold.[16]

Figure 2 provides a graphical representation of the discontinuity. The centre and right graphs show conditional probabilities obtained after netting out average differences across country-year pairs and ethnicities (centre) and also constituencies (right) respectively. The three graphs altogether show how the inclusion of fixed effects decreases the amount of unexplained variation while leaving the size of the discontinuity at the threshold essentially unchanged.[17]

4.3 Robustness

4.3.1 Sorting and Placebo Estimates

One possible concern with the results pertains to the direction of causality. It may be that those parties that are linked to ethnicities that have higher (lower) employment probabilities are systematically more likely (not) to gain a representative by a narrow margin. Notice that the focus on a sufficiently narrow margin and the higher weights attached to observations closer to the threshold would by itself in principle address this point, unless this sorting pattern is still relevant in the vicinity of the threshold.

We restrict the sample to those countries, constituencies, and political parties for which we have data on more than one election round.[18] Table A.7 in the Online Appendix shows that our main findings hold in this restricted sample. We then implement the same baseline specification as before, but, in constructing the main regressors, we consider the vote margin obtained by the party in the *following* election. That is, we test whether the employment probability of individuals changes discontinuously when the

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[16]Table A.2 in the Online Appendix shows that the average employment probability left of the threshold within the 20% bandwidth is equal to 55.9%.

[17]Figure A.6 in the Online Appendix provides a graphical representation of the same discontinuity together with local linear regression fit on both sides of the threshold. As discussed earlier, Tables B.1 to B.10 in Section B.1 of the Supplementary Appendix report all the estimates we obtain when using an overrepresentation cutoff of 0.05 in identifying links between ethnic groups and political parties. All results are very similar to the ones we obtained with our baseline cutoff choice of 0.01.

[18]We exclude Ivory Coast, Mali, Mozambique and Uganda, for which we have data on one election round only.

party linked to their ethnic group gains a representative by a narrow margin in elections that occur after the individual was surveyed. This amounts to a placebo test: if no sorting occurs around the threshold along dimensions related to pre-existing employment rates, the estimated β from this specification should be close to zero and insignificant.

Table A.8 in the Online Appendix reports the corresponding placebo estimates. None of them is significant, and the majority of them are close to zero in magnitude. We interpret this as further evidence of no manipulation around the threshold, and additional support for the validity of our identification approach.

These results also speak to the relevant mechanism and its timing by showing that the employment effect materializes *after* the election takes place. When hiring them as political brokers, politicians promise *de facto* empowerment to traditional leaders. Upon elections, politicians fulfill their promise, ethnic chiefs retain their power, and co-ethnics enjoy a competitive advantage in the labor market. In Section 5, we will discuss this mechanism in detail and provide both qualitative and quantitative evidence that supports this narrative.

4.3.2 Electoral Persistence and Change

A related concern is that those individuals belonging to the historically dominant ethnic group in the constituency have easier access to land and are therefore more likely to be employed in agriculture compared to the other groups. Also, the party linked to to the historically dominant ethnic group is probably more likely to gain a representative from the same constituency. In this scenario, individuals linked via ethnicity to the winning party would be systematically more likely to be employed in agriculture, but elections would not matter. Once again, note that our identification strategy exploits fine variation in electoral results, and the likelihood of winning elections for the party linked to historically dominant groups should not differ systematically and discontinuously at the election-winning threshold.

We first explore whether estimates are robust to conditioning on the full set of ethnicity-constituency fixed effects. Given that each ethnic group is linked to at most one political party, and that one party can either gain or not a representative in each constituency and election round, this saturated specification exploits variation within

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constituencies over time in the identity of the winning party and its ethnic links.

Column 1 and 2 of Table A.9 in the Online Appendix serve as a benchmark and report our main coefficient estimates, without and with the inclusion of village and individual-level controls. Column 3 and 4 report the three coefficient estimates that we obtained when implementing the specification that includes ethnicity-constituency fixed effects. Coefficient magnitudes are lower, but still significant at the 5% level in column 3, and marginally significant at the 10% level in column 4, after including also village and individual-level controls. In column 5 and 6, we tackle this concern more explicitly by dropping from the sample those individuals that belong to the historically dominant ethnic group in the constituency as determined by matching geographically the constituency centroid to historical ethnic homelands in the Murdock map. The RDD coefficient estimates remain significant at the 10% level.

4.3.3 Neighboring Constituency Matching

The richness of spatial information in our dataset makes it possible to investigate if unobservable characteristics at the sub-national level matter in generating the results. The concern is that changes in the economic or demographic landscape in particular regions prompt changes in the labor market status and sectoral activity of individuals from particular ethnic groups, and that these changes happen to correlate with changes in the identity of parties that gain a representative from constituencies in the area.

To address this concern, we combine our already demanding regression discontinuity design with spatial matching. We do so by implementing the regression specification in equation 2 with the addition of a full set of fixed effects that identify pairs of neighboring constituencies during the same election year. In doing this, we face the challenge that each constituency has typically many different neighbors, and there are accordingly many different ways to identify neighboring constituency pairs. To overcome this challenge, we implement a bootstrap-type procedure that identifies pairs of neighboring constituencies at random in each of 200 different repetitions.

Figure A.7 in the Online Appendix shows the empirical distributions of the estimated coefficients obtained using the three different estimators and across different specifications. The top figures consider the employment dummy as dependent variable while the

bottom figures refer specifically to agricultural employment, which we will soon investigate in detail. As expected, the empirical distributions of the estimates obtained using bias-corrected estimators are less dispersed than the OLS one in all cases. Most importantly, they are all centered around values remarkably close to the ones showed in Table 1. This indicates that accounting for unobservable characteristics at the sub-national level does not explain away the results.

4.4 Party-level Heterogeneity

Individuals belonging to ethnicities connected to the elected member of parliament are systematically more likely to be employed. The extent to which this is the case likely depends on the amount of political power held by the politician. In other words, the effect may depend on whether the politician is aligned with the government that forms in the aftermath of the election. This argument is also motivated by the literature that looks at presidential elections and ministerial composition to conceptualize patronage politics in Africa (Wantchekon 2003; Posner 2005; Burgess, Jedwab, Miguel, Morjaria, and Padró i Miquel 2015; Francois, Rainer, and Trebbi 2015). In this section, we show that, above and beyond the role of the executive, members of parliaments play a meaningful role in changing the distribution of resources among individuals, ethnic groups, and economic sectors in their electoral constituencies.

For each election in our dataset, we exploit information on whether each party supports the government. We then test whether the employment effects in Table 1 are heterogeneous along this dimension. Table 2 reports the corresponding results.[19] Columns 1 to 3 present the coefficient of interest from equation 2 as estimated from the subsamples of individual observations belonging to ethnicities connected to parties that do not support the government. The estimated coefficient is for the most part statistically insignificant and economically insignificant in the most demanding specifications. A different story emerges for those individuals belonging to ethnicities connected to parties that support the government. The estimates in columns 4 to 6 show that individuals connected to parties that support the government are 5 to 8 percentage points more

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[19]Figure A.4 in the Online Appendix shows graphically the distribution of the density function on both sides of the threshold across the two subsamples of parties that do not and do support the central government in the aftermath of elections, together with 95% confidence intervals.

likely to be employed when gaining a local representative in parliament compared to the others.

5 The Mechanism

Several authors have highlighted the salience of traditional leaders in African politics.[20] In the rural parts of the continent, to gain the support of voters means to recognize and engage with traditional chiefs. The interaction between politicians and traditional leaders takes different forms. Hagberg (2007) describes how the arrival of democracy in Burkina Faso strengthened the involvement of traditional leaders in party politics. He explains how chiefs act as "big electors" able to mobilize voters in support of one given party. Similarly, de Kadt and Larreguy (2018) discuss the crucial role of Zulu traditional leaders as political brokers for the Inkhata Freedom Party before 2009 in South Africa. In the case of Zambia, Baldwin (2013) reports that voters tend to align their voting decision to that of their chief if they perceive him to be collaborating with the politician running for the parliamentary election. In some cases, the role of chiefs as political brokers is formalized. This is the case for Cameroon in the 2002 elections, when the South West Chiefs Conference stated that the chiefs would act as campaign managers for the Cameroon People's Democratic Movement (Fonchingong 2005).

In order to secure the support of traditional leaders, politicians cede control over resources. Baldwin (2014) explains that "because traditional leaders are generally thought to favor their indigenous subjects in the allocation of land, the [politicians'] promise to devolve power to these leaders effectively signals a commitment to empowering indigenous community members." Boone (2009) explains how such a mobilization strategy has been put in place by political candidates in the Ivory Coast.

How can politicians cede and traditional leaders retain control over land allocation? In most sub-Saharan African countries, the legal framework around communal land management creates a high degree of ambiguity and potential for overlap of roles between traditional and State institutions. The case of Zimbabwe is particularly revealing. Chigwata (2016) explains: "while the Communal Lands Act suggests that rural local governments are the custodians of land within their respective jurisdictions, the Tra-

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[20]See Michalopoulos and Papaioannou (2014) and Baldwin (2014) for a review.

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ditional Leaders Act seems to allocate to chiefs some power over the allocation and management of communal land. In practice and due to custom and tradition, traditional leaders allocate and manage land blurring the competency boundaries with rural local governments. [...] In some cases, traditional leaders have acted like parallel governments in rural areas by allocating land which would have been already allocated by the government to other beneficiaries."

In the context of government-sponsored resettlement programs, land reforms or expropriation, the challenges of this dual power structure become more visible. While the Zimbabwe fast-track land reform programme of early 2000 was implemented, in Chirumhanzu district of Midlands province Chief Nhema allegedly "illegally allocated" over 300 families on a piece of land in the resettlement areas without consulting the responsible government entities (Chigwata 2016). Presidential assent of Malawi's Customary Land Act was delayed after chiefs demanded changes. Zambia's national land policy has struggled for approval for years as chiefs resist the demise of land allocation powers. This is also the case in Namibia, Ghana, South Africa (Alden Wily 2020). As Bruce (2014) puts it, "when land administration decentralization strategies seek to undermine traditional authorities, whose power is based largely on control of land, the change is part of a larger struggle for authority and is politically charged."

These cases illustrate how traditional leaders play an essential role in shaping government action on land issues. In exchange for political support, politicians can halt or delay the implementation of land programs and allow ethnic leaders to retain their control over land and its allocation. In Senegal, for instance, Honig (2015) uses data on all new land titles between 2007 and 2013 to show that higher levels of pre-colonial centralization are associated with fewer land cessations by the state today (Baldwin and Raffler 2019).

Importantly, the relationship between politicians and traditional chiefs is not exclusive to the election period. Given the mismatch between their limited mandate and the lifetime position of chiefs, politicians are aware that they will need to keep on interacting with chiefs to gain their support in future elections. This repeated interaction framework allows the chiefs to hold the elected politicians accountable for delivering their electoral promises. Lindberg (2010) reports that "chiefs exert considerable powers over MPs from rural constituencies" and they "overwhelmingly hold MPs account-

able for community development." Baldwin (2013) stresses that, in the period between democratic elections in Zambia, "non-elected traditional leaders have continued to influence governance in rural areas."

This large body of qualitative evidence informs our hypothesis regarding the mechanism behind the employment effects presented in the previous section. We argue that the positive employment effect of being linked to the winning party originates from the interactions between formally appointed political leaders and traditional ethnic power structures. These two levels of governance interact in a strategic way. Political parties demand votes and supply *de facto* empowerment to traditional leaders. The latter mobilize the individuals under their authority for political support and voting. When gaining a local representative, traditional leaders from connected ethnicities retain their *de facto* powers, first and foremost the one to allocate agricultural land. As a result, co-ethnics enjoy a competitive advantage in the agricultural land and labor market, gaining preferential access to land and agricultural jobs. The analysis that follows provides evidence that supports this hypothesis.

5.1 Pre-Colonial Ethnic Institutions

Embedded in our argument is the statement that traditional leaders are key in mobilizing co-ethnics and in building and sustaining the relationship between political parties and their ethnic voting base. If that is the case, we should expect the benefits of having a local ethnic party politician in parliament to be higher where pre-colonial ethnic institutions are stronger. To test this hypothesis, we implement the baseline employment regression specification and estimate the coefficient of interest separately in two subsamples as defined by the strength of pre-colonial ethnic institutions.

Table 3 shows the corresponding results.[21] The employment effect of gaining a local ethnic representative in the parliament is concentrated in constituencies that are located in ethnic homelands with high levels of pre-colonial political centralization. In this case, point estimates range from 4 to 6 percentage points, double the magnitude of the main average effect. The effect is virtually zero in constituencies located in ethnic homelands

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[21]Figure A.4 in the Online Appendix shows graphically the distribution of the density function on both sides of the threshold across the two subsamples of constituencies that belong to ethnic homelands with low and high levels of centralization, together with 95% confidence intervals.

with low levels of pre-colonial centralization. None of these estimates change meaningfully in magnitude with the inclusion of village-level and individual-level controls.

These results are consistent with those in Table 1 in showing that those estimates are a weighted average between a positive effect in areas with high levels of pre-colonial centralization and a zero or no effect in other areas. We interpret this as evidence that traditional ethnic power structures interact with formal politicians and shape the agency relationship between the latter and their ethnic base, consistent with the hypothesis we put forward concerning the main mechanism that generates our baseline findings.

5.2 Employment by Sector

Using information on the sector of employment, we can ask whether the main employment effect identified above is concentrated in a particular sector. We implement the regression specification in equation 2 but replace the dependent variable with a dummy equal to one if the individual is employed in the agricultural sector. We can then do the same for the manufacturing and service sector.

Figure 3 summarizes the results at the sectoral level. Consistent with the rest of the analysis, we present for each sector and regression specification the three estimated coefficients – $\hat{\beta}_{OLS}$, $\hat{\beta}_{IK}$ and $\hat{\beta}_{CCT}$ – together with their 90% confidence intervals. For each sector, the first set of estimates belong to a specification that includes country-year, ethnicity, and constituency fixed effects. The second set of estimates belong to a specification that also includes the full set of village-level and individual-level characteristics as controls.[22]

Results show that the employment effects of gaining a local ethnic representative are concentrated in the agricultural sector. The effect is indistinguishable from zero for manufacturing and service employment. Point estimates are such that the effect on agricultural employment is around 2 percentage points, very close to those reported when considering overall employment in Table 1. This corresponds to a 7.6% increase over the average agricultural employment rate left of the threshold.[23] Similarly to Fig-

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[22]Table A.10 in the Online Appendix shows the corresponding coefficient estimates and standard errors.

[23]Table A.2 in the Online Appendix shows that the average agricultural employment probability left of the threshold within the 20% bandwidth is equal to 26.2%.

ure 2, Figure 4 provides a graphical representation of the discontinuity in agricultural employment at the election-winning threshold.[24]

We also consider separately as outcome employment in the public sector. We identify public sector workers using information on occupation. Individuals belonging to ethnicities linked to parties that gain a local representative are not systematically more likely to have public sector occupations. Also in this case, the point estimate is not only insignificant at standard levels, but negligible in magnitude.

These results are once again consistent with our hypothesis that identifies preferential access to land and agricultural jobs as the main channel for the employment effect. It also suggest that politicians cannot sustain more direct forms of patronage (Colonnelli, Prem, and Teso 2018) in settings where the public sector is small, formal states are weak and lack infrastructural power and state capacity (Mann 1986). According to the World Bank (2018), the average share of public sector employment over total employment is around 5% for the countries in our sample. This is considerably lower than the worldwide average across countries, equal to 15%. In fact, half of the countries in our sample belong to the bottom quintile of the share of public sector employment distribution across countries with Benin, Uganda, Kenya, and Burkina Faso ranking in the bottom ten countries.

5.3 Ethnic Disfavoritism and Land Use

Our hypothesis is that individuals belonging to ethnicities linked to parties that gain a local representative in parliament enjoy preferential access to land and agricultural jobs. Evidence from the sectoral level analysis supports this hypothesis. Importantly, a situation in which existing land or jobs are reallocated away from non co-ethnics and assigned to co-ethnics is different from one in which new land is cleared or jobs are created and assigned to co-ethnics. In both cases, co-ethnics gain from favoritism. But, in the first scenario, non co-ethnics are *dis*-favored, reallocated away from agriculture towards other sectors and potentially made worse off as a result. This is not the case in the second scenario, where non co-ethnics are not displaced and their welfare may not change. Differentiating between the two scenarios is therefore important to gain some

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[24]Figure A.8 in the Online Appendix provides a graphical representation of the same discontinuity together with local linear regression fit on both sides of the threshold.

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insights on the welfare consequences of the phenomenon we are studying.

To this end, we first identify those ethnic groups which can potentially be disfavored by political parties, namely the "designated losers.". We identify *negative* links between ethnic groups and political parties using the same method described in Section 2, but adopting an *underrepresentation* criterion. That is, we assign party label "p" to ethnic group "e" if party p is (the most) *under*-represented, relative to its overall vote share in the country, among voters from ethnic group e.[25] We can then implement the same specification in equation 2 to test whether the labor market outcomes of individuals belonging to ethnicities that are underrepresented among the voters of a given party change discontinuously when that party gains a representative in parliament.

Figure 5 mirrors Figure 3 in presenting the coefficient estimates that we obtain when having as dependent variables a dummy equal to one if the individual is employed in each sector separately.[26] We find some evidence that individuals belonging to ethnicities that are underrepresented among the voters of the winning party reallocate away from the agricultural sector towards services – which includes non-farming entrepreneurship – with the corresponding set of coefficient estimates being negative and positive respectively for the two sectors. Most of the relevant estimates are not robust to the inclusion of village-level and individual-level characteristics as controls as shown by the second set of reported estimates and confidence intervals. This evidence of reallocation across sectors is consistent with the results from Table A.12 in the Online Appendix showing no discontinuous change in the overall probability of employment for potentially disfavored groups.

Together with the results from Table 1 and Figure 3, these results suggest that ethnic favoritism takes place through a reallocation of co-ethnics from out of employment towards employment in agriculture. At the same time, individuals belonging to underrepresented ethnicities reallocate away from agriculture towards services. Among the two we discuss at the beginning of this Subsection, this is the least suggestive of a net

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[25]We impose a labelling cutoff of 0.05. The trade-off involved in the choice of the labelling cutoff is specular to the one we face when attaching party labels based on over-representation, which we discuss in Section 3 above. Tables B.6 and B.5 in Section B.1 of the Supplementary Appendix report the results obtained when imposing a cutoff of 0.01, which are similar to the ones we report in Table A.11 and Table A.12 in the Online Appendix.

[26]Table A.11 in the Online Appendix shows the corresponding coefficient estimates and standard errors.

increase in overall welfare and development.

If reallocation is driving our results, the total amount of cropland should remain unchanged. We gain insights on whether this is the case using satellite data on land use. To test for cropland expansion, we test whether the share of land devoted to cropland in a given village changes with the ethnic links of local representatives in the national parliament. We implement the regression specification in equation 2, but having now as unit of observation a DHS cluster. We then assign to each cluster the vote margin of the party that is linked to the ethnicity that has the highest population share in the cluster, and define the regressors accordingly. The dependent variable is the share of land within a 1km buffer area around the cluster that is classified as cropland. In this case, β captures whether the share of cropland changes discontinuously when the majoritarian ethnic group in the village elects a local representative in the national parliament. Table A.13 in the Online Appendix shows the corresponding OLS coefficient estimates, using all available observations. With the exception of column 1, all estimates of the coefficient of interest are not statistically significant.[27]

5.4 Recognition of Traditional Leaders

We argue that the employment effects of being linked to the winning party originate from the strategic interactions between political leaders and traditional leaders. Politicians demand votes and supply *de facto* empowerment to traditional leaders. Chiefs mobilize the individuals under their authority for political support and voting.

