

WIDER Working Paper 2021/63

Ethnicity is not public service destiny

The political logic of service distribution in South Africa

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April 2021

Abstract: Millions of South Africans in thousands of demonstrations have protested the unequal allocation of public services. Despite the African National Congress’s promise to reduce the disparities generated by apartheid, the level of public services remains highly uneven across the country. Most studies of service provision in Africa assume that politicians will target their co-ethnics; other ‘diversity deficit’ literature hypothesizes that a high level of ethnic diversity undermines service provision from the start. Rather than assuming that ethnicity underlies service distribution in Africa, we argue that explanations of service provision should first examine how political institutions incentivize politicians to choose what services to distribute and how to distribute them. Even in an ethnicized polity, ethnic targeting may not be a politician’s best strategy. We seek to explain the variation in service levels across South African municipalities and advance three hypotheses: (1) Municipal councillors in more ethnically diverse municipalities will form policy coalitions that produce higher service levels. (2) Due to their extensive powers and the possibility of being residual claimants to municipality resources, South African mayors will decrease services when they enjoy electoral safety. (3) The strategic interaction between councillors and their mayor helps to account for the variation in service provision across South Africa’s municipalities. We test our hypotheses with data from more than 1.37 million households and aggregated municipality-level measures and find strong support for all three hypotheses. Political institutions—not ethnic demography—drive policy choices and service outcomes.

Key words: public services, ethnicity, Africa, distributive politics, development policy, South Africa

JEL classification: D72, H41, O55, Z18

Acknowledgements: The authors would like to acknowledge the leadership and contributions of Professor Robert H. Bates to the study of the political economy of development. We thank Robert H. Bates, Alexander Lee, Rachel Gisselquist, and the members of the University of California San Diego’s Centre for the Study of African Political Economy for their ideas and comments on this research.

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This study is published within the UNU-WIDER project [Addressing group-based inequalities](#).

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ISSN 1798-7237 ISBN 978-92-9267-001-6

<https://doi.org/10.35188/UNU-WIDER/2021/001-6>

Typescript prepared by Joseph Laredo.

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The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland, Sweden, and the United Kingdom as well as earmarked contributions for specific projects from a variety of donors.

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The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

1 Introduction

Despite the African National Congress's promise to reduce the inequalities generated by apartheid, the level of public services remains highly uneven across the country. Millions of South Africans in thousands of demonstrations have protested the unequal allocation of public services; dozens have died (Vally 2009).¹ South Africa's constitution makes elected local municipal governments responsible for providing many basic public services, including water, sanitation, waste removal, and electricity (Alexander 2010; Booysen 2007, 2009; Habib 2010; Marais et al. 2008). The country's citizens, 'officially' comprising four ethnic groups and speaking 11 languages, know this and often direct their anger and frustration directly at their mayors and municipal councillors (Atkinson 2007; Siddle 2011). However, given federal requirements that local government provide these public services, that constituents actively demand them, and that democratic elections reward incumbents for distributing them, why would municipal councillors choose to under-provide them?

Two main research agendas in the social sciences seek to explain the relationship between ethnicity and public service provision in Africa. One, the 'diversity deficit' approach, borrows simple models from collective action theory to argue that increasing the number of ethnic groups involved in decision-making undermines the likelihood of policy agreement. This leads to either few or low-quality services delivered (Alesina et al. 1997; Ashraf and Galor 2013; Easterly et al. 2006). Applied to the South African case, the diversity deficit approach would expect the relationship between measures of ethnic diversity and service provision to be negative. As detailed below, we find that municipalities with higher levels of ethnic heterogeneity actually produce² *more* public services. At first glance, then, the simple model of inevitable conflict between ethnic groups does not hold in South Africa.

Another extensive set of studies explores the logic of ethnic favouritism in distributive politics. In this view, individuals competing for political power create patronage systems by targeting co-ethnics with services in exchange for their support, especially during elections (Ejdemyr et al. 2018; Kramon 2013; Wantchekon 2003). Much of this work assumes that in countries where ethnicity is politically salient, politicians will inevitably distribute services on the basis of an ethnic logic. Such an approach might predict that increasing the share of mayors' ethnicity would improve service provision. We find no such relationship in South Africa.

We believe that these two main approaches undervalue how institutions shape politicians' choices regarding public service distribution. Studies hypothesizing a diversity deficit exclude any role for political institutions: this model assumes that individuals have equal political power and hold ethnically determined preferences that lead to identical strategies. Studies of ethnic favouritism do include a role for political institutions—elections (usually at the presidential level)—as the main driver of ethnic service targeting. However, like the diversity deficit approach, this work often assumes that politicians have identical preferences and, whenever able, employ ethnic strategies.