In this scenario, we should expect the extent to which chiefs' authority is formally recognized by the national legislation to matter. The politician's promise of *de facto* empowerment has scope and leverage only in those settings where the authority of traditional leaders is not recognized *de jure*. We should therefore find the effect of electoral outcomes on employment – and agricultural employment specifically – only in those countries where the authority of chief leaders is not recognized *de jure*.

To test this hypothesis, we implement the baseline employment regression specification and estimate the coefficient of interest separately in two subsamples of countries as defined by whether the national constitution mentions traditional leaders, an intention-

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[27]Figure A.9 shows a graphical representation of the (absence of) discontinuity across different specifications.

ally conservative measure of *de jure* recognition.[28] Table 4 shows the corresponding results. The employment effect of gaining a local ethnic representative is concentrated in countries whose constitution makes no mention of traditional leaders. In all other countries, the effect is negligible in magnitude and insignificant. None of the estimates change meaningfully in magnitude with the inclusion of village-level and individual-level controls.

These results show that the effect of electoral outcomes on agricultural employment is concentrated in those countries where the authority of chief leaders is not recognized *de jure*. We have also shown earlier that the employment effect is concentrated in constituencies that are located in ethnic homelands with high levels of pre-colonial political centralization. These findings do not contradict each other. Strong pre-colonial institutions – which are key to mobilize co-ethnics for voting – and are often present in countries where traditional leaders are not even mentioned in the constitution – which gives scope to the politician's promise of *de facto* empowerment. This is the reality of around one fourth of individuals in our sample.

5.5 Role of Traditional Leaders

We provide additional evidence supporting the strategic empowerment hypothesis using Afrobarometer survey data. In the 2008 round, surveyed individuals are asked a number of questions about local politics and the authority of traditional leaders in society. We can therefore test whether the answers to such questions change with electoral outcomes in a discontinuous manner. Our final Afrobarometer dataset includes 8 countries and around 5,000 individuals – all of those for whom we identify links between their ethnic group and political parties running in the constituencies where they are surveyed. We lack the density of observations around the threshold that is needed to implement the most advanced regression discontinuity estimators. We therefore report only OLS estimates of β, which can therefore be interpreted only as suggestive evidence.

In the survey, individuals are asked whether traditional leaders should be partisan. We implement the regression specification in equation 2, but replacing as dependent variable a dummy that is equal to one if the individual answers this question in the

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[28]Figure A.4 in the Online Appendix shows graphically the distribution of the density function on both sides of the threshold across the two subsamples, together with 95% confidence intervals.

affirmatively. Table 5 shows the corresponding coefficient estimates. Gaining a local representative in parliament is associated with a positive significant and discontinuous increase in the likelihood of indicating that traditional leaders should be partisan. Point estimates are invariant to the inclusion of constituency and ethnicity fixed effects, and village-level and individual-level controls, ranging between 1.3 and 2 percentage points. We interpret this as evidence that the agency relationship between traditional leaders and politicians is strengthened when a local representative is elected.

The Afrobarometer questionnaires also ask about the authority that the individual considers responsible for the allocation of land. We construct a dummy that is equal to one if the individual identifies the traditional leader as responsible, and implement again the same regression specification. Table 6 reports the corresponding estimates of β. Depending on the specification, point estimates range from 5.8 to 9.4 percentage points, a 15 to 24% increase over the sample mean. Having a local ethnic party politician in parliament is associated with a discontinuous increase in the probability of identifying the traditional leader as responsible for the allocation of land.[29] We interpret this as consistent with the mechanism we suggest: as ethnic party politicians are elected to parliament, traditional leaders from the same ethnicity are empowered to allocate agricultural land and to favor co-ethnics. This differential access to land maps into the higher employment probabilities in the agricultural sector that we previously documented.

6 Discussion

This paper studies the labor market effects of ethnic politics and its impact on the allocation of resources, namely labor, between and within ethnic groups and sectors. Combining geo-referenced data across 15 countries on elections, ethnicities, and individual outcomes, we show that individuals from ethnicities connected to parties that elect a lo-

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[29]Figure A.11 and Table A.15 in the Online Appendix show additional results that we obtained considering other variables such as the role of the traditional leader in maintaining law and order or governing the community. Interestingly, we find some evidence that having a local ethnic party politician in parliament is associated with a decrease in the probability of identifying the traditional leader as responsible for governing the community, suggesting a pattern of division of power between traditional leaders and formally appointed politicians. This finding seems to point out the existence of a "duality" in the governance structure; in particular, it seems that power is split between formally appointed political leaders and ethnic chiefs. Figure A.10 in the Online Appendix provides a graphical representation of these results.

cal representative in the national parliament enjoy a competitive advantage in the local labor market, and in the agricultural sector in particular. Our argument is that strategic interactions between formally appointed politicians and traditional leaders trigger differential access to land and agricultural jobs across individuals belonging to different ethnicities. We present multiple pieces of evidence that are consistent with this hypothesis. First, the employment effects are concentrated in the historical homelands of ethnicities with strong pre-colonial institutions. Second, individuals from connected ethnicities are more likely to be employed in agriculture, and in those countries where the authority of traditional leaders is not recognized *de jure* by the national legislation. Third, they are also more likely to identify traditional leaders as partisan, and as being mainly responsible for the allocation of land.

Our study is silent on the welfare consequences of the allocative effects of ethnic politics. It is not clear whether the market distortions introduced by the strategic interactions between politicians and ethnic leaders increase or decrease overall efficiency, as this will depend on the distribution of skills across ethnic groups and sectors.

To gain insights into this issue we investigate whether the average characteristics of agricultural workers change systematically and discontinuously at the vote threshold that is relevant for the linked party to gain a local representative. This is informative of whether the composition of agricultural workers changes as more co-ethnics are re-allocated towards the agricultural sector. Figure 6 reports the estimated coefficients and 90% confidence intervals that we obtain when restricting the sample to individuals reporting to be working in the agricultural sector and estimating once again equation 2, but having as dependent variable a dummy equal to one if the individual reports to have some primary education, individual's age, a dummy for female, and a dummy for rural.[30] Coefficient estimates are ordered as in Figure 3. Evidence suggests that the average agricultural worker from ethnic groups linked to the winning party has systematically lower education. We find instead no changes in the average age, gender, and rural status. These results suggest that the positive agricultural employment effect of ethnic politics comes at the cost of decreasing the average skill level of agricultural workers.

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[30]Table A.14 in the Online Appendix shows the corresponding coefficient estimates and standard errors.

This evidence is only suggestive, as changes in skills other than those captured by education can potentially be the relevant ones in determining agricultural efficiency. Indeed, it is heterogeneity of skills across sectors that matters in determining the welfare consequences of sectoral reallocation. The quest for appropriate data to answer this question motivates our future research program.

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Tables and Figures

Table 1: Effect on Employment

	(1)	(2)	(3)	(4)	(5)	(6)
			Employment Dummy			
$\hat{\beta}_{OLS}$	0.0209	0.0206	0.0233	0.0279**	0.0202	0.0140
	(0.0251)	(0.0159)	(0.0156)	(0.0127)	(0.0131)	(0.0122)
$\hat{\beta}_{IK}$	0.0276	0.0282*	0.0267**	0.0253**	0.0219**	0.0150**
	(0.0411)	(0.0158)	(0.0111)	(0.0101)	(0.0100)	(0.0071)
$\hat{\beta}_{CCT}$	0.0375	0.0332*	0.0293**	0.0292**	0.0245**	0.0169**
	(0.0459)	(0.0178)	(0.0128)	(0.0115)	(0.0117)	(0.0084)
Bandwidth	0.218	0.206	0.218	0.254	0.220	0.196
Country-Year FE	No	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes	Yes
Individual Controls	No	No	No	No	Yes	Yes
Constituency FE	No	No	No	No	No	Yes
Observations	154942	147144	154233	166676	149528	134947

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table 2: Effect on Employment and Affiliation with Government

	(1)	(2)	(3)	(4)	(5)	(6)
			Employment Dummy			
	Non-Government Party			*Goverment Party*		
$\hat{\beta}_{OLS}$	0.0345	0.0336*	0.0120	0.0160	0.0536**	0.0616***
	(0.0219)	(0.0182)	(0.0179)	(0.0319)	(0.0234)	(0.0224)
$\hat{\beta}_{IK}$	0.0209	0.0182	0.0085	0.0543*	0.0710**	0.0670**
	(0.0146)	(0.0127)	(0.0127)	(0.0320)	(0.0317)	(0.0283)
$\hat{\beta}_{CCT}$	0.0226	0.0191	0.0094	0.0601	0.0805**	0.0753**
	(0.0164)	(0.0145)	(0.0145)	(0.0368)	(0.0360)	(0.0321)
Bandwidth	0.213	0.237	0.193	0.169	0.146	0.153
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	Yes	No	Yes	Yes
Individual Controls	No	No	Yes	No	No	Yes
Observations	76932	83178	69830	33464	29982	30534

Notes. * p-value< s 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Columns 1 to 3 are estimated using the subsample of parties that do not support the central government in the aftermath of elections. Columns 4 to 6 report the same estimates using the subsample of parties that support the central government in the aftermath of elections. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table 3: Effect on Employment and Pre-Colonial Ethnic Institutions

	(1)	(2)	(3)	(4)	(5)	(6)
	Employment Dummy				
	Low Level of Centralization			*High Level of Centralization*		
$\hat{\beta}_{OLS}$	0.0119	0.0105	0.0037	0.0303	0.0229	0.0209
	(0.0203)	(0.0169)	(0.0176)	(0.0239)	(0.0212)	(0.0206)
$\hat{\beta}_{IK}$	0.0003	0.0000	-0.0064	0.0390*	0.0530**	0.0428**
	(0.0170)	(0.0158)	(0.0141)	(0.0212)	(0.0230)	(0.0208)
$\hat{\beta}_{CCT}$	-0.0045	-0.0045	-0.0107	0.0480**	0.0621**	0.0515**
	(0.0195)	(0.0181)	(0.0161)	(0.0243)	(0.0264)	(0.0244)
Bandwidth	0.143	0.144	0.134	0.197	0.178	0.179
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	Yes	No	Yes	Yes
Individual Controls	No	No	Yes	No	No	Yes
Observations	42626	42677	39580	40450	35268	35524

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Columns 1 to 3 are estimated using the subsample of constituencies located in ethnic group homelands with a degree of political centralization equal to 0 or 1. Columns 4 to 6 report the same estimates using the subsample of constituencies located in ethnic group homelands with a degree of political centralization higher than 1. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table 4: Effect on Agricultural Employment and Traditional Leaders in the Constitution

| | Agricultural Employment Dummy | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)
	Traditional Leaders Not Mentioned			*Traditional Leaders Mentioned*		
$\hat{\beta}_{OLS}$	0.0263	0.0286	0.0132	0.0117	0.0116	0.0058
	(0.0233)	(0.0224)	(0.0226)	(0.0115)	(0.0128)	(0.0090)
$\hat{\beta}_{IK}$	0.0297**	0.0322**	0.0271**	0.0095	0.0091	0.0026
	(0.0140)	(0.0140)	(0.0133)	(0.0088)	(0.0085)	(0.0068)
$\hat{\beta}_{CCT}$	0.0324**	0.0346**	0.0286*	0.0081	0.0078	0.0009
	(0.0159)	(0.0161)	(0.0153)	(0.0103)	(0.0101)	(0.0082)
Bandwidth	0.192	0.203	0.209	0.267	0.275	0.298
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	Yes	No	Yes	Yes
Individual Controls	No	No	Yes	No	No	Yes
Observations	75644	74149	77147	82515	83038	88787

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working in agriculture. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Columns 1 to 3 are estimated using the subsample of countries where traditional leaders are not mentioned in the Constitution. Columns 4 to 6 report the same estimates using the subsample of countries where traditional leaders are mentioned in the Constitution. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table 5: Partisanship of Traditional Leader

| | Traditional Leader Should be Partisan | | | | |
	(1)	(2)	(3)	(4)	(5)
$\hat{\beta}_{OLS}$	0.0136**	0.0159**	0.0178*	0.0176*	0.0196**
	(0.0066)	(0.0074)	(0.0096)	(0.0094)	(0.0088)
Constituency FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Individual Controls	No	No	No	No	Yes
Observations	4899	4880	4869	4869	4778
R^2	0.0017	0.0609	0.0916	0.0929	0.0926

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the 2008 Afrobarometer. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual affirms that traditional leaders should be partisan. $\hat{\beta}_{OLS}$ is obtained using OLS. Village controls include latitude and longitude. Individual controls include age, a dummy for respondents in rural areas, and a dummy for female. Standard errors are clustered at the ethnic group level.

Table 6: Traditional Leaders and Land Allocation

	Primary Responsible for Land Allocation				
	(1)	(2)	(3)	(4)	(5)
$\hat{\beta}_{OLS}$	0.0864*	0.0936***	0.0652**	0.0653**	0.0584**
	(0.0496)	(0.0242)	(0.0302)	(0.0298)	(0.0285)
Constituency FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Individual Controls	No	No	No	No	Yes
Observations	4899	4880	4869	4869	4778
R^2	0.0082	0.3125	0.3201	0.3201	0.3259

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the 2008 Afrobarometer. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual indicates that the traditional leader is mainly responsible for the allocation of land. $\hat{\beta}_{OLS}$ is obtained using OLS. Village controls include latitude and longitude. Individual controls include age, a dummy for respondents in rural areas, and a dummy for female. Standard errors are clustered at the ethnic group level.

Figure 1: Case Studies
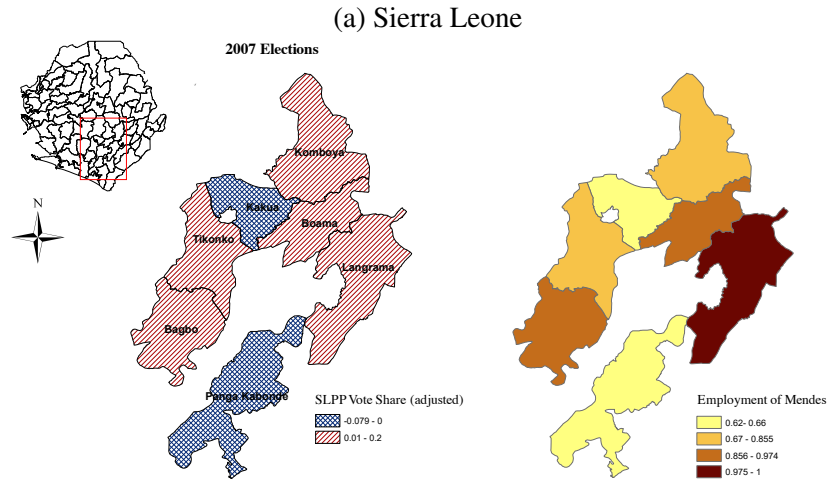
(a) Sierra Leone

Notes. The figure shows a cluster of constituencies in Sierra Leone. The left map reports the adjusted vote share of the Sierra Leone People's Party (SLPP) across these constituencies in the 2007 Elections. The right map reports the employment rate in 2008 of individuals belonging to the Mende ethnic group, which the labelling algorithm identifies as linked to the SLPP. The two districts where in 2007 the SLPP lost by a narrow margin – Kakua and Panga Kabonde – are those where in 2008 the employment rate of Mendes is lowest.
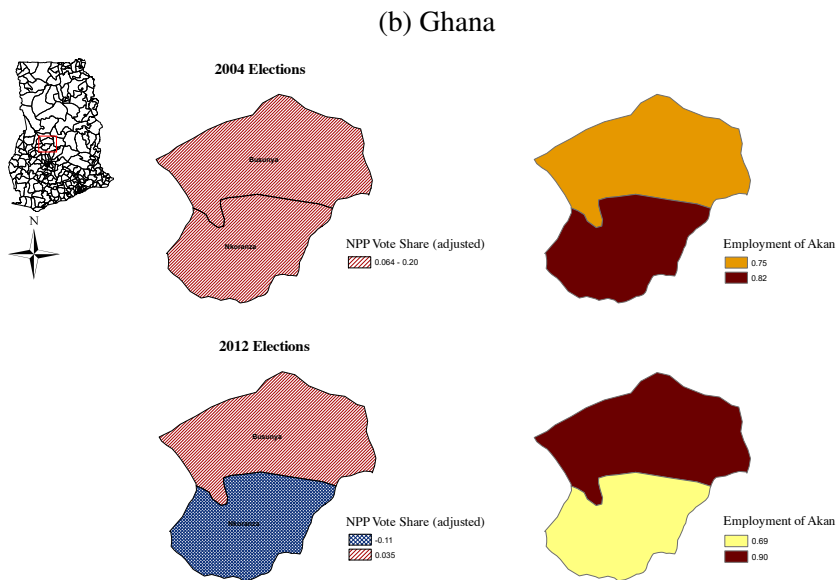
(b) Ghana

Notes. The figure shows a cluster of constituencies in Ghana. The left maps report the adjusted vote share of the New Patriotic Party (NPP) across these constituencies in the 2004 and 2012 Elections. The right maps report the employment rate in 2008 and 2014 of individuals belonging to the Akan ethnic group, which the labelling algorithm identifies as linked to the NPP. The employment rate of Akans decreases in the district that the NPP lost in 2012 – Nkoranza – while it increases district that the party retained – Busunya.

Figure 2: Effect on Employment

Notes. The figures plot the relationship between individual employment probabilities as derived from the DHS and electoral outcomes. The figures provide a graphical representation of the smoothed polynomial regression fit on both sides of the threshold that determines whether the party linked to the ethnic group the individual belongs to gains a local representative in the national assembly. It also plots 95% confidence intervals, and a scatterplot showing employment probabilities within 20 bins right and left of the threshold. The first graph shows unconditional probabilities, the second shows residual probabilities net of country-year and ethnicity fixed effects. The third also nets out constituency fixed effects.

Figure 3: Effect on Employment by Sector
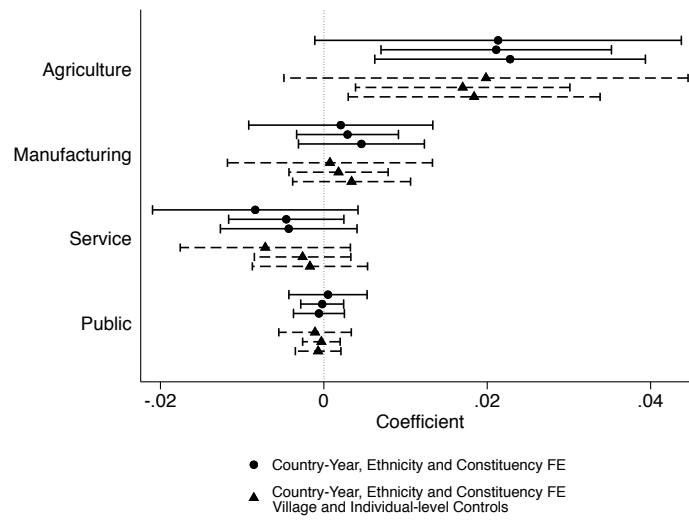
Notes. The figure reports the estimated coefficients and 90% confidence intervals that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working in agriculture, manufacturing, services, and the public sector. Table A.10 in the Online Appendix shows the corresponding results. For each sector, the figure reports two sets of three coefficient estimates: $\hat{\beta}_{OLS}$, obtained using OLS; $\hat{\beta}_{IK}$, obtained using the estimator proposed by Imbens and Kalyanaraman (2012); and $\hat{\beta}_{CCT}$, obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). The first set of three estimates belongs to a specification that includes country-year, ethnicity, and constituency fixed effects. The second set of three estimates belongs to a specification that also includes village-level and individual-level controls.

Figure 4: Effect on Agricultural Employment

Notes. The figures plot the relationship between individual probabilities of employment in the agricultural sector as derived from the DHS and electoral outcomes. The figures provide a graphical representation of the smoothed polynomial regression fit on both sides of the threshold that determines whether the party linked to the ethnic group the individual belongs to gains a local representative in the national assembly. It also plots 95% confidence intervals, and a scatterplot showing employment probabilities within 20 bins right and left of the threshold. The first graph shows unconditional probabilities, the second shows residual probabilities net of country-year and ethnicity fixed effects. The third also nets out constituency fixed effects.

Figure 5: Disfavoritism - Effect on Employment by Sector

Notes. The figure reports the estimated coefficients and 90% confidence intervals that we obtain when estimating equation 2, but considering the vote share of the party that is (the most) under-represented, relative to its overall vote share in the country, among voters from ethnic group e and using a cutoff of 0.05. The dependent variable is a dummy equal to one if the individual reports to be working in agriculture, manufacturing, services, and the public sector. Table A.11 in the Online Appendix shows the corresponding results. For each sector, the figure reports two sets of three coefficient estimates: $\hat{\beta}_{OLS}$, obtained using OLS; $\hat{\beta}_{IK}$, obtained using the estimator proposed by Imbens and Kalyanaraman (2012); and $\hat{\beta}_{CCT}$, obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). The first set of three estimates belongs to a specification that includes country-year, ethnicity, and constituency fixed effects. The second set of three estimates belongs to a specification that also includes village-level and individual-level controls.

Figure 6: Characteristics of Agricultural Workers

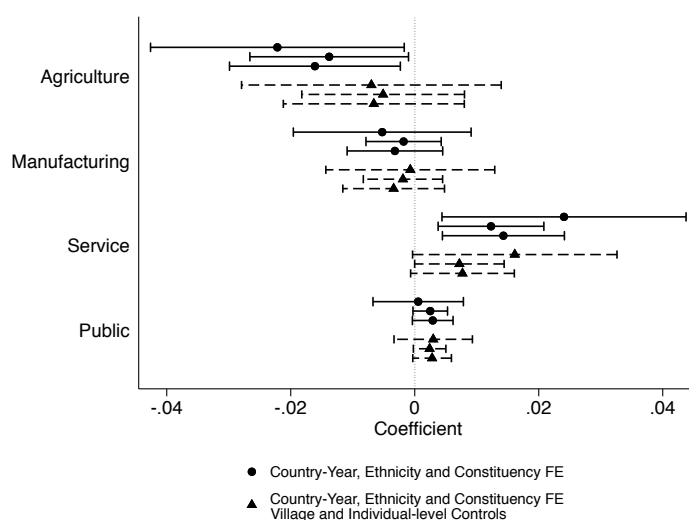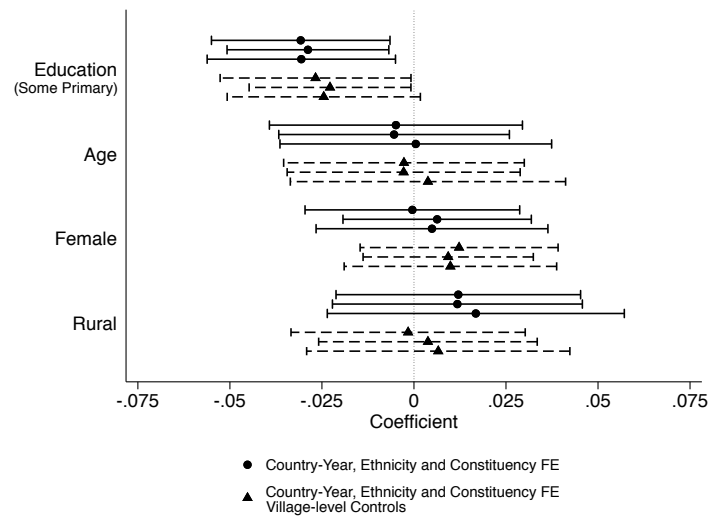*Notes.* The figure reports the estimated coefficients and 90% confidence intervals that we obtain when restricting the sample to individuals reporting to be working in the agricultural sector and estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to have some primary education, individual's age (in standard deviation), a dummy for female, and a dummy for rural. Table A.14 in the Online Appendix shows the corresponding results. For each sector, the figure reports two sets of three coefficient estimates: $\hat{\beta}_{OLS}$, obtained using OLS; $\hat{\beta}_{IK}$, obtained using the estimator proposed by Imbens and Kalyanaraman (2012); and $\hat{\beta}_{CCT}$, obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). The first set of three estimates belongs to a specification that includes country-year, ethnicity, and constituency fixed effects. The second set of three estimates belongs to a specification that also includes village-level controls.

A Online Appendix

A.1 Additional Tables and Figures

Table A.1: Constituencies and Contestation

Countries Election Years	Constituency Observations	Merged with DHS	Any Party Within $\leq 20\%$	Any Party Within $\leq 10\%$	Any Party Within $\leq 5\%$
Benin 1999, 2011	48	44	28 (0.64)	21 (0.48)	9 (0.20)
Burkina Faso 2002, 2007, 2012	104	102	54 (0.53)	35 (0.34)	23 (0.23)
Cameroon 2002, 2007	150	81	32 (0.40)	13 (0.16)	4 (0.05)
Ghana 1996, 2000, 2004, 2012	905	699	352 (0.50)	187 (0.27)	96 (0.14)
Ivory Coast 2011	185	129	46 (0.36)	22 (0.17)	11 (0.09)
Kenya 2002, 2007, 2013	706	414	185 (0.45)	107 (0.26)	62 (0.15)
Liberia 2005, 2011	137	130	101 (0.78)	61 (0.47)	33 (0.25)
Malawi 1999, 2004, 2009, 2014	759	567	256 (0.45)	136 (0.24)	64 (0.11)
Mali 2013	54	42	39 (0.93)	35 (0.83)	23 (0.55)
Mozambique 2009	22	11	8 (0.72)	6 (0.55)	4 (0.36)
Nigeria 2007, 2011	715	359	139 (0.39)	71 (0.20)	33 (0.09)
Senegal 2007, 2012	81	70	11 (0.16)	8 (0.11)	1 (0.01)
Sierra Leone 2007, 2012	222	215	44 (0.20)	21 (0.10)	14 (0.07)
Uganda 2011	335	132	66 (0.50)	39 (0.30)	18 (0.14)
Zambia 2006, 2011	298	259	95 (0.37)	48 (0.19)	24 (0.09)
Total	4721	3254	1456 (0.45)	810 (0.25)	419 (0.13)

Notes. The first column shows the set of countries and election years in our sample, for which geo-referenced information on election constituencies is available. The second column shows the total number of constituency-level observations available for each country in total across the different election years. The third column shows the number of constituency-year observations in the election dataset that we match with individual-level observations and are therefore relevant for our analysis. The last three columns show the number of constituency-year observations in the election dataset that are relevant for identification, meaning for which we observe any party with a vote margin within 20%, 10%, and 5% respectively from the relevant vote margin threshold. The number in parenthesis indicates which fractions of matched constituency-year observations (second column) these represent.

Table A.2: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	Observations
Panel A: Overall Sample					
Vote Margin (Adjusted)	0.094	0.387	-0.992	1	406592
Elected Local Ethnic Politician	0.587	0.492	0	1	406592
Employed	0.577	0.494	0	1	409604
Employed in Agriculture	0.287	0.452	0	1	409604
Employed in Manufacturing	0.115	0.319	0	1	409604
Employed in Services	0.199	0.4	0	1	409604
Employed in Public Sector	0.017	0.131	0	1	409604
Age	29.049	10.12	15	64	409604
Rural	0.637	0.481	0	1	409604
Female	0.722	0.448	0	1	409604
Completed Primary School	0.334	0.472	0	1	409585
Secondary Education or Higher	0.351	0.477	0	1	409604
Latitude	1.683	11.13	-26.817	16.656	409604
Longitude	11.349	19.497	-17.498	41.877	409604
Distance from Improved Roads (km)	16.78	30.567	0	577.4	409604
Distance from Cities (km)	34.145	29.497	0.078	578.515	409604
Elevation (m)	545.854	552.033	-4	3224.667	409501
Terrain Ruggedness	53.072	74.376	0	1311.546	409604
Agricultural Suitability	0.389	0.213	0	0.987	393254
Malaria Suitability	14.955	10.045	0	37.609	409604
Panel B: Observations Within 20% Right of the Threshold					
Vote Margin (Adjusted)	0.094	0.056	0	0.2	72784
Elected Local Ethnic Politician	1	0	1	1	72784
Employed	0.573	0.495	0	1	72784
Employed in Agriculture	0.289	0.453	0	1	72784
Employed in Manufacturing	0.108	0.311	0	1	72784
Employed in Services	0.201	0.4	0	1	72784
Employed in Public Sector	0.018	0.133	0	1	72784
Age	29.18	10.149	15	64	72784
Rural	0.657	0.475	0	1	72784
Female	0.722	0.448	0	1	72784
Completed Primary School	0.37	0.483	0	1	72779
Secondary Education or Higher	0.352	0.478	0	1	72784
Latitude	-0.586	11.102	-26.046	16.532	72784
Longitude	15.676	18.542	-16.73	41.83	72784
Distance from Improved Roads (km)	20.248	36.621	0	577.4	72784
Distance from Cities (km)	34.442	32.608	0.078	578.515	72784
Elevation (m)	592.29	544.453	-1.25	3224.667	72740
Terrain Ruggedness	63.453	91.787	0	1311.546	72784
Agricultural Suitability	0.421	0.211	0	0.987	69775
Malaria Suitability	14.249	10.173	0	37.609	72784
Panel C: Observations Within 20% Left of the Threshold					
Vote Margin (Adjusted)	-0.097	0.055	-0.2	0	69979
Elected Local Ethnic Politician	0	0	0	0	69979
Employed	0.559	0.497	0	1	69979
Employed in Agriculture	0.262	0.439	0	1	69979
Employed in Manufacturing	0.118	0.323	0	1	69979
Employed in Services	0.199	0.4	0	1	69979
Employed in Public Sector	0.02	0.139	0	1	69979
Age	28.926	10.033	15	64	69979
Rural	0.631	0.483	0	1	69979
Female	0.724	0.447	0	1	69979
Completed Primary School	0.367	0.482	0	1	69976
Secondary Education or Higher	0.364	0.481	0	1	69979
Latitude	0.315	10.717	-25.977	16.532	69979
Longitude	13.799	19.311	-16.723	41.249	69979
Distance from Improved Roads (km)	18.034	31.315	0	316.133	69979
Distance from Cities (km)	33.117	27.365	0.137	162.633	69979
Elevation (m)	614.114	557.529	0	2867.333	69979
Terrain Ruggedness	57.062	75.945	0.5	925.859	69979
Agricultural Suitability	0.38	0.221	0	0.925	67319
Malaria Suitability	13.524	9.759	0	35.064	69979
Panel D: Afrobarometer					
Vote Margin (Adjusted)	0.05	0.344	-0.99	0.993	4899
Elected Local Ethnic Politician	0.553	0.497	0	1	4899
Traditional Leader:					
Should Be Partisan	0.011	0.102	0	1	4922
Allocates Land	0.384	0.486	0	1	4922
Maintains Law and Order	0.071	0.256	0	1	4922
Governs the Community	0.566	0.496	0	1	4922
Age	35.851	14.288	18	99	4830
Female	0.502	0.5	0	1	4922
Rural	0.61	0.488	0	1	4922
Latitude	2.461	9.805	-17.858	14.957	4922
Longitude	8.334	17.484	-17.452	40.11	4922

Notes. The table reports the summary statistics of all variables used in the empirical analysis, described in Section 2 and with additional details in Supplementary Appendix B.5. Panel A shows the summary statistics for the overall final sample, while Panel B and C provide summary statistics for the subsample of observations within an adjusted vote share of 20% right and left respectively of the threshold that is relevant for gaining a local ethnic party representative from the constituency in the national assembly.

Table A.3: Sample Distribution by Country and Election Year

Countries	Election Years	DHS Survey Years	Observations	Frequency (%)
Benin	1999	2001	5357	1.31
	2011	2012	5731	1.4
Burkina Faso	2002	2003	9399	2.29
	2007	2010	10721	2.62
	2012	2014	5383	1.31
Cameroon	2002	2004	8748	2.14
	2007	2011	10631	2.6
Ghana	1996	1998, 1999	4819	1.18
	2000	2003	7792	1.9
	2004	2008	7584	1.85
	2012	2014	13216	3.23
Ivory Coast	2011	2012	7160	1.75
Kenya	2002	2003	945	0.23
	2007	2008, 2009	3508	0.86
	2013	2014, 2015	36227	8.84
Liberia	2005	2008, 2009	3486	0.85
	2011	2013	11394	2.78
Malawi	1999	2000	6252	1.53
	2004	2005	1423	0.35
	2009	2010, 2012	24576	6
	2014	2015, 2016, 2017	33306	8.13
Mali	2013	2015	5325	1.3
Mozambique	2009	2011	14965	3.65
Nigeria	2007	2008, 2010	4139	1.01
	2011	2013, 2015	49458	12.07
Senegal	2007	2008, 2009, 2010, 2011	374	0.09
	2012	2013, 2014, 2015, 2016	47438	11.58
Sierra Leone	2007	2008	9226	2.25
	2012	2013	21610	5.28
Uganda	2011	2014, 2015	3859	0.94
Zambia	2006	2007	7739	1.89
	2011	2013, 2014	27813	6.79
Total			409604	100

Notes. The first and second columns show the set of countries and election years respectively in our sample. The third column shows the DHS survey years that we match to each election round. The fourth column shows the total number of matched DHS observations of individuals belong to ethnic groups for which our linking procedure described in Section 2 identifies a link with a political party, using a labeling cutoff of 0.01. The fifth column shows the observations frequency distribution.

Table A.4: Test of Balance - Village Characteristics

	Latitude		Longitude		Dist. to Roads		Dist. to Cities		Elevation		Ruggedness		Suitability		Malaria	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
$\hat{\beta}_{OLS}$	0.0834	0.0019	-0.0973	0.0098	3.8361*	0.9307*	4.6947	-0.2889	-57.4413***	-5.8112	-9.6835*	-3.7917	0.0095	-0.0024	0.2615	0.0430
	(0.1271)	(0.0089)	(0.1462)	(0.0091)	(2.1677)	(0.5577)	(3.3448)	(0.5841)	(19.2467)	(3.8723)	(5.7520)	(2.8734)	(0.0202)	(0.0045)	(0.5598)	(0.0892)
$\hat{\beta}_{IK}$	0.0465	0.0071	-0.0566	0.0166	3.9871*	0.2668	2.5042	-0.3544	-44.1676	-2.9521	-2.1287	-0.7153	0.0080	-0.0034	0.1163	-0.0361
	(0.1250)	(0.0120)	(0.1022)	(0.0118)	(2.2101)	(0.3987)	(2.9210)	(0.3873)	(29.1432)	(2.7581)	(5.6880)	(1.4037)	(0.0170)	(0.0026)	(0.5107)	(0.0789)
$\hat{\beta}_{CCT}$	0.0274	0.0073	-0.0641	0.0162	4.5772*	0.3219	2.3301	-0.3206	-48.9458	-2.9741	-1.9261	-0.3097	0.0074	-0.0040	0.1713	-0.0491
	(0.1506)	(0.0141)	(0.1187)	(0.0139)	(2.5880)	(0.4953)	(3.5096)	(0.4659)	(34.0278)	(3.1618)	(6.5269)	(1.6115)	(0.0194)	(0.0030)	(0.5568)	(0.0921)
Bandwidth	0.246	0.203	0.197	0.201	0.256	0.165	0.232	0.305	0.229	0.191	0.145	0.159	0.245	0.191	0.222	0.212
Country/Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Observations	170102	144337	141479	143621	175538	120722	164335	201580	162723	138161	110102	118106	163313	132797	157208	151730

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable each village-level covariate as indicated in the column header. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Standard errors are clustered at the ethnic group level.

Table A.5: Test of Balance - Individual Characteristics

	Age		Rural		Female		Primary School		Secondary School or Higher	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$\hat{\beta}_{OLS}$	0.1533	0.0214	0.0416	-0.0002	0.0045	0.0009	0.0043	-0.0032	-0.0295	0.0021
	(0.1412)	(0.1103)	(0.0356)	(0.0166)	(0.0061)	(0.0067)	(0.0088)	(0.0072)	(0.0190)	(0.0121)
$\hat{\beta}_{IK}$	0.2160	0.0456	0.0506	0.0116	0.0093	0.0024	0.0014	0.0002	-0.0239	-0.0078
	(0.1394)	(0.0751)	(0.0344)	(0.0081)	(0.0062)	(0.0036)	(0.0092)	(0.0044)	(0.0170)	(0.0071)
$\hat{\beta}_{CCT}$	0.2069	0.0375	0.0609	0.0148	0.0118*	0.0027	0.0007	0.0006	-0.0277	-0.0087
	(0.1722)	(0.0900)	(0.0371)	(0.0092)	(0.0071)	(0.0044)	(0.0111)	(0.0054)	(0.0193)	(0.0086)
Bandwidth	0.207	0.318	0.190	0.287	0.153	0.247	0.277	0.267	0.211	0.206
Country/Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	148058	209628	137460	193527	114558	170400	186519	180936	150858	147477

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable each village-level covariate as indicated in the column header. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Standard errors are clustered at the ethnic group level.

Table A.6: Correlates of Political Competition

	Number of Parties					HHI
	(1)	(2)	(3)	(4)	(5)	(6)
Fractionalization	0.8131***		1.3793***	1.2005***	0.0932	-0.0947***
	(0.2149)		(0.4265)	(0.2867)	(0.3144)	(0.0314)
Polarization		0.4724**	-0.5774	-0.4015	0.0925	0.0243
		(0.1896)	(0.3757)	(0.2519)	(0.2540)	(0.0254)
Share of Employed					0.5562	-0.0938**
					(0.3830)	(0.0383)
Share of Agric.					-1.0275***	0.0536
					(0.3454)	(0.0345)
Share of Services					-2.3737***	0.0372
					(0.4159)	(0.0415)
Population					0.0012***	-0.0000
					(0.0004)	(0.0000)
Share of Rural Pop.					-0.3881***	-0.0217
					(0.1447)	(0.0145)
Primary School					1.0297***	-0.0120
					(0.2784)	(0.0278)
Secondary School					1.8123***	-0.0288
					(0.2509)	(0.0251)
Country FE	No	No	No	Yes	Yes	Yes
Observations	2293	2293	2293	2293	2293	2293
R^2	0.0062	0.0027	0.0072	0.5908	0.6171	0.2341

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is the electoral constituency in an election year. In columns 1 to 5, the dependent variable is the number of parties running in the constituency. In column 6, the dependent variable is a Herfindahl-type index of political competition calculated using vote shares by party. The independent variables included are derived from the individual-level DHS observations in the full sample, keeping only those belonging to the year that is after and closest to the election year.