¹ Estimates of service delivery protests vary. Alexander et al. (2016) count about 67,000 service delivery protests from 1997 to 2013: the South African police claim that more than 14,000 protests of all types occurred from 2014 to 2015. Municipal IQ, a specialized local government organization, has recorded between 100 and 200 protests annually.

² For this paper, we use the terms 'distribution' and 'provision' of public services interchangeably. For a detailed discussion of their differences, see Ostrom (2005).

The strategy of targeting co-ethnics can be efficacious only under certain conditions. Politicians wishing to target co-ethnics must have some public authority over distributing services and believe that their constituents will understand and reward them at the ballot box for their provision. Political institutions lie at the heart of these conditions: institutional rules establish which part of government has the legislative and executive power over services. They also establish the process by which the actors empowered to deliver services are elected. These institutions therefore determine whether ethnicity is translated into decisions about service provision. Failing to account for how institutions affect politicians' choices can lead to spurious associations. For example, in their examination of four services across six African countries, Kramon and Posner (2016) find a significant relationship between a president's ethnicity and higher services less than one third of the time.

Rather than begin with an assumption that ethnicity is always a central part of politicians' decisions, we focus on how political institutions affect a politician's choices about service distribution (e.g. Bates 1983). In particular, we consider how the specific rules of South African municipal governance and elections affect the services provided by the municipalities themselves.

Our argument has three parts. First, we examine the general effect of elections on municipal councillor behaviour. Following Gibson and Hoffman (2013), we present and test a model demonstrating how elections can motivate more ethnically heterogeneous councils to produce more services. South Africa's central government devolves to municipal governments the responsibility for many services, especially connections to sewerage, waste removal, piped water, and electricity. Citizens know this. Council rules require a majority of councillors to select a mayor and to pass policy. Councillors therefore benefit from constructing coalitions, luring new members by including at least some of their policy preferences in future legislation. Assuming that the ethnic diversity of a municipality is reflected by its councillors, we hypothesize that the more ethnically heterogeneous a South African municipality's population, the more services it will provide.

Second, we examine how institutions create incentives for mayors that are different from those of their fellow councillors. Elected by the public as a councillor first, they are then chosen by councillors to be mayor. This position offers a considerable array of powers over executive and legislative processes, powers that allow mayors to create and pass legislation even if it undermines the policy preferences of a council majority. These powers permit mayors to target voters with public services in order to win re-election, but they also allow mayors to direct resources to themselves and their followers for personal gain. We argue that mayors' electoral safety helps predict the level of services they provide. Mayors enjoying strong electoral support will have less incentive to provide services in the hope of procuring votes (Besley and Burgess 2002; Corstange 2018; Díaz-Cayeros and Magaloni 2009). Thus, as the electoral security of a mayor increases, the level of services the municipality provides will decrease.

Finally, building from our previous two steps, we present our central and novel argument that the variation of service provision across South African municipalities results from the interaction of mayors' and councillors' strategies. While ethnic diversity is associated with increased levels of the services a legislature produces for its citizens (Hypothesis 1) and a mayor's electoral security can have the opposite effect (Hypothesis 2), it is the interaction of these two factors that largely determines the level of a municipality's services (Hypothesis 3).

We test our hypotheses on four different public services: connections to sewerage, waste removal, piped water, and electricity. Citizens can easily tie the actions of their municipal government to the first three: sewerage, waste removal, and piped water. Physical improvements can be readily seen, and municipalities have straightforward authority to create distributional policy. Electricity, on the other hand, is different. While municipalities are given the mandate to distribute it, Eskom—South

Africa's national utility—disputes municipality authority. As a result, the number of actors involved in its provision varies across municipalities. In some municipalities, Eskom supplies electricity directly to households. In others, the municipal government has a hand in its delivery. In still others, three or more entities coordinate its provision. In contrast to sewerage connections, waste removal, and piped water, not all councils or their mayors can affect the delivery of electricity, and citizens cannot directly tie this service to municipal politicians. This difference gives us the opportunity to evaluate our hypotheses using electricity as a placebo.