Table A.7: Effect on Employment - Restricted Placebo Sample

	(1)	(2)	(3)	(4)	(5)
	Employment Dummy				
$\hat{\beta}_{OLS}$	0.0734*	0.0621**	0.0458*	0.0487**	0.0332
	(0.0390)	(0.0286)	(0.0231)	(0.0238)	(0.0242)
$\hat{\beta}_{IK}$	0.0721	0.0691**	0.0463**	0.0514*	0.0414*
	(0.0592)	(0.0350)	(0.0227)	(0.0266)	(0.0248)
$\hat{\beta}_{CCT}$	0.0774	0.0727*	0.0456*	0.0504	0.0410
	(0.0663)	(0.0422)	(0.0269)	(0.0309)	(0.0285)
Bandwidth	0.216	0.248	0.251	0.215	0.203
Country-Year FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Individual Controls	No	No	No	No	Yes
Observations	37886	42514	43030	35868	34275

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. Sample is restricted to those observations used in the placebo subsample, i.e. for whom it is possible to locate the adjusted vote share of the same party in the same constituency in the next election in our dataset. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table A.8: Effect on Employment - Placebo Estimates

| | Employment Dummy | | | | |
	(1)	(2)	(3)	(4)	(5)
$\hat{\beta}_{OLS}$	-0.0216	0.0120	0.0155	-0.0091	-0.0106
	(0.0456)	(0.0214)	(0.0275)	(0.0268)	(0.0228)
$\hat{\beta}_{IK}$	0.0158	-0.0046	0.0229	0.0078	-0.0014
	(0.0557)	(0.0264)	(0.0249)	(0.0254)	(0.0220)
$\hat{\beta}_{CCT}$	0.0269	-0.0046	0.0265	0.0115	-0.0001
	(0.0600)	(0.0295)	(0.0286)	(0.0294)	(0.0255)
Bandwidth	0.183	0.283	0.173	0.211	0.222
Country-Year FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Individual Controls	No	No	No	No	Yes
Observations	31597	46893	29797	34403	35967

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. The placebo adjusted vote share is equal to the one obtained by the same party in the same constituency in the next election in our dataset. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table A.9: Effect on Employment - Robustness

	(1)	(2)	(3)	(4)	(5)	(6)
			Employment Dummy			
$\hat{\beta}_{OLS}$	0.0194*	0.0140	0.0177	0.0293	0.0075	0.0117
	(0.0109)	(0.0122)	(0.0235)	(0.0204)	(0.0193)	(0.0210)
$\hat{\beta}_{IK}$	0.0179**	0.0150**	0.0121**	0.0108*	0.0160*	0.0163*
	(0.0072)	(0.0071)	(0.0053)	(0.0059)	(0.0084)	(0.0088)
$\hat{\beta}_{CCT}$	0.0201**	0.0169**	0.0133**	0.0118	0.0182*	0.0188*
	(0.0086)	(0.0084)	(0.0065)	(0.0072)	(0.0099)	(0.0104)
Bandwidth	0.214	0.196	0.271	0.243	0.221	0.185
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	n.a.	n.a.	Yes	Yes
Constituency FE	Yes	Yes	n.a.	n.a.	Yes	Yes
Village Controls	No	Yes	No	Yes	No	Yes
Individual Controls	No	Yes	No	Yes	No	Yes
Ethnicity-Const. FE	No	No	Yes	Yes	No	No
Observations	152140	134947	168650	149403	112942	93715

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. In column 3 and 4, sample is restricted to those countries for which we have information on more than one election round. In column 5 and 6, sample is restricted to those individuals belonging to ethnic groups other than the historically dominant one in the area as determined by matching the constituency centroid with the historical ethnic homelands in the Murdock map. Standard errors are clustered at the ethnic group level.

Table A.10: Effect on Employment by Sector

	Agriculture		Manufacturing		Services		Public	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\hat{\beta}_{OLS}$	0.0213	0.0198	0.0021	0.0007	-0.0084	-0.0072	0.0005	-0.0011
	(0.0137)	(0.0151)	(0.0069)	(0.0077)	(0.0077)	(0.0064)	(0.0029)	(0.0027)
$\hat{\beta}_{IK}$	0.0211**	0.0170**	0.0029	0.0018	-0.0046	-0.0026	-0.0002	-0.0003
	(0.0086)	(0.0080)	(0.0038)	(0.0037)	(0.0043)	(0.0036)	(0.0016)	(0.0014)
$\hat{\beta}_{CCT}$	0.0228**	0.0184*	0.0046	0.0034	-0.0043	-0.0017	-0.0006	-0.0007
	(0.0101)	(0.0094)	(0.0047)	(0.0044)	(0.0051)	(0.0043)	(0.0019)	(0.0017)
Bandwidth	0.204	0.203	0.219	0.241	0.279	0.280	0.233	0.228
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	No	Yes	No	Yes	No	Yes
Individual Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	145542	139005	155427	161946	188520	181883	165221	154929

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working in agriculture (columns 1 and 2), manufacturing (columns 3 and 4), services (columns 5 and 6), and the public sector (columns 7 and 8). $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table A.11: Disfavoritism - Effect on Employment by Sector

	Agriculture		Manufacturing		Services		Public	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\hat{\beta}_{OLS}$	-0.0222*	-0.0070	-0.0052	-0.0007	0.0241**	0.0161	0.0006	0.0030
	(0.0125)	(0.0128)	(0.0087)	(0.0083)	(0.0120)	(0.0101)	(0.0044)	(0.0039)
$\hat{\beta}_{IK}$	-0.0138*	-0.0051	-0.0018	-0.0019	0.0123**	0.0072*	0.0025	0.0024
	(0.0078)	(0.0080)	(0.0037)	(0.0039)	(0.0052)	(0.0044)	(0.0017)	(0.0016)
$\hat{\beta}_{CCT}$	-0.0161*	-0.0066	-0.0032	-0.0034	0.0143**	0.0077	0.0029	0.0028
	(0.0084)	(0.0089)	(0.0047)	(0.0050)	(0.0060)	(0.0051)	(0.0020)	(0.0019)
Bandwidth	0.170	0.172	0.299	0.288	0.251	0.301	0.252	0.233
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	No	Yes	No	Yes	No	Yes
Individual Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	80739	75672	127456	115820	109973	120313	110742	96763

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2, but considering the vote share of the party that is (the most) under-represented, relative to its overall vote share in the country, among voters from ethnic group e and using a cutoff of 0.05. The dependent variable is a dummy equal to one if the individual reports to be working in agriculture (columns 1 and 2), manufacturing (columns 3 and 4), services (columns 5 and 6), and the public sector (columns 7 and 8) $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table A.12: Disfavoritism - Effect on Employment

	Employment Dummy					
	(1)	(2)	(3)	(4)	(5)	(6)
$\hat{\beta}_{OLS}$	0.0515	0.0121	0.0095	0.0036	0.0047	0.0076
	(0.0444)	(0.0217)	(0.0227)	(0.0241)	(0.0234)	(0.0095)
$\hat{\beta}_{IK}$	0.0427	0.0133	0.0060	0.0073	0.0082	0.0027
	(0.0500)	(0.0203)	(0.0198)	(0.0190)	(0.0190)	(0.0065)
$\hat{\beta}_{CCT}$	0.0402	0.0132	0.0038	0.0060	0.0056	0.0029
	(0.0522)	(0.0232)	(0.0236)	(0.0230)	(0.0235)	(0.0070)
Bandwidth	0.176	0.243	0.206	0.201	0.194	0.289
Country-Year FE	No	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes	Yes
Individual Controls	No	No	No	No	Yes	Yes
Constituency FE	No	No	No	No	No	Yes
Observations	82164	106443	93884	85402	83050	116035

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2, but considering the vote share of the party that is (the most) under-represented, relative to its overall vote share in the country, among voters from ethnic group e and using a cutoff of 0.05. The dependent variable is a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table A.13: Cropland

	(1)	(2)	(3)	(4)	(5)
	Share of Cropland				
$\hat{\beta}_{OLS}$	0.0968**	0.0303	0.0185	0.0244	-0.0195
	(0.0400)	(0.0219)	(0.0175)	(0.0189)	(0.0186)
Country-Year FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Constituency FE	No	No	No	No	Yes
Observations	10629	10629	10134	10116	9533
R^2	0.0056	0.2308	0.3079	0.3649	0.6297

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is a DHS cluster. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable the share of land allocated to cropland within a 1km buffer area around the DHS cluster. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). Ethnicity and thus links with parties are identified based on the highest ethnic group population share in each village. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Standard errors are clustered at the ethnic group level.

Table A.14: Characteristics of Agricultural Workers

	Some Primary		Age		Female		Rural	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\hat{\beta}_{OLS}$	-0.0308**	-0.0267*	-0.0518	-0.0287	-0.0004	0.0123	0.0120	-0.0016
	(0.0148)	(0.0158)	(0.2217)	(0.2108)	(0.0178)	(0.0164)	(0.0203)	(0.0194)
$\hat{\beta}_{IK}$	-0.0288**	-0.0228*	-0.0567	-0.0298	0.0063	0.0093	0.0118	0.0038
	(0.0134)	(0.0134)	(0.2015)	(0.2043)	(0.0156)	(0.0141)	(0.0207)	(0.0181)
$\hat{\beta}_{CCT}$	-0.0306**	-0.0245	0.0055	0.0400	0.0049	0.0099	0.0168	0.0066
	(0.0156)	(0.0160)	(0.2383)	(0.2414)	(0.0192)	(0.0176)	(0.0246)	(0.0218)
Bandwidth	0.295	0.331	0.318	0.308	0.332	0.344	0.221	0.246
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	No	Yes	No	Yes	No	Yes
Individual Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	54540	58878	57502	55339	59589	61169	43186	46614

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS and reporting to be working in the agricultural sector. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to have some primary education (columns 1 and 2), individual's age in standard deviation (columns 3 and 4), a dummy for female (columns 5 and 6), and a dummy for rural (columns 7 and 8) $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Standard errors are clustered at the ethnic group level.

Table A.15: Role of Traditional Leader

	Should Be Partisan		Allocates Land		Maintains Law and Order		Governs the Community	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\hat{\beta}_{OLS}$	0.0178*	0.0196**	0.0652**	0.0584**	0.0101	0.0146	-0.0607	-0.0718**
	(0.0096)	(0.0088)	(0.0302)	(0.0285)	(0.0171)	(0.0190)	(0.0364)	(0.0345)
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	No	Yes	No	Yes	No	Yes
Individual Controls	No	Yes	No	Yes	No	Yes	No	Yes
Ethnicity FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	4869	4778	4869	4778	4869	4778	4869	4778
R^2	0.0916	0.0926	0.3201	0.3259	0.1396	0.1452	0.1970	0.2022

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the 2008 Afrobarometer. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual indicates that the traditional leader should be partisan (columns 1 and 2), is the main responsible for the allocation of land (columns 3 and 4), maintains law and order (columns 5 and 6), and governs the community (columns 7 and 8). $\hat{\beta}_{OLS}$ is obtained using OLS. Village controls include latitude and longitude. Individual controls include age, a dummy for respondents in rural areas, and a dummy for female. Standard errors are clustered at the ethnic group level.

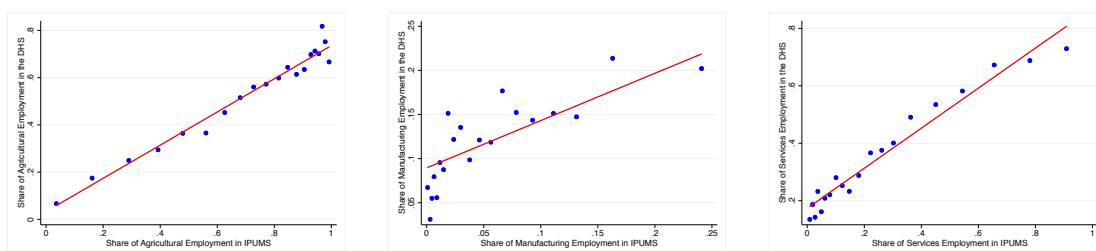## Figure A.1: Employment Shares by Sector: DHS vs. IPUMS

(a) Both Genders
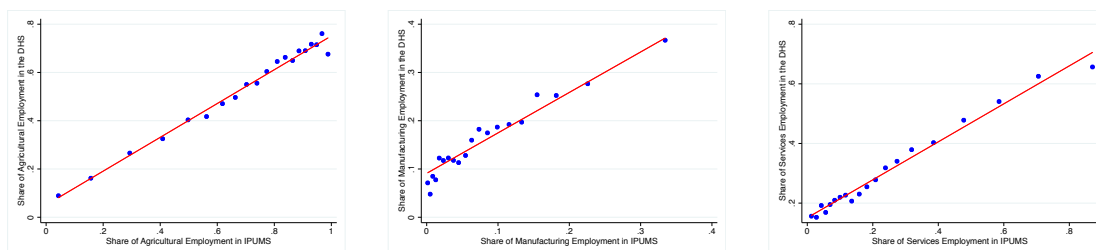

(b) Males
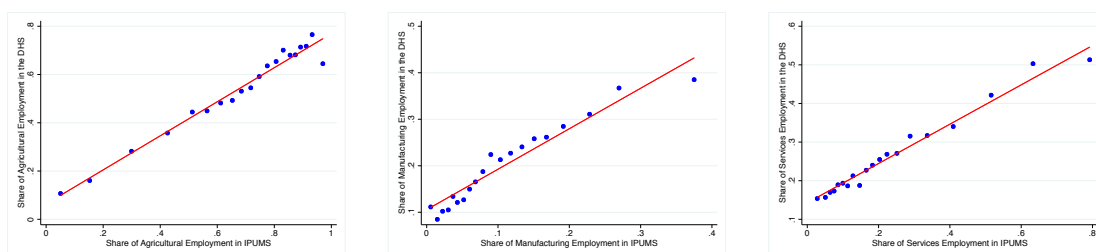
(c) Females

Notes. The figures plot the share of employment in each of the three main sectors – agriculture, manufacturing, and services – at the level of administrative subdivisions or regions and calculated from DHS data against the same variable calculated from IPUMS census data. They do so for those countries in our sample for which IPUMS data are available – Benin, Cameroon, Ghana, Liberia, Mozambique, Malawi, Nigeria, Sierra Leone and Zambia – and considering those DHS survey years that are closest in time to census years. The figures show binned scatter plots together with the corresponding linear regression line. When considering both genders together, the coefficient estimate from a simple regression of the agricultural employment share calculated from DHS data over the one obtained from IPUMS data is equal to 0.70. The same number is 0.84 for manufacturing and 0.64 for the service sector.

Figure A.2: Spatial Distribution of Contested Constituencies

(a) West Africa

(b) East Africa
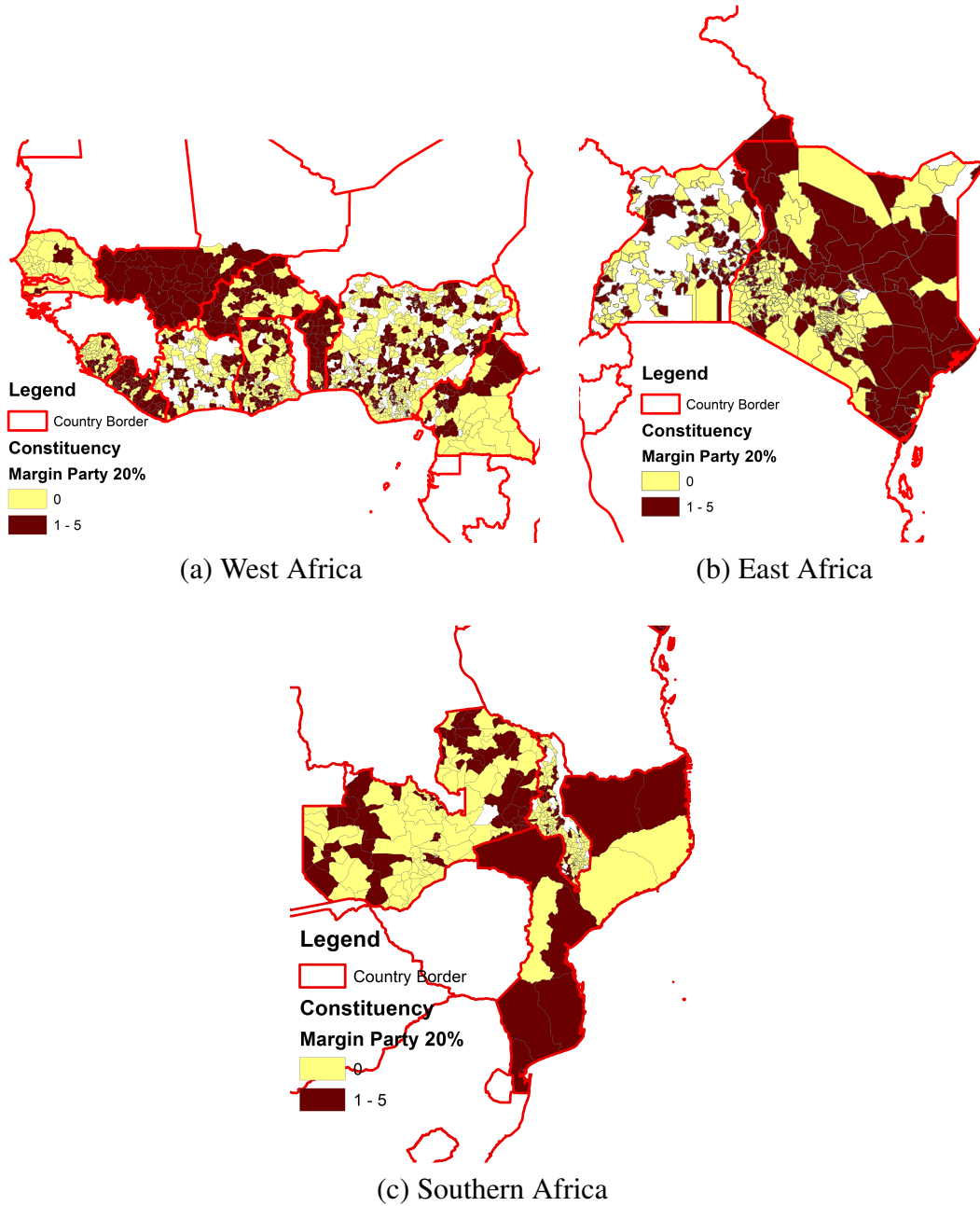
(c) Southern Africa

Notes. The figures show the spatial distribution of constituency-year observations for West Africa (a), East Africa (b), and Southern Africa (b). We highligh in brown those constituency-years where two parties or more score a vote margin of less of 20% percent from the relevant threshold for winning a seat in parliament.
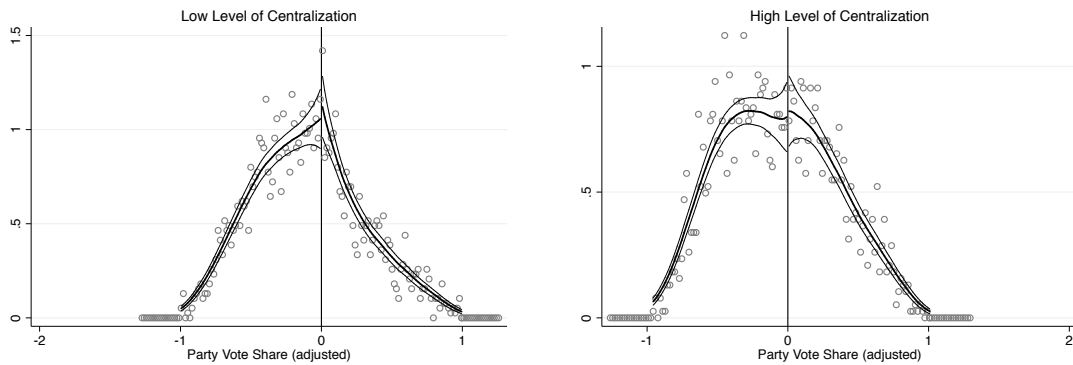
Figure A.3: Density Plot - McCrary Test
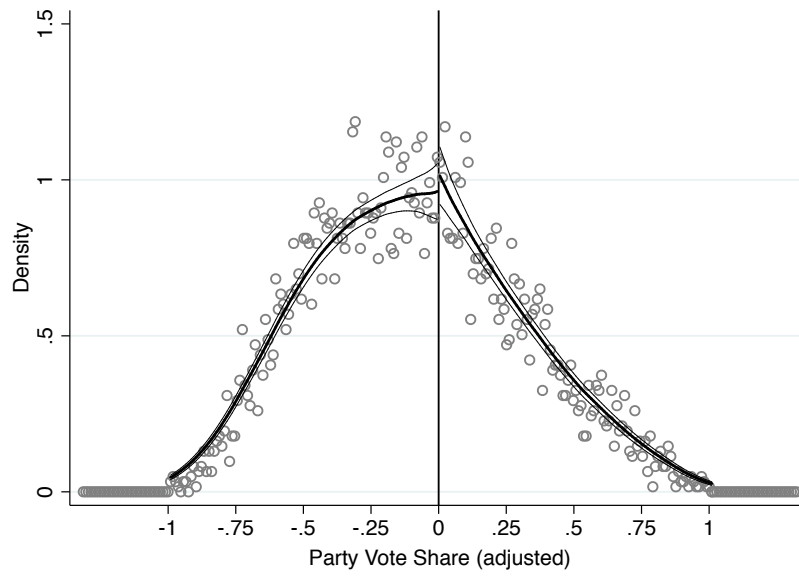
Notes. The figure shows the distribution of the density function of the running variable as estimated separately on both sides of the threshold, together with 95% confidence intervals. The p-value from a test of equality of the value of the density function on the left and right side of the threshold is equal to 0.4761 using the test by McCrary (2008), and equal to 0.4263 using the test by Cattaneo, Janssonz, and Ma (2018). We therefore cannot reject the hypothesis of no discontinuity in the density of the running variable at the threshold.
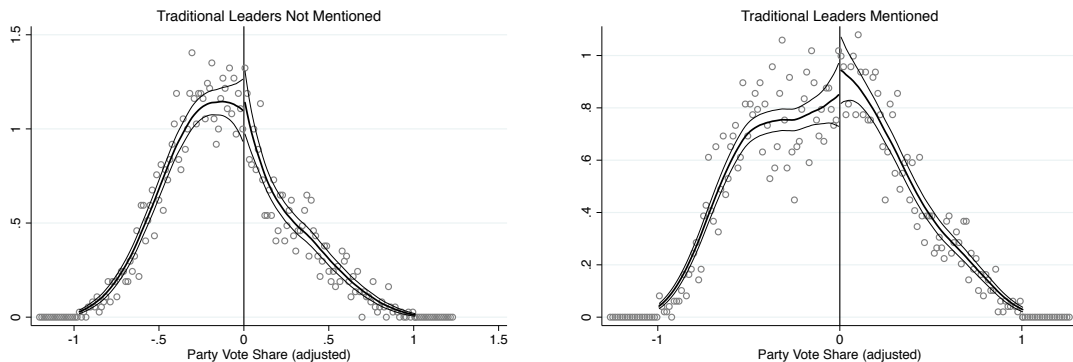
Figure A.4: Density Plot - McCrary Test by Subsample
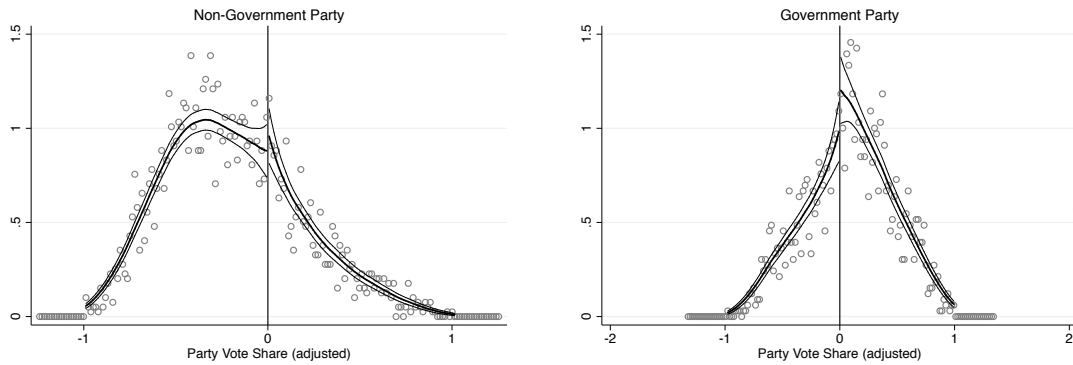
Notes. The figures show the distribution of the density function of the running variable as estimated separately on both sides of the threshold, together with 95% confidence intervals. The two are estimated separately in the subsample of parties that do not and do support the central government in the aftermath of elections respectively. For the non-government party subsample, the p-value from a test of equality of the value of the density function on the left and right side of the threshold is equal to 0.5281 using the test by McCrary (2008), and equal to 0.0725 using the test by Cattaneo, Janssonz, and Ma (2018). For the government party subsample, the p-value is equal to 0.0180 and 0.4833 respectively.

Notes. The figures show the distribution of the density function of the running variable as estimated separately on both sides of the threshold, together with 95% confidence intervals. The two are estimated separately in the subsample of constituencies that belong to ethnic homelands with low and high levels of centralization respectively. For the low centralization subsample, the p-value from a test of equality of the value of the density function on the left and right side of the threshold is equal to 0.7448 using the test by McCrary (2008), and equal to 0.7699 using the test by Cattaneo, Janssonz, and Ma (2018). For the high centralization subsample, the p-value is equal to 0.7154 and 0.9088 respectively.
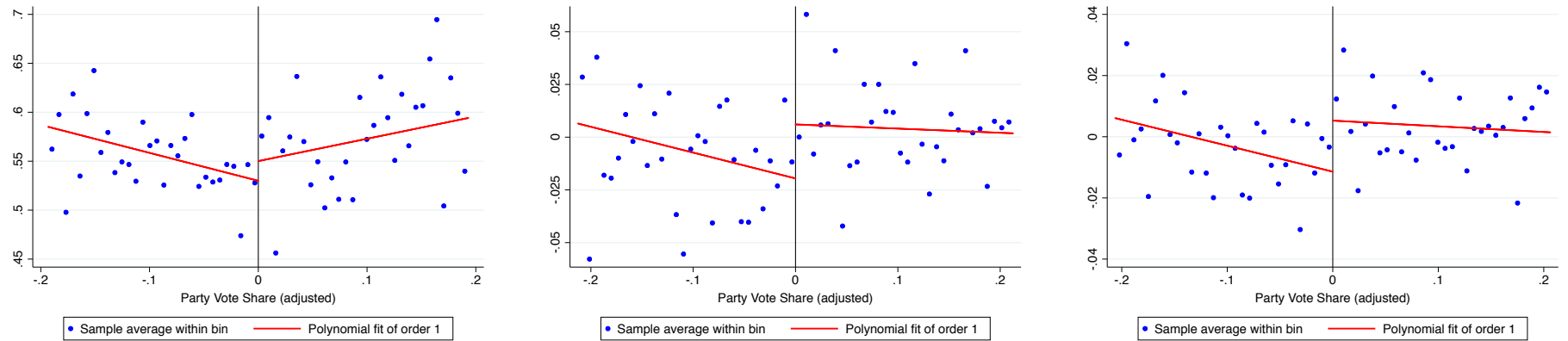

Notes. The figures show the distribution of the density function of the running variable as estimated separately on both sides of the threshold, together with 95% confidence intervals. The two are estimated separately in the subsample of countries where traditional leaders are not and are mentioned in the national Constitution respectively. For the first subsample, the p-value from a test of equality of the value of the density function on the left and right side of the threshold is equal to 0.862 using the test by McCrary (2008), and equal to 0.587 using the test by Cattaneo, Janssonz, and Ma (2018). For the second subsample, the p-value is equal to 0.251 and 0.958 respectively.

Figure A.5: Balancedness at the Threshold
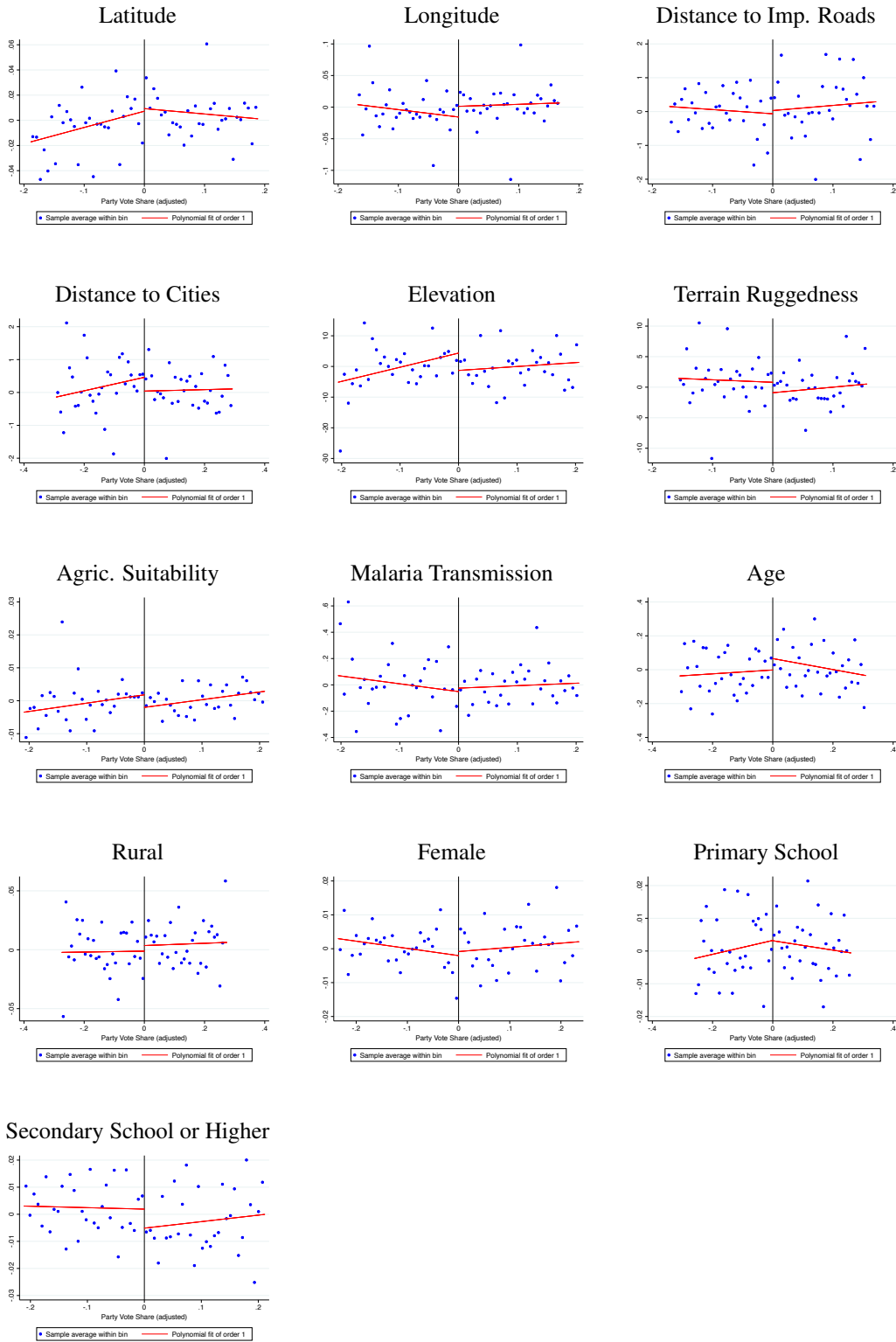
*Notes.* The figures provide a graphical representation of the local linear regression fit on both sides of the threshold. It also plots a scatterplot showing the average value of each residual covariate net of country-year, ethnicity, and constituency fixed effects in 30 bins right and left of the threshold. The figures show the absence of any meaningful discontinuities in the values of the covariates.

Figure A.6: Effect on Employment

Notes. The figures plot the relationship between individual employment probabilities as derived from the DHS and electoral outcomes. The figures provide a graphical representation of the local linear regression fit on both sides of the threshold that determines whether the party linked to the ethnic group the individual belongs to gains a local representative in the national assembly. It also plots a scatterplot showing employment probabilities within 30 bins right and left of the threshold. The first graph shows unconditional probabilities, the second shows residual probabilities net of country-year and ethnicity fixed effects. The third also nets out constituency fixed effects.

Figure A.7: Effect Within Neighboring Constituencies

(a) Employment

(b) Agricultural Employment
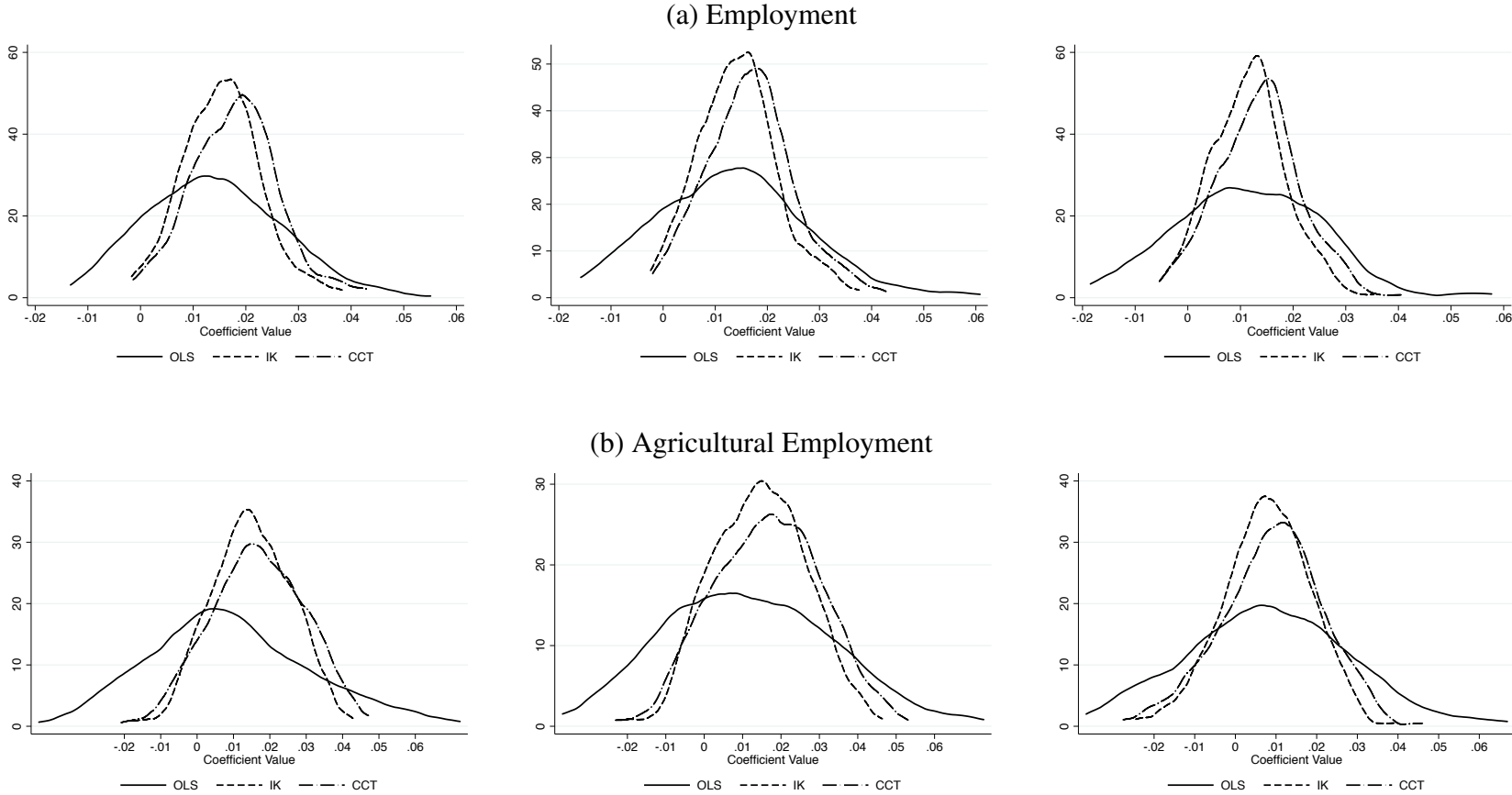
Notes. The figures plot the empirical distribution of coefficients obtained by implementing the regression specification in equation 2 with the addition of a full set of fixed effects that identify neighboring constituencies. Distributions are obtained following a bootstrap-type procedure that identifies pairs of neighboring constituencies at random in each of 200 repetitions. The left figure shows the empirical distributions obtained when implementing a specification that also includes country-year and ethnicity fixed effects. The central figure shows the ones obtained from implementing a specification that also includes village-level controls, and the right figure the ones obtained from implementing a specification that also includes individual-level controls.

Figure A.8: Effect on Agricultural Employment

Notes. The figures plot the relationship between individual probabilities of employment in the agricultural sector as derived from the DHS and electoral outcomes. The figures provide a graphical representation of the local linear regression fit on both sides of the threshold that determines whether the party linked to the ethnic group the individual belongs to gains a local representative in the national assembly. It also plots a scatterplot showing employment probabilities within 30 bins right and left of the threshold. The first graph shows unconditional probabilities, the second shows residual probabilities net of country-year and ethnicity fixed effects. The third also nets out constituency fixed effects.

Figure A.9: Share of Cropland
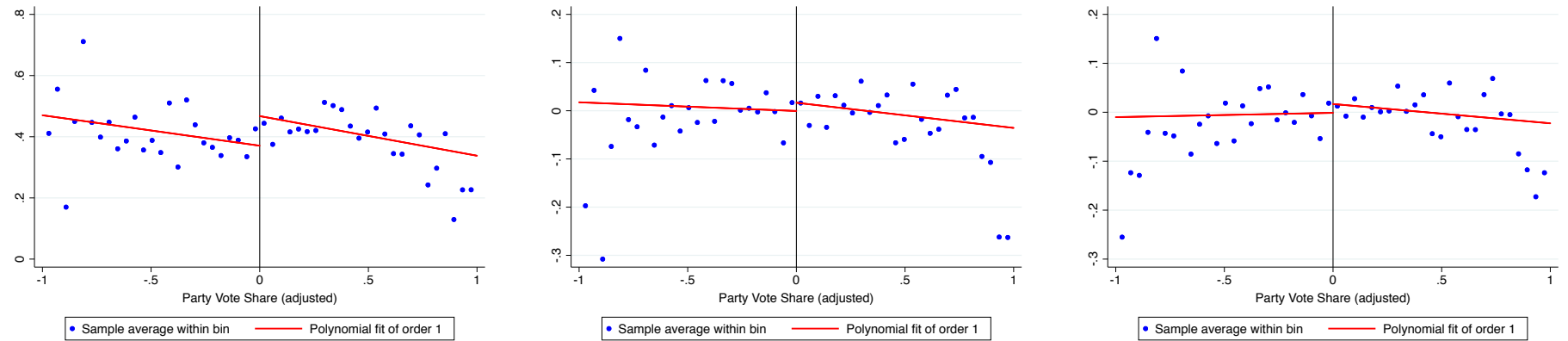
Notes. The figures plot the relationship between the share of cropland within a 1km buffer area around the DHS cluster and electoral outcomes. The figures provide a graphical representation of the local linear regression fit on both sides of the threshold that determines whether the ethnicity the majority of individuals in the cluster belong to is linked to a party that gains a local representative in the national assembly. It also plots a scatterplot showing the average value of each dummy variable in 30 bins right and left of the threshold. The first graph shows unconditional averages, the second shows average values of residuals net of country-year fixed effects. The third also nets out ethnicity fixed effects.