We find evidence to support our three hypotheses. Increasing levels of a municipality's ethnic heterogeneity has a strong, robust positive effect on levels of sewerage connections and waste removal. The coefficient for piped water is also in the expected positive direction but not statistically significant. We also find highly significant negative effects for a mayor's electoral safety—measured as margin of victory—on the levels of all three services. Finally, our tests offer evidence for the central argument in this paper, that the interaction of councillor and mayor strategies determines service levels. The interaction of a mayor's electoral safety and a municipality's ethnic heterogeneity is negative and significant for sewerage connections and piped water. Waste removal also has a negative coefficient, as expected, but it does not reach statistical significance. Offering additional credibility to our arguments, we find no significant relationship between levels of electricity and ethnic heterogeneity, and the association between a mayor's electoral security and electricity is reversed, becoming positive.

We also consider a number of alternative explanations, including the potentially high correlation between diversity and electoral security and the influence of centre–local government relationships, defined by either the co-partisanship or co-ethnicity of the mayor and the president, and find no evidence for either. To explore the possibility that our results might be due to factors related to time, we also conduct a test analogous to a triple-differences estimation, using diversity, electoral security, and service levels at the time of the previous election (2011). The results of this test also support our intuition: we observe greater differences in levels of services in the presence of greater diversity and lower electoral security.

Our study makes important contributions to the study of the strategic distribution of services. First, we show that political institutions—in this case, electoral and legislative rules at the municipal level—generate conditional incentives to form ethnic coalitions for service distribution. Further, we show that these institutions have dissimilar effects on different kinds of politicians. In some situations, municipal councillors may follow ethnic strategies while mayors may not. Second, unlike the vast majority of current research, we find evidence that ethnic heterogeneity does not undermine service provision. Indeed, we show that high levels of diversity lead to higher levels of services. Demography alone cannot explain policy outcomes.

Third, we add to the growing literature that seeks to place the choices of politicians at the centre of explanations of service provision. Fourth, we contribute to the growing number of studies using subnational panel data to test their theories about the provision of services, avoiding the problems associated with cross-national research designs (Burgess et al. 2015; Kadt and Lieberman 2017; cf. Pepinsky 2019). Finally, our study also contributes to the small but growing literature that considers how the logistical and political demands of each specific government service affect its distribution (e.g. Kramon and Posner 2016; Lee 2018).

Section 2 reviews two important literatures that seek to explain the provision of public services, especially in Africa. Section 3 discusses our approach. Section 4 outlines the structure of public service provision in South Africa. Section 5 discusses the data and our empirical strategy. Section 6 presents our results, Section 7 assesses possible alternative explanations for these results, and Section 8 concludes.

2 Studies of public service provision

A substantial set of studies hypothesizes that social diversity—usually measured as ethnic heterogeneity—leads to a wide variety of poor policy outcomes, including the under-provision of public goods (Easterly and Levine 1997), economic growth (Alesina et al. 1997; Ashraf and Galor 2013; Easterly et al. 2006; Eris 2010; Montalvo and Reynal-Querol 2005; Okediji 2011), public health (Lieberman 2009; Tequame 2012), the prevalence of conflict (Michalopoulos 2012; Miguel 2004), and good governance (Aghion et al. 2005; Alesina and Zhuravskaya 2011; Alesina et al. 1999; Alesina et al. 2001; Alesina et al. 2003; Baldwin and Huber 2010; Desmet et al. 2009; Easterly et al. 2006; Kaniovski and Mueller 2006; Lieberman and McClendon 2013; Mauro 1995). The findings of this ‘diversity deficit’ literature are so well accepted that Banerjee et al. (2005) claim this relationship to be ‘one of the most powerful hypotheses in political economy’.

While this approach forces researchers to contend with the idea that demographic differences can lead to undesirable policy consequences, a growing set of studies challenges the theoretical and methodological foundations of the diversity deficit enterprise. Some studies point to the sensitivity of the approach’s cross-country research designs (Bharathi et al. 2020; Gao 2016; Gerring et al. 2015; Gisselquist et al. 2016; Lee 2018),³ while others find little or no relationship between diversity and public goods at the national level, instead detecting a *positive* relationship within countries (Bharathi et al. 2020; Gao 2016; Gerring et al. 2015; Gibson and Hoffman 2013; Gisselquist et al. 2016; Lee 2018). One reason for this could be that most governments have decentralized some public service provision to local governments and in most settings combinations of provincial, district, and local governments co-finance public services (Bharathi et al. 2020; Lee et al. 2016). Some recent empirical work doubts the basic assumptions of the diversity deficit: co-ethnics may not be more pro-social with each other than non-co-ethnics (e.g. Berge et al. 2015) nor possess significantly different preferences (e.g. Habyarimana et al. 2007).