Figure A.10: Role of Traditional Leader
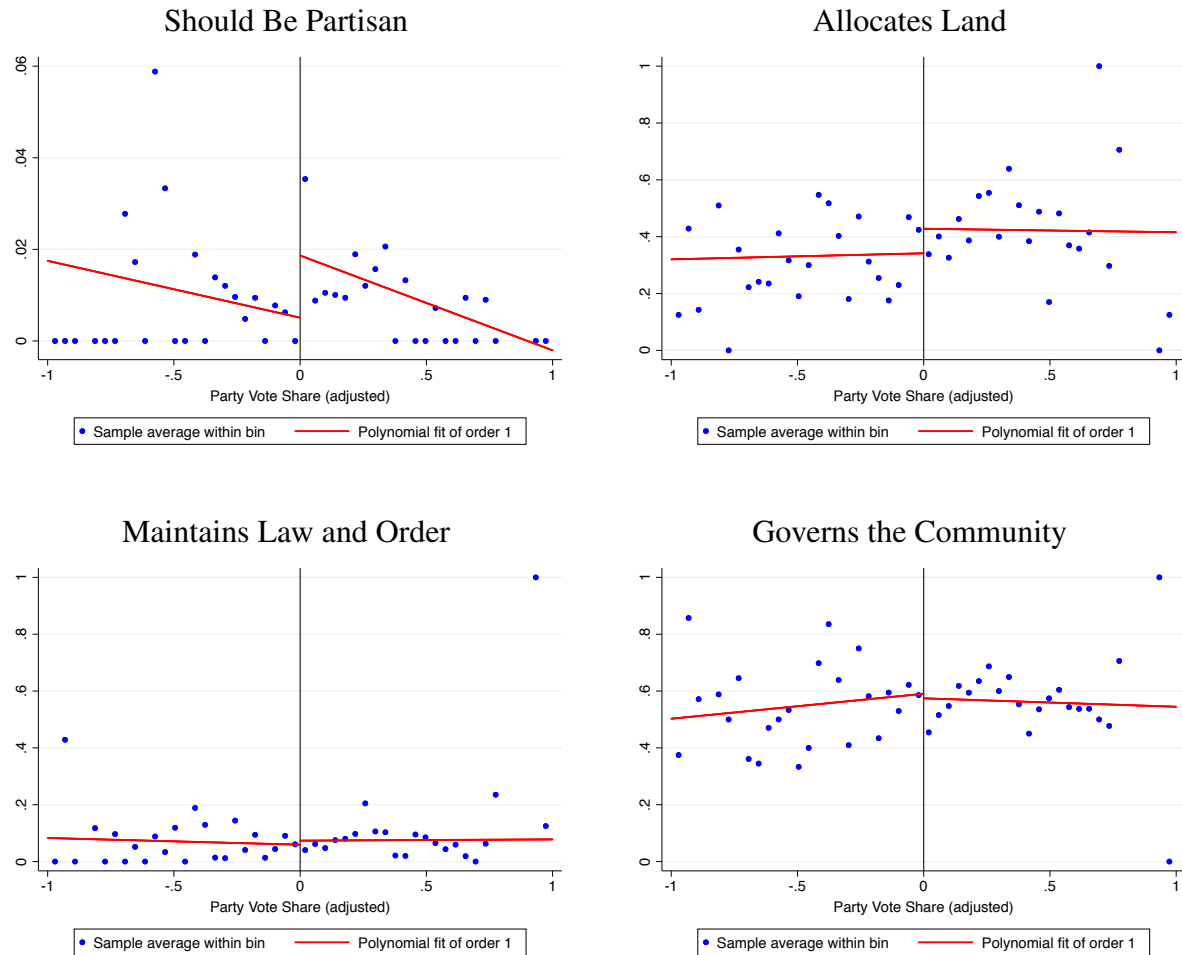
Notes. The figures plot the relationship between a set of individual reported beliefs about the role of traditional leaders and electoral outcomes. These variables are obtained from the 2008 Afrobarometer survey, and are dummies equal to one if the individual indicates that the traditional leader should be partisan, is mainly responsible for the allocation of land, maintains law and order, and governs the community. The figures provide a graphical representation of the local linear regression fit on both sides of the threshold that determines whether the ethnicity the individual belongs to is linked to a party that gains a local representative in the national assembly. It also plots a scatterplot showing the unconditional average value of each dummy variable in 25 bins right and left of the threshold.

Figure A.11: Role of Traditional Leader - Coefficient Estimates
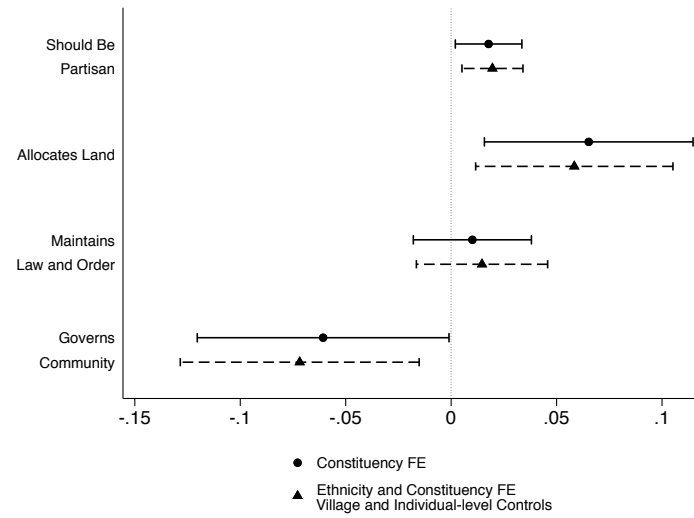
Notes. The figure reports the estimated coefficients and 90% confidence intervals that we obtain when having as unit of observation an individual as surveyed in the 2008 Afrobarometer and estimating equation 2, having as dependent variable a dummy equal to one if the individual indicates that the traditional leader should be partisan, is the main responsible for the allocation of land, maintains law and order, and governs the community. Table A.15 in the Online Appendix shows the corresponding results. For each sector, the figure reports two OLS coefficient estimates. The first one belongs to a specification that includes constituency fixed effects. The second one belongs to a specification that also includes ethnicity fixed effects, village-level, and individual-level controls.

B Supplementary Appendix Not Intended For Publication

B.1 Results with Alternative Ethnic Party Labeling Cutoffs

Table B.1: Effect on Employment - Overrepresentation Cutoff at 0.05

| | Employment Dummy | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)
$\hat{\beta}_{OLS}$	0.0211	0.0326**	0.0335**	0.0241**	0.0269**	0.0167
	(0.0229)	(0.0144)	(0.0131)	(0.0108)	(0.0111)	(0.0140)
$\hat{\beta}_{IK}$	0.0218	0.0331**	0.0263**	0.0258***	0.0224**	0.0133*
	(0.0390)	(0.0145)	(0.0104)	(0.0093)	(0.0094)	(0.0071)
$\hat{\beta}_{CCT}$	0.0248	0.0360**	0.0287**	0.0298***	0.0250**	0.0147*
	(0.0436)	(0.0165)	(0.0121)	(0.0107)	(0.0111)	(0.0085)
Bandwidth	0.252	0.233	0.242	0.287	0.244	0.229
Country-Year FE	No	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes	Yes
Individual Controls	No	No	No	No	Yes	Yes
Constituency FE	No	No	No	No	No	Yes
Observations	153990	146723	150058	164426	144213	138740

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table B.2: Effect on Employment and Affiliation with Government - Overrepresentation Cutoff at 0.05

	(1)	(2)	(3)	(4)	(5)	(6)
		Employment Dummy				
	Non-Government Party			*Goverment Party*		
$\hat{\beta}_{OLS}$	0.0345	0.0234	0.0201	0.0395**	0.0425**	0.0419**
	(0.0238)	(0.0162)	(0.0176)	(0.0193)	(0.0212)	(0.0187)
$\hat{\beta}_{IK}$	0.0220	0.0198	0.0125	0.0469**	0.0600**	0.0537**
	(0.0155)	(0.0129)	(0.0128)	(0.0227)	(0.0251)	(0.0215)
$\hat{\beta}_{CCT}$	0.0235	0.0205	0.0133	0.0500**	0.0662**	0.0591*
	(0.0175)	(0.0148)	(0.0143)	(0.0270)	(0.0285)	(0.0244)
Bandwidth	0.255	0.310	0.261	0.217	0.169	0.174
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	Yes	No	Yes	Yes
Individual Controls	No	No	Yes	No	No	Yes
Observations	76208	84400	75000	34358	27913	28263

Notes. * p-value< s 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Columns 1 to 3 are estimated using the subsample of parties that do not support the central government in the aftermath of elections. Columns 4 to 6 report the same estimates using the subsample of parties that do not support the central government in the aftermath of elections. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table B.3: Effect on Employment and Pre-Colonial Institutions - Overrepresentation Cutoff at 0.05

	Employment Dummy					
	(1)	(2)	(3)	(4)	(5)	(6)
	Low Level of Centralization			*High Level of Centralization*		
$\hat{\beta}_{OLS}$	0.0098	0.0068	-0.0001	0.0087	0.0068	0.0066
	(0.0257)	(0.0203)	(0.0184)	(0.0213)	(0.0188)	(0.0195)
$\hat{\beta}_{IK}$	-0.0084	-0.0042	-0.0075	0.0186	0.0280	0.0171
	(0.0185)	(0.0169)	(0.0144)	(0.0183)	(0.0182)	(0.0166)
$\hat{\beta}_{CCT}$	-0.0150	-0.0100	-0.0125	0.0242	0.0332	0.0231
	(0.0205)	(0.0188)	(0.0160)	(0.0225)	(0.0229)	(0.0217)
Bandwidth	0.128	0.129	0.128	0.181	0.169	0.187
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	Yes	No	Yes	Yes
Individual Controls	No	No	Yes	No	No	Yes
Observations	34307	35283	34197	30665	27347	30258

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Columns 1 to 3 are estimated using the subsample of constituencies located in ethnic group homelands with a degree of political centralization equal to 0 or 1. Columns 4 to 6 report the same estimates using the subsample of constituencies located in ethnic group homelands with a degree of political centralization higher than 1. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table B.4: Effect on Employment by Sector - Overrepresentation Cutoff at 0.05

	Agriculture		Manufacturing		Services		Public	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\hat{\beta}_{OLS}$	0.0217	0.0198	0.0038	0.0043	-0.0120	-0.0122*	0.0002	-0.0018
	(0.0143)	(0.0161)	(0.0077)	(0.0083)	(0.0079)	(0.0063)	(0.0033)	(0.0030)
$\hat{\beta}_{IK}$	0.0171*	0.0137	0.0037	0.0039	-0.0037	-0.0026	-0.0004	-0.0006
	(0.0090)	(0.0085)	(0.0040)	(0.0041)	(0.0047)	(0.0037)	(0.0018)	(0.0015)
$\hat{\beta}_{CCT}$	0.0189*	0.0155	0.0050	0.0052	-0.0040	-0.0020	-0.0009	-0.0012
	(0.0105)	(0.0099)	(0.0050)	(0.0051)	(0.0055)	(0.0045)	(0.0021)	(0.0019)
Bandwidth	0.209	0.206	0.232	0.234	0.288	0.300	0.232	0.227
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	No	Yes	No	Yes	No	Yes
Individual Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	132736	124713	146432	140884	171484	169513	146021	136874

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working in agriculture (columns 1 and 2), manufacturing (columns 3 and 4), services (columns 5 and 6), and the public sector (columns 7 and 8). $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table B.5: Disfavoritism - Effect on Employment by Sector - Underrepresentation Cutoff at 0.01

	Agriculture		Manufacturing		Services		Public	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\hat{\beta}_{OLS}$	-0.0124	-0.0070	0.0030	0.0086	0.0126	0.0074	0.0005	0.0017
	(0.0095)	(0.0095)	(0.0075)	(0.0073)	(0.0138)	(0.0093)	(0.0036)	(0.0029)
$\hat{\beta}_{IK}$	-0.0043	-0.0005	-0.0028	-0.0026	0.0107**	0.0050	0.0017	0.0014
	(0.0063)	(0.0062)	(0.0037)	(0.0040)	(0.0047)	(0.0040)	(0.0013)	(0.0012)
$\hat{\beta}_{CCT}$	-0.0035	-0.0001	-0.0047	-0.0046	0.0124**	0.0058	0.0021	0.0017
	(0.0070)	(0.0069)	(0.0044)	(0.0047)	(0.0056)	(0.0049)	(0.0015)	(0.0014)
Bandwidth	0.277	0.230	0.229	0.213	0.211	0.241	0.263	0.268
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	No	Yes	No	Yes	No	Yes
Individual Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	141260	114784	121702	108956	115628	119495	134614	129888

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2, but considering the vote share of the party that is (the most) under-represented, relative to its overall vote share in the country, among voters from ethnic group e. The dependent variable is a dummy equal to one if the individual reports to be working in agriculture (columns 1 and 2), manufacturing (columns 3 and 4), services (columns 5 and 6), and the public sector (columns 7 and 8) $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table B.6: Disfavoritism - Effect on Employment - Underrepresentation Cutoff at 0.01

| | Employment Dummy | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)
$\hat{\beta}_{OLS}$	0.0401	0.0334	0.0081	0.0092	0.0089	-0.0035
	(0.0411)	(0.0262)	(0.0190)	(0.0210)	(0.0191)	(0.0115)
$\hat{\beta}_{IK}$	0.0329	0.0306	0.0075	0.0089	0.0098	0.0012
	(0.0539)	(0.0271)	(0.0155)	(0.0152)	(0.0139)	(0.0056)
$\hat{\beta}_{CCT}$	0.0305	0.0340	0.0031	0.0061	0.0061	0.0003
	(0.0568)	(0.0328)	(0.0182)	(0.0181)	(0.0167)	(0.0058)
Bandwidth	0.265	0.220	0.235	0.222	0.235	0.231
Country-Year FE	No	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes	Yes
Individual Controls	No	No	No	No	Yes	Yes
Constituency FE	No	No	No	No	No	Yes
Observations	135497	118145	124841	111697	117603	115555

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. The table reports the estimate of β that we obtain when estimating equation 2, but considering the vote share of the party that is (the most) under-represented, relative to its overall vote share in the country, among voters from ethnic group e. The dependent variable is a dummy equal to one if the individual reports to be working. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table B.7: Effect on Agricultural Employment and Traditional Leaders in the Constitution - Overrepresentation Cutoff at 0.05

| | Agricultural Employment Dummy | | | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
	Traditional Leaders Not Mentioned			*Traditional Leaders Mentioned*		
$\hat{\beta}_{OLS}$	0.0249	0.0321	0.0278	0.0169	0.0178	0.0069
	(0.0238)	(0.0242)	(0.0252)	(0.0136)	(0.0144)	(0.0098)
$\hat{\beta}_{IK}$	0.0245	0.0261*	0.0230	0.0080	0.0066	0.0019
	(0.0150)	(0.0150)	(0.0146)	(0.0085)	(0.0087)	(0.0070)
$\hat{\beta}_{CCT}$	0.0273	0.0287*	0.0252	0.0076	0.0060	0.0021
	(0.0172)	(0.0174)	(0.0169)	(0.0100)	(0.0103)	(0.0086)
Bandwidth	0.202	0.217	0.213	0.223	0.207	0.226
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Ethnicity FE	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	Yes	Yes	Yes	Yes	Yes	Yes
Village Controls	No	Yes	Yes	No	Yes	Yes
Individual Controls	No	No	Yes	No	No	Yes
Observations	68148	68338	67735	65346	59575	64087

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the DHS. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual reports to be working in agriculture. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). The estimation bandwidth is the one obtained using the selector proposed by Calonico, Cattaneo, and Titiunik (2014). Columns 1 to 3 are estimated using the subsample of countries where traditional leaders are not mentioned in the Constitution. Columns 4 to 6 report the same estimates using the subsample of countries where traditional leaders are mentioned in the Constitution. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Individual controls include age, a dummy for respondents in rural areas, a dummy for female, a dummy for whether the individual completed primary school, a dummy for secondary school or higher. Standard errors are clustered at the ethnic group level.

Table B.8: Cropland - Overrepresentation Cutoff at 0.05

	Share of Cropland				
	(1)	(2)	(3)	(4)	(5)
$\hat{\beta}_{OLS}$	0.1230***	0.0480**	0.0269	0.0186	-0.0198
	(0.0387)	(0.0236)	(0.0187)	(0.0177)	(0.0206)
Country-Year FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Constituency FE	No	No	No	No	Yes
Observations	9641	9641	9151	9135	8567
R^2	0.0105	0.2360	0.3215	0.3741	0.6430

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is a DHS cluster. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable the share of land allocated to cropland within a 1km buffer area around the DHS cluster. $\hat{\beta}_{OLS}$ is obtained using OLS, $\hat{\beta}_{IK}$ is obtained using the estimator proposed by Imbens and Kalyanaraman (2012), and $\hat{\beta}_{CCT}$ is obtained using the estimator proposed by Calonico, Cattaneo, and Titiunik (2014). Ethnicity and thus links with parties are identified based on the highest ethnic group population share in each village. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. Village controls include latitude, longitude, distance from improved roads, distance from the closest urban centre with population of 50,000 or more, elevation, terrain ruggedness, agricultural suitability, and malaria suitability. Standard errors are clustered at the ethnic group level.

Table B.9: Partisanship of Traditional Leader - Overrepresentation Cutoff at 0.05

| | Traditional Leader Should Be Partisan | | | | |
	(1)	(2)	(3)	(4)	(5)
$\hat{\beta}_{OLS}$	0.0142**	0.0199**	0.0254***	0.0260***	0.0273***
	(0.0071)	(0.0082)	(0.0085)	(0.0084)	(0.0079)
Constituency FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Individual Controls	No	No	No	No	Yes
Observations	4268	4247	4234	4234	4173
R^2	0.0018	0.0693	0.0992	0.1001	0.1002

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the 2008 Afrobarometer. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual affirms that traditional leaders should be partisan. $\hat{\beta}_{OLS}$ is obtained using OLS. Village controls include latitude and longitude. Individual controls include age, a dummy for respondents in rural areas, and a dummy for female. Standard errors are clustered at the ethnic group level.

Table B.10: Traditional Leaders and Land Allocation - Overrepresentation Cutoff at 0.05

| | Primary Responsible for Land Allocation | | | | |
	(1)	(2)	(3)	(4)	(5)
$\hat{\beta}_{OLS}$	0.0736	0.0850***	0.0538*	0.0524*	0.0497*
	(0.0537)	(0.0268)	(0.0311)	(0.0310)	(0.0291)
Constituency FE	No	Yes	Yes	Yes	Yes
Ethnicity FE	No	No	Yes	Yes	Yes
Village Controls	No	No	No	Yes	Yes
Individual Controls	No	No	No	No	Yes
Observations	4268	4247	4234	4234	4173
R^2	0.0227	0.3334	0.3412	0.3413	0.3473

Notes. * p-value< 0.1; ** p-value<0.05; *** p-value<0.01. The unit of observation is an individual as surveyed in the 2008 Afrobarometer. Links between ethnic groups and political parties are derived by implementing the overrepresentation method discussed in Section 2 and using a cutoff of 0.05. The table reports the estimate of β that we obtain when estimating equation 2 and having as dependent variable a dummy equal to one if the individual indicates that the traditional leader is mainly responsible for the allocation of land. $\hat{\beta}_{OLS}$ is obtained using OLS. Village controls include latitude and longitude. Individual controls include age, a dummy for respondents in rural areas, and a dummy for female. Standard errors are clustered at the ethnic group level.