Perhaps the most important of these challenges is that the diversity deficit hypothesis is built from a theoretical foundation ill-suited to explanations of electoral politics. The basic model relies on simple collective action theory, which does not reflect the reality of policy-making. Its proponents argue that reaching collective agreement is difficult, not only because of free rider problems (Olson 1965), but also on account of the bargaining costs incurred as individuals or groups seek to overcome the differences between their preferred outcomes (Buchanan and Tullock 1965). As the number of preferences among participants increases, so does the cost of reaching agreement. If ethnic groups have diverse preferences (Alesina and La Ferrara 2005; Alesina et al. 1999; Lieberman and McClendon 2013), the cost of reaching an agreement increases with the number of ethnicities represented. At some point, those costs will exceed the benefits and the group will be unable to reach a collective decision.

While collective action theory is well suited to explaining the *private* provision of public goods, it is less useful for explaining the *public* provision of public goods. The distinction between the private and public provision of goods is critical. Politicians and private citizens operate in contexts with vastly different resources, institutional constraints, and incentives. Individuals in a private setting seek to act collectively to reach greater levels of social welfare, and co-ethnicity may attenuate the

³ For instance, in Alesina et al. (2003)—cited by nearly every study hypothesizing the diversity deficit, the authors note the sensitivity of their findings and report that fractionalization has no significant effect on their suite of government outputs after controlling for common factors like per capita GDP and latitude. They state: ‘The bottom line is that the evaluation of the effect of ethnic fragmentation on quality of government depends on whether one believes that latitude belongs in the regression or not.’

free rider problem. Most political scientists assume that politicians, on the other hand, provide public goods to persuade enough voters to put them in office. They respond to the incentives generated by political institutions, especially electoral systems. They confront constituencies defined along multiple social and economic axes. They can access a myriad of government institutions that private citizens cannot—including taxation, administrative machinery, and even coercion—many of which were explicitly designed to overcome collective action problems.

Scholars often conflate these contexts: nearly all cross-national studies of diversity and policy outcomes published since 2005 cite Habyarimana et al. (2007) and Miguel and Gugerty (2005) as theoretical foundations for their own work. But Habyarimana et al. (2007)'s work featured 300 Ugandans playing economic games, and Miguel and Gugerty's (2005) research focuses on *voluntary contributions* to schools. Governments are not related to either case, and yet the diversity deficit literature continues to link them to explanations of national-level outcomes. By excluding the pivotal roles of political institutions, the diversity deficit approach lets ethnic demography determine a country's provision of public goods.⁴ It also leads such work away from exploring the strategies of the individuals actually responsible for service distribution—politicians.

The other extensive set of studies exploring the role of ethnicity and service distribution focuses on the creation of ethnically based patronage systems built by individuals competing for political power (Bates 1983; Ejdemyr et al. 2018; Joseph 1987; Kramon 2013; Wantchekon 2003). Since most Sub-Saharan countries have weakly institutionalized party systems, targeting co-ethnics with services can be an efficient way to mobilize followers (Bates 1983; Burgess et al. 2015; Kramon 2013). This work generally assumes that in countries where ethnicity is politically salient, politicians will inevitably distribute services on the basis of an ethnic logic. The logic of ethnic distribution builds from Dixit and Londregan (1996: 1134)'s argument that politicians have a better understanding of some voters than others and that this understanding can translate 'into greater efficiency in the allocation of particularistic benefits'. This relative efficiency creates a 'core' constituency (Cox and McCubbins 1986), to which politicians conveniently appeal when programmatic differences between parties are small, as is often the case in Africa (Posner 2005). Some experimental evidence from South Africa attests that ethnic favouritism offers a plausible model for service distribution there (McClendon 2016).

Many other empirical studies provide evidence for the ethnic targeting of services. The co-ethnics of African political leaders have better health and educational outcomes (Franck and Rainer 2012), superior infrastructure (Burgess et al. 2015), and preferential access to foreign aid (Briggs 2014; Jablonski 2014). Carlson (2015) finds that Ugandan voters disproportionately reward provision of services by co-ethnic politicians. Wantchekon (2003) finds clientelism easier and more appealing between co-ethnics. Kramon (2013) finds that vote-buying in Kenya is more effective when politicians target co-ethnics. Adida et al. (2016) show that voters only reward good legislative performance by co-ethnic candidates. Other research suggests that voters are not straightforwardly motivated by service provision at all (de Kadt and Lieberman 2018).

But not all investigations of ethnic patronage find such a pattern. Franck and Rainer (2012) find strong evidence of ethnic favouritism in only 6 of the 18 African countries they study. Kramon and Posner (2016) demonstrate variation in ethnic favouritism both across African countries and between different types of distributive goods within countries. Kasara (2007) finds that presidents tax co-ethnic cash crop farmers at higher rates than non-co-ethnics. Growing evidence suggests

⁴ Alesina et al. (2016) exemplifies the exclusion of political intuitions in explanations of service provision. In this 177-page review of the research on social diversity and public goods, the words 'policy', 'politics', 'politician', 'election', and 'legislature' never occur.

that individual vote choices are not deterministically set by ethnic identity; both identity and performance matter for individual vote choice (Bratton et al. 2012; Ferree 2006; Long and Gibson 2015; Posner and Simon 2002; Rhee 2020).

The ethnic distribution approach shares many of the diversity deficit’s less realistic assumptions. Much of the literature assumes that distributing goods along ethnic networks is always a preferred strategy to winning elections. It assumes that national-level politicians use central government to provide services and tie these to national-level elections.

Three recent studies resonate with our work here. De Kadt and Lieberman (2017) explore political accountability by testing the effect of service provision on ANC vote share at the municipal level. Using a difference-in-differences design, they find that contra the accountability hypothesis, improvements in service provision can *decrease* the vote share for African National Congress (ANC) party incumbents. The authors explain that their results may reflect voters’ perception of a high level of corruption or changing expectations about service levels. Farole (2020) also investigates electoral accountability and services in South Africa but focuses on the main opposition party in South Africa, the Democratic Alliance (DA). Unlike de Kadt and Lieberman, Farole finds that increased service delivery does help the DA’s electoral support, even in adjacent areas. Finally, Wegner (2018) argues that, even though the country can be considered a one-party system, the ANC still seems to be responsive to voters. This study uses several indicators of councillor performance and finds that the renomination of councillors is correlated with performance in municipalities with high electoral competition.

While building on this work, our study includes important differences. First, our models focus on the individual politician, rather than the party. We are interested in exploring the choices politicians make given the incentives generated by electoral and legislative institutions. While we do explore the possibility of party influence, here we are making a more general, individual-level argument. By focusing on the reverse causal mechanism—that is, from electoral incentives to service delivery and not the other way around—we show who is more likely to engage in service delivery in the first place. Thus we use a politician’s margin of victory, rather than party vote share, to capture the idea of electoral security (upon which we elaborate below). Second, focusing on the politicians leads naturally to examining whether and how institutions can present different sets of incentives to different types of politician—in our case municipal councillors and mayors—even if they are at the same level of government (e.g. Dropp and Peskowitz 2012; Mayhew 1974; Shepsle et al. 2009). Finally, our approach allows a clear way to test the outcomes produced by the interaction of different politicians’ choices.

3 Our approach

Rather than assume that an ethnic logic undergirds the provision of all benefits, we focus in detail on how institutions affect politicians’ choices about service distribution (Bates 1983). In particular, we explore three fundamental institutions—public authority, legislative and executive power, and elections—and argue that these institutions explain variation in South African municipal service provision.

We begin with the assumption that politicians want to hold office. They will choose strategies they believe will achieve this end. Rather than assuming that ethnicity is a necessary part of their strategy, we suggest that politicians will favour their co-ethnics only when doing so results in increasing their power. In the context of elections, this means winning. Further, politicians enjoy

different sets of powers when they hold different types of office. These powers give office-holders different sets of choices to appeal to constituents for re-election.

The strategy of targeting co-ethnics with public services can be efficacious only under certain conditions. Even if a politician is a member of their constituency's largest ethnic group, they will target co-ethnics only when (1) they have the authority and finances to distribute the service, (2) citizens associate that distribution with the politicians, and (3) citizens vote on the basis of this linkage (Lizzeri and Persico 2001; Milesi-Ferretti et al. 2002; Persson et al. 2000). Political institutions lie at the heart of these conditions: governments establish rules about which of their units possess the public authority to distribute services. They structure elections. They confer different powers on different kinds of politician. In sum, they determine whether or not ethnicity is translated into decisions about service provision. Few studies explore these conditions in their analyses of ethnic distribution, which can lead to spurious associations between ethnicity and services (Franck and Rainer 2012; Kramon and Posner 2013).

A close look at the institutions of South Africa (upon which we elaborate in the next section) leads us to three hypotheses. First, we expect that, when comparing the subnational units under electoral democracies, greater levels of diversity are associated with *higher* public service provision. Second, we argue that because mayors have different incentives than their fellow councillors, the municipality will provide fewer services when mayors are electorally safer. Third, we hypothesize that the interaction between an ethnically heterogeneous council's propensity to provide higher levels of services and a mayor's desire to under-provide services when electorally safer explains the variation in service provision across South African municipalities.