B.2 Elections and Data Sources by Country

Country	Data Description
Benin	*Electoral System:* Candidates are elected proportionally to the unicameral National Assembly (*Assemblée nationale*) on party lists. Each constituency corresponds to one of the country's departments. A party list has as many candidates as there are seats to be filled, with seats being allocated using a departmental (simple) quotient. Remaining seats are then filled using the greatest remainder rule.
	Election Years: 1999, 2011.
	Election Data Sources: CLEA.
	Shapefile Sources: https://data.humdata.org/dataset/benin-administrative-boundaries.
Burkina Faso	*Electoral System:* Candidates are elected proportionally to the National Assembly (*Assemblée nationale*) on party lists within multi-member constituencies. Seats are allotted using a simple electoral quotient and highest remainders.
	Election Years: 2002, 2007, 2012.
	Election Data Sources: 2002 - Carr; 2007 - CENI (http://www.ceni.bf/?q=resultats-provinciaux-legislatives-2007.html); 2012 - CLEA.
	Shapefile Sources: https://data.humdata.org/dataset/burkina-faso-administrative-boundaries
Cameroon	*Electoral System:* Candidates are elected to the unicameral National Assembly (*Assemblée nationale*, the lower house of parliament) in a mixed system. Single-member districts use a plurality system. The remaining districts use a list proportional system. In the proportional system, a list which gains an absolute majority wins. If no list gains an absolute majority, the one with the highest number of votes gets half of the seats and the remainder is allocated to the other best-placed lists. There is a 5% threshold for representation in these districts, and seats are awarded to candidates in the order they appear in the lists.
	Election Years: 2002, 2007.
	Election Data Sources: CLEA.
	Shapefile Sources: https://biogeo.ucdavis.edu/data/gadm3.6/shp/gadm36_CMR_shp.zip.
Ghana	*Electoral System:* Candidates are elected to the unicameral Parliament using a simple plurality rule in single-member constituencies.
	Election Years: 1996, 2000, 2004, 2012.
	Election Data Sources: 1996 - Election Passport; 2000, 2004, 2012 - CLEA.
	Shapefile Sources: https://services1.arcgis.com/KUeKSLlMUcWvuPRM/arcgis/rest/services/Constituencies_e

Ivory Coast   *Electoral System:* Candidates are elected to the National Assembly (*Assemblée nationale*, the lower house of the legislature) using a plurality rule in single- and multi-member constituencies. In the multi-member constituencies, this amounts to block voting.

Election Years: 2011.

Election Data Sources: CLEA.

Shapefile Sources: https://www.sogefi-sig.com/ressources/ https://data.humdata.org/dataset/cote-d-ivoire-administrative-boundaries.

Kenya   *Electoral System:* Candidates are elected to the National Assembly, the lower chamber of the Kenyan legislature, in a plurality system.[31] Some seats in the Assembly are elected from single member districts while others are seats reserved for women, who are elected at the county level. Other members are nominated and the position of the speaker is *ex officio*.

Election Years: 2002, 2007, 2013.

Election Data Sources: 2002 - EU Election Observation Mission Final Report; 2007 - Carr; 2013 - CLEA.

Shapefile Sources: https://github.com/mikelmaron/kenya-election-data/tree/master/output

Liberia   *Electoral System:* Candidates are elected using a plurality rule to the House of Representatives, the lower house of the Liberian legislature, in single-member constituencies.

Election Years: 2005, 2011.

Election Data Sources: CLEA.

Shapefile Sources: Election Passport (Digitized).

Malawi   *Electoral System:* Candidates are elected to the unicameral National Assembly using a plurality rule in single-member constituencies.

Election Years: 1999, 2004, 2009, 2014.

Election Data Sources: CLEA.

Shapefile Sources: http://www.diva-gis.org/datadown.

Mali   *Electoral System:* Candidates are elected to the unicameral National Assembly (*Assemblée nationale*) in two rounds within single- and multi-member constituencies. In the first round, an absolute majority is required to win. The two best-placed candidates or lists in the first round advance to the second round, where only a simple majority (plurality) is required.

Election Years: 2013.

Election Data Sources: Carr.

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[31]From 1966 to 2010 the Kenyan legislature was unicameral, lacking a Senate.

Shapefile Sources: https://gadm.org/download_country_v3.html.

Mozambique   *Electoral System:* Candidates are elected proportionally on party lists to the unicameral Assembly of the Republic (*Assembleia da Republica*) in single and multi-member constituencies. The d'Hondt method is used to allocate seats in the multi-member districts. There is a 5% electoral threshold to be represented in the Assembly.

Election Years: 2009.

Election Data Sources: CLEA.

Shapefile Sources: http://www.diva-gis.org/datadown.

Nigeria   *Electoral System:* Candidates are elected using a plurality rule to the lower house of Nigeria's National Assembly, the House of Representatives, in single-member constituencies.

Election Years: 2007, 2011.

Election Data Sources: 2007 - Carr; 2011 - CLEA.

Shapefile Sources: https://data.humdata.org/dataset/nga-administrative-boundaries.

Senegal   *Electoral System:* Candidates are elected in a mixed system to the unicameral National Assembly (*Assemblée nationale*) in single- and multi-member constituencies. Block voting is used in a portion of the districts, while in the remaining constituencies candidates are chosen proportionally at the national level from lists of candidates provided by parties or coalitions.

Election Years: 2007, 2012.

Election Data Sources: CLEA.

Shapefile Sources: 2007 - IPUMS; 2012 - http://www.diva-gis.org/datadown.

Sierra Leone   *Electoral System:* Candidates are elected using a plurality rule to the unicameral Parliament in single-member constituencies. Several other members are indirectly elected.

Election Years: 2007, 2012.

Election Data Sources: CLEA.

Shapefile Sources: NEC: Report on Electoral Constituency Boundaries Delimitation Process. August 2006 (Digitized).

Uganda   *Electoral System:* Most candidates are elected using a plurality rule to the unicameral Parliament in single-member constituencies. Further seats are reserved for women, who are elected directly, and appointees.

Election Years: 2011.

Election Data Sources: CLEA.

Shapefile Sources: National Population and Housing Census 2014. Area Specific Profiles (Digitized).

Zambia   *Electoral System:* Most candidates are elected using a plurality rule to the unicameral National Assembly in single-member constituencies. Other members are appointed by the President. The Vice President is also considered a member of the body.

Election Years: 2006, 2011.

Election Data Sources: CLEA.

Shapefile Sources: CLEA.

B.3 Details on the labelling algorithm

Political parties may function as the representatives of special interests, such as as ethnic groups. Which interest groups are represented by which party is typically well understood by participants of any given political system, but assigning a "group label" to a party still involves a certain amount of subjectivity. To overcome this challenge and tie our hands, we use survey-data that has information on individuals' ethnic identification as well as the parties individuals voted for (both self-reported) to "learn" the ethnic affiliation of parties from data. The data we use come from Afrobarometer, waves 1-6. Table B.11 gives an example.

Table B.12: Example of ethnicity-voting data from Afrobarometer

country	Afrobarometer round	ethnic group	party vote
Ghana	5	Akan	NPP
Ghana	5	Akan	NDC
Ghana	5	Ewe	NDC

These data can be used in two ways.
(a) We can try to predict which ethnic groups are disproportionately likely to be among the voters for some party to assign ethnicity-labels to parties
(b) We can try to predict which party is disproportionately likely to be the one chosen by the voters of a particular ethnic group to assign party-labels to ethnicities.

This appendix describes different methods for both of these tasks and compares them in practise using our data.

Harmonizing ethnicity names Reported ethnicities in Afrobarometer sometimes fall into many (50+ per country) individual groups. Many of these groups are tiny (3-5 individuals only in the data) and are subgroups of other, larger groups. If groups are very small, predicted labels may be very sensitive to outliers, e.g. if all individuals sampled from that group happen to vote for one party, which, given the clustered design of Afrobarometer, is more likely to happen. Moreover, the DHS ethnicity data is less granular than the Afrobarometer data. Since we observe our outcome of interest (employment) for the DHS data, we can only use the level of detail on ethnic groups available in the DHS data. As a first step, we therefore harmonize groups appearing in Afrobarometer to their DHS equivalent and assign smaller subgroups to their larger ethnic kin. We create ethnicity link files for each country to automate the matching. We do not change the level of ethnic detail on the DHS side but we do harmonize spellings of groups where they differ between DHS survey rounds. For Afrobarometer, we use an individual's language (in the variables "What is your home language" (round 1) and "Language of respondent" (round 2), where explicit ethnicity information is not available. For rounds 3-6, we have the variable "Tribe or ethnic group", and only use the language variable where this variable is missing.

Harmonizing party names Afrobarometer records the affiliation to political parties in great detail. In rounds 1-2, respondents are asked "Do you feel close to any particular party?" "If yes, which party?" In rounds 3-6, they are additionally asked "If

the election were held tomorrow, which party would you vote for?" We use the direct voting question where available and use the closeness to party only where the answer to the direct voting question is not available. We then match all answers given in Afrobarometer to the names of parties in our voting data. There are several parties appearing in Afrobarometer that do not appear in our voting data. In running the algorithms, we therefore constrain the set of parties to be that in our election data.

Missing data   We exclude from the dataset used for labelling those individuals for which either the ethnicity or party information is missing.

B.3.1   The algorithms

(a) Assigning ethnicity labels to parties

Vector-distance over-representation   The first algorithm assigns ethnicity labels to parties by checking which ethnicities are over-represented relative to their national population share among the voters of each party. First, define the following notation:
- N number of individuals in the country
- N^e number of individuals of ethnic group e
- N_p number of votes cast for party p
- N_p^e number of votes cast by individuals of ethnic group e for party p

It carries out the following steps
1) Compute ethnicity-party vote share $s_p^e = \frac{N_p^e}{N_p}$, party vote share $s_p = \frac{N_p}{N}$, and ethnicity population shares $s^e = \frac{N^e}{N}$
2) Compute ethnicity-party-over-representation measure $\beta_p^e = s_p^e - s^e$
3) Keep only party×ethnicity observations with $\beta_p^e > \overline{\beta}$ (this cutoff can be varied).
4) Sort the labels by β_p^e such that the ethnicity with the highest β_p^e is the first label of each party.

The end result is a set of labels for each party. As an alternative to simple over-representation, we also compute a measure of "percentage" over-representation, replacing β_p^e with $\gamma_p^e = \frac{s_p^e - s^e}{s^e}$. Intuitively, when an ethnicity is small, the simple difference $s_p^e - s^e$ can never be very large. Normalizing by group size puts all ethnicities on an equal footing, but makes the measure assign large "meaning" to very small groups that are over-represented among voters of certain parties.

Dummy regressions   This algorithm predicts the ethnic affiliation of parties by
1) running a set of $k = 1, \ldots, K$ regressions (one set of K regressions for every party p, where each individual regression includes only an ethnicity dummy for ethnic group k):

$$\mathbb{I}(\text{vote for party } p)_{is} = F(\alpha_s, E^k; \boldsymbol{\theta}), \tag{1}$$

where E^k is a dummy equal to one if individual i observed in survey(-year) s belongs to ethnicity k and zero otherwise, α_s is a survey fixed effect, $\boldsymbol{\theta}$ is a vector of coefficients, and $F()$ is a function. The code implements this regression as either LPM or Probit.

2) Obtain the estimated coefficient $\hat{\theta}_p^k$ on E^k as well as its standard error, and compute the absolute value of the t-statistic as $t_p^k \equiv \frac{\hat{\theta}_p^k}{\widehat{se}(\hat{\theta}_p^k)}$.

3) Discard party×ethnicities with $|\hat{\theta}_p^k| < t_{0.05,N-n_s-1}$, where $t_{0.05,N-n_s-1}$ is the critical value for a two-sided t-test from a distribution with $N - n_s - 1$ d.f. (number of individuals minus number of survey years minus 1; corresponds to significance at the 5% level).

4) Among the significant party×ethnicities, retain only those with $\hat{\theta}_p^k > \overline{\theta}$ (the cutoff can be varied).

5) Sort the labels by $\hat{\theta}_p^k$ such that the ethnicity with the highest $\hat{\theta}_p^k$ is the first label of each party.

The end result is a set of labels for each party.

(b) Assigning party labels to ethnicities

Vector-distance over-representation   This algorithm works similarly to the vector-distance over- representation algorithm assigning ethnicity labels to parties. It asks: "Are parties over-represented relative to their overall vote share among the voters from certain ethnic groups?" and carries out the following steps:

1) Compute party-ethnicity vote share $s_e^p = \frac{N_p^e}{N_e}$, and party vote share $s^p = \frac{N_p}{N}$

2) Compute party-ethnicity over-representation measure $\beta_e^p = s_e^p - s^p$

3) Keep only ethnicity×party observations with $\beta_e^p > \overline{\beta}$ (this cutoff can be varied).

4) Sort the labels by β_e^p such that the party with the highest β_e^p is the first label of each ethnicity.

The end result is a set of party-labels for each ethnic group. As for assigning ethnicity-labels to parties, we also compute a version of the labels based on a normalized over-representation measure $\gamma_e^p = \frac{s_e^p - s^p}{s^p}$

Dummy regressions   This algorithm predicts the party affiliation of ethnic groups by

1) running a set of regressions (one for every ethnicity e):

$$\mathbb{I}(\text{individual belongs to ethnicity } e)_i = F(\alpha_s, P^k; \boldsymbol{\theta}), \qquad (2)$$

where P^k is a dummy equal to one if individual i observed in survey(-year) s voted for party k and zero otherwise, α_s is a survey fixed effect, $\boldsymbol{\theta}$ is a vector of coefficients, and $F()$ is a function. The code implements this regression as either LPM or Probit.

2) Obtain the estimated $\hat{\theta}_e^k$ on P^k as well as its standard error, and compute the absolute value of the t-statistic as $t_e^k \equiv \frac{\hat{\theta}_e^k}{\widehat{se}(\hat{\theta}_e^k)}$.

3) Discard ethnicity×parties with $|\hat{\theta}_e^k| < t_{0.05,N-n_s-1}$, where $t_{0.05,N-n_s-1}$ is the critical value for a two-sided t-test from a distribution with $N - n_s - 1$ d.f. (number of individuals minus number of survey years minus 1; corresponds to significance at the 5% level).

4) Among the significant ethnicity×parties, retain only those with $\hat{\theta}_e^k > \overline{\theta}$ (the cutoff can be varied).

5) Sort the labels by $\hat{\theta}_e^k$ such that the party with the highest $\hat{\theta}_e^k$ is the first label of each ethnicity.

The end result is a set of party-labels for each ethnic group.

B.3.2 Comparing the algorithms

Our baseline results are based on the simple over-representation measure, direction (b). There are two reasons for choosing (b). The first is practical. Ideally, we would like to obtain the party affiliation of each individual in the DHS data based on their ethnicity. In going in direction (a), one ethnic group may be "the most" over-represented group for several parties, while other groups are the most over-represented group for no party. For those latter groups, we would then not have a label. The second reason is more conceptual. For direction (a), an ethnic group with a 5 percent population share may represent 7 percent of the voters for a certain party. At the same time, a party may capture a greater share of the voters from that ethnic group.

B.4 Verification of Ethnicity-Party Linkages

To further validate our matching algorithm, we gathered qualitative information from a number of sources. This sometimes consisted of finding existing academic literature which noted correspondences between a party and a certain ethnic group. More often, however, national and local newspapers provided suggestions as to which parties are supported by or linked to particular ethnicities. In some cases, such articles outright state that there is a connection, while in many other cases there is only a suggested relationship. In yet other cases, the match is based on a party leader hailing from a particular ethnic group. All reliable verifications are summarized in the table below. After the table, a key of party abbreviations by country and complete bibliography of sources is given.

Country	Party	Linkage Descriptions
Benin	FARD-A	*Linked Ethnicities:* Betamaribe *Sources:* Nicaise (2004)
	PSD	*Linked Ethnicities:* Adja *Sources:* Basedau and Stroh (2011), Somé (2009)
	RB	*Linked Ethnicities:* Fon *Sources:* "Soglo [of the RB] held sway in the central Abomey region, which is populated by fellow Fon." (Battle and Seely 2010, p. 50)
Burkina Faso	ADF-RDA	*Linked Ethnicities:* Bobo *Sources:* Party congress held in the homeland of the Bobo (Lefaso.net 2019)
	CDP	*Linked Ethnicities:* Mossi *Sources:* Basedau and Stroh (2011)
	UPC	*Linked Ethnicities:* Bissa *Sources:* Party leader is of Bissa descent (Voaafrique 2015)
Cameroon	CPDM	*Linked Ethnicities:* Beti *Sources:* Suggests that a prior CPDM leader favoured his co-ethnics in the Beti (Morse 2017)
	NUDP	*Linked Ethnicities:* Adamaoua, Peulh *Sources:* Notes that the region of the Adamaoua is a bastion of the NUDP (Awalson 2013) Notes that a leader of the NUDP is Peulh (Universalis.fr 1992)
	SDF	*Linked Ethnicities:* Grassfields, Bamileke *Sources:* "In the villages of the Cameroon grassfields…the dominant Social Democratic Front Party…has come to enjoy the status of a religion." (Chi 1998, p. 366) "Most of the [SDF's] approximately 60-per-cent Francophone membership belongs to the entrepreneurial Bamileke…" (Konings 2004, p. 372)

Côte d'Ivoire	RDR	*Linked Ethnicities:* Northern Mandé, Voltaic
		Sources: "Signficant positive correlations exist in the Northern Mandé and Voltaic votes for Ouattara [of the RDR]. (Bassett 2011, p. 476)
	UPDCI	*Linked Ethnicities:* Southern Mandé
		Sources: "the [UDPCI]. . . is primarily supported by followers from the general's [General Gueï, founder of the UDPCI] Yacouba ethnic group as well as other groupings of the Southern Mandés." (The World Bank 2008, p. 8)
Ghana	NDC	*Linked Ethnicities:* Ga-Dangme, Guan, Mole-Dagbani
		Sources: ". . . the fact that the Ga-Dangme constituencies have been in- dustrious, faithful and loyal to the progress of the National Democratic Congress and Ghana as a whole since its inception." (AdomOnline.com 2019)
		". . . these results suggest that districts with large percentages of Guan speakers lean heavily towards the NDC." (Fridy 2009, p. 12, footnote 24)
		". . . northern groups, especially the Mole-Dagbani, aligning with the NDC." (Hoffman and Long 2013, p. 131)
	NPP	*Linked Ethnicities:* Akan
		Sources: "What I am clearly and unabashedly driving at here is that the key operatives of the Akan-dominated [NPP]. . . " (Okoampa-Ahoofe 2018)
Kenya	NARC	*Linked Ethnicities:* Kamba
		Sources: "The various leaders of NARC, and in particular. . . Musyoka [of the Kamba]. . . appealed to their communities to turn out in large numbers and to support NARC." (Elischer 2013, p. 81-82)
	ODM	*Linked Ethnicities:* Luo
		Sources: ". . . [Odinga's, who ran on the ODM ticket in 2007] strongest following is among his Luo community in the south-western region of Nyanza. . . " (BBC 2017)
	URP	*Linked Ethnicities:* Kalenjin
		Sources: "The Jubilee Party, formed in September 2016, followed a merger between The National Alliance and the [URP] represent- ing. . . the Kalenjin." (Maina 2017)
	TNA	*Linked Ethnicities:* Kikuyu
		Sources: ". . . while the Kikuyus support President Uhuru Kenyatta [for- mer member of the National Alliance]." (Nyambura 2017)
Liberia	CDC	*Linked Ethnicities:* Grebo
		Sources: "For this election, Mr Tubman switched to the [CDC] party,. . . His mother came from the Grebo ethnic group. . . " (BBC 2011)
	NUDP	*Linked Ethnicities:* Gio
		Sources: "'The emphasis on ethnicity is declining,' Guannu said. 'But take the Johnson [of the National Union for Democratic Progress] case in Nimba. . . Where you see him receiving votes outside of Nimba, it is because his two groups, the Mano and Gio have sizable communities.'" (MacDougall 2011)