To explain how higher levels of ethnic diversity lead to higher service provision, we follow the theoretical work of Rosenbluth and Baum (2006) and Gibson and Hoffman (2013), which addresses the effect of legislative coalitions on services.

Following their models, we denote the number of groups in a given municipality with n , and the number of groups in the winning coalition with k , where $k < n$. The coalition holds together because it creates net benefits for its members. Adopting a simple assumption that municipalities prefer balanced budgets (e.g. Alesina et al. 1999), we set the total expenditure for public services, e , to be equal to total taxation, t . Thus, expenditure per group, e/n , equals taxation per group, t/n . The coalition can create net benefits for k , and hold together, since k can tax n , but only needs to provide benefits to k . Each group pays t/n in taxes and those in the coalition receive e/k benefits, with $e/k > t/n$ since $k < n$. Net benefits to members of the coalition equal $e/k - t/n$. As k increases, e/k falls as long as t remains constant. In order for net benefits to remain constant as k rises, so must t , and also e . This model thus leads to the outcome where increasing levels of ethnic heterogeneity lead to higher levels of service provision.

We extend this model to include the effect of a mayor's electoral security on service provision.

Recall that the net benefit to a given group is defined as $e/k - t/n$. By providing benefits to groups, politicians derive utility in terms of electoral support. However, the marginal benefit of having one additional group's support decreases as politicians enjoy greater levels of political resources. In other words, the utility derived from providing service e is no longer equal to the cost, t . We can denote with δ the discount rates on the expenditure for public services, such that e equals δt , where $0 \leq \delta \leq 1$. Then, considering the revised net benefits, $\delta t/k - t/n$, we see that a decrease in δ would require a decrease in t and/or k . In other words, if the mayor enjoys greater levels of electoral security, we can expect there to be, on average, lower levels of public service provision.

This model also implies that the discounting derived from electoral security conditions the impact of diversity on public service provision. In the revised net benefits, $\delta t/k - t/n$, the effect of any change in k is undercut by change in δ . District-level demographic structures matter less to politicians making decisions about services when they have greater electoral support. In contrast, where local politicians face fiercer competition, they must attempt to build coalitions. When politicians have only limited political support, they need to maintain broader appeal to wider groups in order to increase their chances of re-election. In other words, while an increase in k will lead to an increase in e , holding others constant, a simultaneous decrease in δ will prevent the positive effects of diversity from materializing.

From these models, we derive our three hypotheses:

- H1 – Greater levels of diversity are associated with a legislature’s higher levels of public service provision.*
- H2 – Greater electoral security of a mayor is associated with lower levels of public service provision.*
- H3 – The positive effect of diversity on public service provision is conditional upon the level of electoral security that the local municipality mayor enjoys.*

4 Public service provision in South Africa

After the 1995 national elections, the ANC’s government embarked on an ambitious plan to redraw local government boundaries (RSA 1998, 2004) and to bequeath to municipalities new and important political and economic rights and responsibilities (RSA 1998, 2004). The result was a newly empowered set of 284 municipalities containing 3,774 wards.

Citizens chose their municipal councillors through elections using a mixed-member system: individuals vote for a ward councillor under single-member plurality rules and at-large councillors under party-list proportional representation rules. All municipalities have a council, and all councils have a mayor; the mayor acts as the head of the council. About two-thirds of councils have an executive mayor, elected by the council. In the other third, the council votes for members of an executive committee who, in turn, elect a mayor as the chairperson of the committee.

Mayors enjoy an extensive set of legislative and executive powers.⁵ Most councils have an executive mayoral system, whereby mayors appoint an inner core of advisors known as the mayoral or executive committee, which oversees the work of municipal managers. The mayor also appoints members of committees—known as Section 80 committees—who are responsible for the oversight of and policy recommendations about specific municipality activities, such as finance and public safety. Section 80 committees report directly to the mayor. Further, since the Constitution designates the council as the executive, and the mayor dominates the workings of the council, mayors have tremendous influence over decisions regarding the allocation of resources, jobs, and power. For example, mayors not only have the power to appoint the municipality’s salaried managers but can also create a performance agreement with them (de Visser 2009). In sum, mayors occupy crucial political positions at the local level in South Africa, reflected in the fact that between 2011 and 2016 (the period of our study), three leading South African newspapers⁶ printed more than seven thousand articles about mayors around the country.

⁵ The functions of the executive mayor can be found in section 56 of the Municipal Structures Act.

⁶ *The Cape Times*, *The Star*, and *The Sowetan*.

The ANC government wants local governments to lead the country's 'developmental crusade' to rectify the biased public investments made by the apartheid regime. To this end, the country's Constitution mandates that municipal councils focus on an extensive range of objectives, including providing democratic and accountable government for local communities, promoting social and economic development, encouraging a safe and healthy environment and, most important for this study, ensuring the provision of services to communities.⁷ More specifically, municipalities are given the duty to provide sewerage connections, waste removal, and piped water to their constituents.

In principle, municipal councils are expected to fund their public services using the revenue they garner from property taxes and fees levied on the service.⁸ In reality, this almost never occurs, especially in poorer regions, and most municipal government budgets depend on the grants they receive from the national government, especially the unconditional Equitable Shares Grant (1998) and the conditional Municipal Infrastructure Grant (2006).

Extensive opportunities exist for mayors to enrich themselves, their family, and their supporters. According to the South African Auditor-General's report on municipal activities in 2014–15 (RSA 2014–15), few municipalities met the management standards required by law. Among other things, the report found that for the year 2014–15 only 19 per cent of municipalities received a completely clean ('unqualified') audit report; 80 per cent of contracts reviewed had 'material findings' of problems, with around half of all contracts awarded to councillors, staff, and their close family members; nearly three-quarters of municipalities had some form of unauthorized expenditure, the monetary amount doubling over the previous five years.

The Auditor-General's office also expressed frustration with the lack of action taken by municipal leaders to investigate or prosecute wrongdoers. Less than half of the municipalities made any attempt to investigate previously uncovered unauthorized, irregular, fruitless, and wasteful expenditure. The Auditor-General's office complained that while municipalities 'continue to report to management indicators of possible fraud or improper conduct [it is] to little avail as the cases continue to increase and in most instances are not investigated' (RSA 2014–15: 18). It also noted specifically the 'unwillingness of the council to scrutinise the mayors' use of public resources' (RSA 2014–15: 64).

Below we provide more detail and context for the main public services that South Africa's central government expects municipalities to provide—piped water, sewerage connections, and waste removal—and the provision of electricity.

4.1 Piped water

To promote cost recovery for water provision, the national government required a rising block tariff system that divided water consumption into levels (blocks) and applied progressively higher prices for each block. These charges soon became a focal point for residents' service delivery protests. The national government created a number of policies seeking to address these complaints (and reduce protests). In 2001 it established the Free Basic Water Policy, which requires municipalities to provide 25 litres of potable water per person per day.⁹ The 2004 Municipal

⁷ The powers and functions of local government are found in Schedules 4B and 5B of the Constitution of South Africa (Act 106 of 1996) and include the provision of connected sewerage, piped water, and waste removal.

⁸ Section 229 of the Constitution, Act 108, 1996.

⁹ The ANC promised free basic amounts of water, electricity, and other services immediately before the 2000 national elections.

Property Rates Act (RSA 2004) mandates municipalities to take account of poor residents when charging for water and other public services.¹⁰ These two policies led most municipalities to supply some level of free water to all (or almost all) of their residents. They also led to water deficits in many places, which municipalities try to fill by buying additional water using their equitable share grants.

Citizens' grievances about water include more than its cost. Residents also complain about the quality of water, its intermittent supply, corruption in water contracting, poor maintenance and operation of water systems, and lack of monitoring of private water services.¹¹ As recently as 2016, over 700,000 South African households obtained their water from 'unsafe' sources (rivers, streams, springs, or wells (RSA 2017)). South Africans clearly blame municipalities for failing to provide adequate water. Covering one set of service protests, the *New York Times* noted that protesters directed their ire 'at municipal officials they consider uncaring, incompetent and corrupt'.¹²

4.2 Sewerage connection

The ANC adopted a policy of providing free sanitation to schools in 2003, to clinics in 2007, and countrywide in 2010. But, as with water delivery, sanitation services fell far short of policy targets. In 2008, the government did not even attempt to conduct the detailed assessments required by policy of more than half of the country's 852 municipal treatment plants because their overall operations were 'poor to non-functional'.¹³ Untreated or insufficiently treated sewerage led to over 6,000 cases of cholera in 2009. The year before the 2011 municipal elections, more than 800,000 households either had no toilet or used 'bucket toilets'—which are a particularly sensitive subject in South Africa since the bucket toilet was the only access to sanitation for millions of citizens during apartheid.¹⁴

4.3 Waste removal

Surveys from 2003 to 2010 show that citizens criticized waste removal more than any other public service, with complaints increasing over the same period. As with water and sanitation, the Constitution confers the responsibility of waste removal on municipalities (Act 108, Section 152(1), Republic of South Africa, 1996); National Environmental Management: Waste Act, 2008). While municipalities were removing waste from about 60 per cent of South African households in 2010, that proportion was virtually unchanged from 2002 (General Household Survey 2010). Half of households had waste removed less than once a week, and half a million South Africans dumped their waste anywhere. South African media have relentlessly covered the municipalities' failure in this service as well.