	UP	*Linked Ethnicities:* Lorma, Kpelle

UP

Linked Ethnicities: Lorma, Kpelle

Sources: "Opposing parties formed along tribal lines. . . for the Loma [*sic*], Kesselly's [UP]. . . " (Dennis and Dennis 2008, p. 111)

"With the selection of UP's vice standard bearer Emmanuel Nuquay, the 'Kpelle factor' seems to be working for Nuquay here." (Dodoo 2017)

Malawi **DPP**

Linked Ethnicities: Lomwe

Sources: "The four front-runners hail from three ethnic groups: Mutharika [of the DPP] is Lomwe. . . " (Yi Dionne and Dulani 2014)

MCP

Linked Ethnicities: Chewa

Sources: "Similarly, in the central region, voters have shown steadfast support for the MCP (former President of Malawi Banda's old party). During his reign, Banda (a Chewa) favored the Chewa. . . " (Ferree and Horowitz 2007, p. 2)

UDF

Linked Ethnicities: Yao

Sources: ". . . the [MCP] seemed always stronger and promissory in dynamic sense than its counterparts namely the [UDF], which though based in the populous Southern region, proved inter-temporally unstable owing to their strong association with particular areas which had competing ethnic groups themselves (the Yao. . .)" (Matchaya 2010, p. 221)

Mali **RPM**

Linked Ethnicities: Malinke

Sources: Basedau and Stroh (2011)

Mozambique **RENAMO**

Linked Ethnicities: Cindau

Sources: ". . . a Cindau, just like Afonso Dhlakama, the president of Renamo. . . " (Cahen 2015, p. 4)

Nigeria **ACN**

Linked Ethnicities: Yoruba

Sources: ". . . the attempt by Gov. Obi and Dora Akunyili to paint his party, the [ACN] as a Yoruba party." (Nigeria Newsday 2011)

ANPP

Linked Ethnicities: Hausa, Fulani

Sources: "With ANPP considered as a party predominantly occupied by the Hausa/Fulani. . . " (Azeez 2009, p. 4)

APC

Linked Ethnicities: Nupe, Tangale, Waja, Igbira

Sources: ". . . Nupe women. . . have endorsed President Muhammadu Buhari [of the APC]. . . " (Sardauna 2019)

". . . the majority of the Tangale/Waja had decided to turn in their votes for the APC. . . " (ThisDay 2018)

". . . whose strategic influence in the election delivered a bloc vote of Igbira people to Fayemi and the newly elected Chairman of the APC. . . " (Udeh 2018)

APGA

Linked Ethnicities: Ibo

Sources: "Emeka Odumegwu-Ojukwu, who declared a separatist Republic of Biafra for his south-eastern ethnic Ibo people in 1967, will run under the colours of the newly-registered [APGA]." (BBC 2002)

PDP

Linked Ethnicities: Jukun, Tarok, Igala, Igede, Esan/Ishan, Berom, Ikwere, Jarawa, Ijaw

Sources: "The apex Jukun socio-political organisation Jukuns Development-ment Association of Nigeria (JDAN) and other groups. . . have resolved to support the presidential candidate of the Peoples Democratic Party (PDP) Alhaji Atiku Abubakar. . . " (Aderibigbe 2018)

"The senator. . . Gen. Jeremiah Useni (rtd), has received the endorsement of his people, Tarok nation, to contest for the 2019 governorship election. . . on the platform of the Peoples Democratic Party (PDP)." (Adinoyi 2018)

"The Igala and Igede communities in Oyo state have expressed their support for the candidate of the [PDP]. . . " (Alimi 2019)

"Esan North East/Esan South East Fed Constituency is. . . regarded as the strong hold of PDP in Edo state. . . " (Austin 2018)

"'. . . you will see that the Berom today are predominantly APC and no longer PDP as it was in 2015.'" (Idegu 2018)

"A former Acting National Chairman of the [PDP], Prince Uche Secondus, yesterday emerged as the National Chairman of the party. . . The Ikwere-born politician made his acceptance speech. . . " (Nwachukwu 2017)

"[Senator Mohammed's of the PDP] background will give him an added advantage as the minority ethnic groups such as Jarawa. . . " (Omokuvie 2019)

"Pan Ijaw Socio-cultiral organization, Ijaw National Congress, (INC) on Wednesday, endorsed the Presidential candidate of the PDP. . . " (Vanguard 2019)

Sierra Leone	APC	*Linked Ethnicities:* Temne, Limba, Koranko, Loko

Sources: "Most Temnes. . . viewed the APC as their own party. . . " (Kandeh 1992, p. 91)

". . . the APC has been Temne or a loose coalition of northern ethnic groups (for example, Temne, Limba,. . . , Koranko. . .)" (Kandeh 1992, p. 92)

"Siaka Stevens, a Northern Limba and trade unionist, formed an opposition party, the [APC] that appealed to Northern interests. His party had been joined by. . . Loko. . . " (Refworld 2004)

	NDA	*Linked Ethnicities:* Fullah

Sources: "The NDA leader, Mr. Mohamed C. Bah hailed from the Fullah tribe. . . " (Bah 2015)

	SLPP	*Linked Ethnicities:* Creole, Mende, Mandingo

Sources: ". . . the SLPP was formed by the merger of three different semi political organizations. . . the Sierra Leone Organization Society (SOS), the Protectorate Educational and Progressive Union (PEPU) and the People's Party (PP) which was formed by Lamina Sankoh. . . the People's Party. . . was an association of Creole intellectuals." (Gorvie 2010)

". . . the Mende-dominated [SLPP]." (Kandeh 1992, p. 81)

"The Mandingo have played an important role in the politics of Sierra Leone. They have traditionally supported the [SLPP]. . . " (Taylor 2014, p. 128)

Uganda	FDC	*Linked Ethnicities:* Acholi

Sources: ". . . the main opposition [FDC] performed well among Acholi. . . " (Conroy-Krutz and Moehler 2014, p. 12)

	NRM	*Linked Ethnicities:* Karamoja, Nyankole

		Sources: "...the people of Karamoja who overwhelmingly voted for the ruling [NRM]." (Ariong 2016) "...save the Baganda-Nyankole alliance at the heart of the [NRM]..." (Roessler 2016)
	UPC	*Linked Ethnicities:* Langi *Sources:* "...while the UPC...remain[s] largely Langi..." (Conroy-Krutz and Moehler 2014, p. 12)
Zambia	MMD	*Linked Ethnicities:* Ngoni *Sources:* "Dr. Nevers Mumba, President of the opposition [MMD] and himself a Ngoni" (Hewitt and Phiri 2014, p. 4)
	PF	*Linked Ethnicities:* Bemba, Lamba, Ngumbo, Bisa, Lala *Sources:* "Support base [of Edgar Lungu of the PF]: Home area of Eastern province, the capital, Lusaka, and the Copperbelt plus the Bemba-speaking regions" (BBC 2016) "Senior Chief Kalilele of the Lamba speaking people...has praised President Edgar Lungu [of the PF] on the major projects government has embarked in his district." (Kombe 2018) "Chief Mulongwe of the Ngumbo speaking people said only under the leadership of President Edgar Chagwa Lungu [of the PF] has Zambia seen this kind of development being rolled out to all parts of the country..." (Mwebantu 2018) "He said Bembas should not be dragged into the Patriotic Front succession wrangles which he says are purely a Bisa internal struggle." (Zambian Eye 2013) "Chief Kabamba of the Lala Speaking people in Serenje District in Central Province has observed that the [PF] government has performed well in the first twenty two months of being in power." (Zambian Watchdog 2013)
	UPND	*Linked Ethnicities:* Tonga, Lozi, Kaonde, Luvale, Lumda, Chokwe, Mbunda, Tokoleya *Sources*: "Pro-UPND groups: Tonga, Lozi, Kaonde, Luvale, Lumda, Chokwe, Mbunda... and Tokoleya." (Seekings (2018), table 4, p. 11)

B.4.1 Party Name Abbreviations

Benin

- FARD-A: Front d'action pour le renouveau et le développement, FARD-Alafia (Action Front for Renewal and Development)

- PSD: Parti Social-Démocrate (Social Democratic Party)

- RB: Parti de la Renaissance du Bénin (Benin Rebirth Party)

Burkina Faso

- ADF-RDA: Alliance pour la Démocratie et la Fédération–Rassemblement Démocratique Africain (Alliance for Democracy and Federation–African Democratic Rally)

- CDP: Congrès pour la Démocratie et le Progrès (Congress for Democracy and Progress)

- UPC: Union pour le Progrès et le Changement (Union for Progress and Reform)

Cameroon

- CPDM: Cameroon People's Democratic Movement (Rassemblement démocratique du Peuple Camerounais)
- NUDP: National Union for Democracy and Progress (Union Nationale pour la Démocratie et le Progrès)
- SDF: Social Democratic Front (Front Social-Démocratique)

Côte d'Ivoire

- RDR: Rassemblement des Républicains (Rally of the Republicans)
- UPDCI: Union pour la démocratie et la paix en Côte d'Ivoire (Union for Democracy and Peace in Côte d'Ivoire)

Ghana

- NDC: National Democratic Congress
- NPP: New Patriotic Party

Kenya

- NARC: National Rainbow Coalition–Kenya
- ODM: Orange Democratic Movement (Party)
- TNA: The National Alliance
- URP: United Republican Party

Liberia

- CDC: Congress for Democratic Change
- NUDP: National Union for Democratic Progress
- UP: Unity Party

Malawi

- DPP: Democratic Progress Party
- MCP: Malawi Congress Party
- UDF: United Democratic Front

Mali

- RPM: Rassemblement pour le Mali (Rally for Mali)

Mozambique

- RENAMO: Resistência Nacional Moçambicana (Mozambican National Resistance)

Nigeria

- ACN: Action Congress of Nigeria
- ANPP: All Nigeria Peoples Party
- APC: All Progressives Congress
- APGA: All Progressives Grand Alliance
- PDP: People's Democratic Party

Sierra Leone

- APC: All People's Congress
- NDA: National Democratic Alliance

- SLPP: Sierra Leone People's Party

Uganda

- FDC: Forum for Democratic Change

- NRM: National Resistance Movement

- UPC: Uganda People's Congress

Zambia

- MMD: Movement for Multi-Party Democracy

- PF: Patriotic Front

- UPND: United Party for National Development

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B.5 *De Jure* Recognition of Traditional Leaders

Benin's constitution of 1990 makes no mention of tribal or traditional leaders. Tribal leaders do not appear to hold much sway in politics in general (Constitution of Benin 1956).

Burkinao Faso's constitution of 1991 was explicitly made to curtail the powers of traditional chieftains. Hence, the legislation prevents tribal chiefs from gaining legislative authority (Constitution of Burkina Faso 1991).

Cameroon's government, from 1990, recognizes the authority of traditional chiefs to govern at the local level, and to resolve local disputes so long as their rulings do not conflict with national law. Traditional courts still play a major role in domestic, property, and probate law. Tribal laws and customs are honored in the formal court system when not in conflict with national law. Traditional rulers receive stipends from the national government (Neba 1987).

None of the three constitutions of the **Ivory Coast** make any reference to traditional leaders. Ethnic leaders do not seem to have much influence beyond the local level. The constitution of 2016 has a section of "Traditional Chieftaincy" but relegates their role to "the valuing of habits and customs" and "non-judicial settlement of conflicts in villages" (Constitution of Cote d'Ivoire, 2000).

The offices and traditional realms of the nanas of **Ghana** are constitutionally protected by the republican constitution of the country. The chiefs serve as custodians of all traditional lands and the cultures of the traditional areas. They also serve as members of the Ghanaian National House of Chiefs. Politicans often defer to chieftains for advice because they are closer to the people. The National House of Chiefs is a congregation of regional chiefs (Tieleman 2019).

The only substantial role played by traditional leaders in **Kenya** is through the recognition of customary law in Kenya. The Judicature Act No. S3(2) outlines the applicability of customary law in Kenyan courts. The law states that all courts shall be guided by African customary law in civil cases. However, traditional leadership is not formally recognized beyond that (The Judicature Act 1977).

For **Liberia** the only mentions available are on the Encyclopedia Britannica: "There are also traditional courts in some communities; the ethnic groups are allowed, as far as possible, to govern themselves according to customary law" (Encyclopedia Britannica 2019).

Malawi has a large system of traditional courts that are used to mediate civil disputes and prosecute crimes. Between 1994 and 2011, Malawi's constitution recognized customary law, but no legislation to introduce such courts was made until 2011. As of 2017, a lack of funds has prevented the courts from being set up (Elias 1972).

The Constitution of **Mali** of 1992 makes no reference to traditional courts or their roles in legislation (Constitution of Mali 1992).

Article 118 of the constitution of **Mozambique** refers to the role of traditional authorities (Constitution of Mozambique 2007). In particular, the state acknowledged the legitimacy of traditional authority. The authorities appear to regularly mobilize these local authorities for communal and local issues (Buur et al. 2007, Meneses 2006).

In **Nigeria** local chiefs do not have a formal role in the democratic structure and are not mentioned in the current constitution (Constitution of Nigeria 1999). However, the

Nigeria chieftancy often have high ranking positions within the government (Abolarin 2017). There is a state council of traditional rulers and chiefs that acts as a liaison between the government and the populace. In addition, certain "chieftain laws" prevent sweeping legislation without the consensus of these local leaders.

In **Senegal** the village chiefs serve essentially the same role as mayors (Decree 72, Journal Officiel de la Republique du Senegal, 1996). They are appointed by native "councils" that operate at the village level. Overall, however, Senegal is on the lower end of the distribution in terms of the involvement of local leaders in legislation (Konold 2007).

Sierra Leone is divided into 149 chiefdoms, which are led by "paramount chiefs." Each chiefdom has ruling families which form the tribal authorities of each region that elect the paramount chiefs. (Reed and Robinson 2014). Typically, chiefs have the power to "raise taxes, control the judicial system, and allocate land, the most important resource in rural areas" (Acemoglu et al. 2013).

The traditional leaders of **Uganda** are mentioned in Chapter 16 of the Ugandan constitution of 1993 (Constitution of Uganda 1995). However, the same section also mentions: "a traditional leader or cultural leader shall not have or exercise any administrative, legislative or executive powers of Government or local government." The 2011 Institution of Traditional or Cultural Leaders Act (The Institution of Traditional or Cultural Leaders act 2011) also ratified this.

Part 13 of the 1996 constitution of **Zambia** (Constitution of Zambia 1996) lays out the roles of the house of chiefs. In particular, it mentions "There shall be a House of Chiefs for the Republic which shall be an advisory body to the Government on traditional, customary and any other matters referred to it by the President." The house of chiefs has the ability to submit resolutions on any bill in the national assembly. In addition, it has the ability to make recommendations to the national assembly and the president.

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B.6   Village Characteristics

B.6.1   Variable definitions

distance to cities is computed using GIS software as the geodesic distance from the DHS cluster coordinates to the closest city. Cities are from Natural Earth (2018). For how "cities" are defined, see
https://www.naturalearthdata.com/downloads/10m-cultural-vectors/10m-populated-places/.

distance to road is the geodesic distance from the DHS cluster coordinates to the closest point on a colonial road (in existence in 1960). Computed using GIS software. Data on colonial roads come from Jedwab and Storeygard (2018).

elevation is computed using GIS software from cell-level data on elevation at a 30 arc-second resolution from U.S. Geological Survey (1996) as the elevation value at the DHS cluster coordinates.

terrain ruggedness is computed using GIS software from cell-level data on elevation at a 30 arc-second resolution from U.S. Geological Survey (1996). Given the grid cell data, picture a 3×3 block of 9 cells and let $e_{r,c}$ be the elevation of the cell in row r, column c of the grid. Following Nunn and Puga (2012), we compute ruggedness as $\sqrt{\sum_{i=r-1}^{r+1} \sum_{i=c-1}^{c+1} (e_{i,j} - e_{r,c})^2}$, that is, the square root of the sum of all the squared differences in elevation between the middle cell and the surrounding 8 cells.

malaria stability is mean stability of malaria transmission in the constituency. The latter variable is computed, using GIS software, as the within-constituency zonal statistic of a raster provided by Kiszewski, Mellinger, Spielman, Malaney, Ehrlich, and Sachs (2004), which we resample to a resolution of 30 arc-seconds prior to computing the statistic.

agricultural suitability is mean agricultural suitability in the constituency. The latter variable is computed, using GIS software, as the within-constituency zonal statistic of a raster provided by Ramankutty, Foley, Norman, and McSweeney (2002), which we resample to a resolution of 30 arc-seconds prior to computing the statistic.

cropland share is computed using data from MODIS (Friedl, Sulla-Menashe, Tan, Schneider, Ramankutty, Sibley, and Huang (2010)). Data are available for all years from 2001 to 2012. We consider only those years and countries for which our election dataset records a parliamentary election in the previous year. This restricts our dataset to 14 countries – all but Mali – and 28 elections out of 32. MODIS cell-level data classify land cover according to five schemes. We use the first of these, the "IGBP global vegetation classification scheme". Starting from the raw data, we use GIS software to reclassify a cell as "1" if the original classification scheme classified it as "croplands" or "cropland/natural vegetation mosaic". Otherwise we reclassify the cell as "0". As a second step, we compute the within polygon cropland share as the mean zonal statistic of all cells within a polygon. We compute these shares for two sets of polygons. The DHS 1-km buffer cropland shares are mean zonal statistics inside circular polygons of 1 km radius centered on the DHS village coordinates. For further detail on the MODIS data, see https://lpdaac.usgs.gov/dataset_discovery/modis/modis_products_table/mcd12q1.

Table B.14: Summary Statistics of DHS Cluster/Village Characteristics

Variable	Mean	Std. Dev.	Min	Max	Observations
Latitude	0.651	10.971	-26.817	16.656	13457
Longitude	13.984	19.456	-17.498	41.877	13457
Distance from Improved Roads (km)	18.242	33.915	0	577.4	13457
Distance from Cities (km)	33.28	29.771	0.078	578.515	13457
Elevation (m)	588.217	573.283	-4	3224.667	13453
Terrain Ruggedness	56.652	76.701	0	1311.546	13457
Agricultural Suitability	0.406	0.215	0	0.987	12888
Malaria Suitability	14.487	10.434	0	37.609	13457
Share of Cropland	0.413	0.385	0	1	10650

Notes. The table reports the summary statistics of all village-level variables used in the empirical analysis. Unit of observation is a DHS cluster/village.