4.4 Electricity

The national electricity company, Eskom, and municipalities share responsibility for distributing electricity to users. Seventy-five per cent of municipalities buy electricity from Eskom and resell it

¹⁰ The Municipal Property Rates Act (Act 6, 2004: Local Government Municipal Property Rates Act) mandates municipalities to provide relief for the poor by lowering tariffs on property rates, water, electricity, sanitation, and refuse collection.

¹¹ Water Services Commission, February 2016.

¹² *New York Times*, 'South Africa's Poor Renew a Tradition of Protest', Barry Bearak, 9 June 2009.

¹³ South Africa Department of Water Affairs, 'Green Drop Report 2009'.

¹⁴ 'How Poo Became a Political Issue', Steven Robbins, 3 July 2013.

to their citizens. In some municipalities, more than one entity can provide electricity, and each could have a different tariff schedule. Unlike the provision of water, sewerage, and waste removal, the multi-partner supply of electricity ‘creates confusion among consumers about whom they should hold accountable for the delivery of electricity services’ (Grant 2015).

The first three services—sanitation, waste removal, and piped water—fit our model well in the sense that municipalities have distributional power and citizens assess them on their use of it. In the cases of electricity, however, federal intervention removes some mayoral discretion from distribution, and the number of entities involved in providing electricity does not make it easy for a voter to determine who is accountable. This distinction is crucial: if demographics lead deterministically to collective action problems that frustrate production, we should observe a negative diversity-to-service relationship in all four services. If, on the other hand, distribution responds to the specific electoral incentives of mayors, results on the target services should diverge. Neither diversity nor local electoral security should have a relationship with services provided by the federal government, as politicians do not construct their coalitions within municipalities. On the other hand, local electoral security should correlate negatively with provision where services distribution is completely under local control.

5 Data and empirical strategy

5.1 Data on public service provision

We use the 2016 South African Community Survey from Statistics South Africa (formerly the Census Bureau) to measure public service provision. The survey offers fine-grained dwelling-unit-level census data with more than 1.37 million observations. We combine those data with aggregate municipality-level data provided by Statistics South Africa, and we calculate the percentage of households that (1) are connected to sewerage; (2) get weekly waste removal; (3) have access to piped water inside their dwelling; and (4) are connected to electricity by the municipality. Local municipalities provide and manage the first three public services at their discretion, as discussed earlier, which provides a unique opportunity to test our theory on how the combination of and interaction between ethnic fractionalization and measures of a mayor’s electoral security affect local-level public service provision. The national utility Eskom’s role in electricity provision provides an opportunity to check the robustness of our results: the interaction between diversity and electoral security should not affect electricity provision.

5.2 Key independent variables: data on diversity and electoral security

Our main independent variables of interest are diversity and electoral security. To measure electoral security, we calculate the margin of victory of the winning party at the 2011 municipal elections using the information reported by the Electoral Council of South Africa. We calculate the winning margin by pooling the raw number of votes cast at the ward level for individual councillors, and for proportional representation votes cast at the local municipality level for parties.

Moreover, as Mattes (2014) notes, diversity continues to play a critical role in South Africa. According to Afrobarometer data collected in 2011, 7.5 per cent of South African respondents identified themselves as a member of an ethnic group first and 70 per cent identified themselves as South African first. By 2017, these numbers had changed to 24 per cent identifying with their ethnic group first and only 32.2 per cent as South African first. To measure this diversity, we rely on self-reported data on respondents’ linguistic group from South Africa’s 2016 Community

Survey. For our measure of diversity, we follow the existing literature and calculate the ethnolinguistic fractionalization (ELF) index at the municipality level (e.g. Alesina et al. 2003).

Finally, we created a dataset on individual mayors’ ethnic identification by obtaining the Provincial and Local Government Directory (published in May 2013). This directory, published regularly by the South African Department of Cooperative Governance, lists the names, addresses, and contact information of the key municipality-level officials, including the mayor, municipal manager, head of communication, and information officer. We parsed out the information on the names and addresses of each of the municipality mayors using optical character recognition (OCR) and regular expression (regex) matching procedures. We then provided the names and addresses of these mayors to eight local South African research assistants and asked them to code each mayor’s ethnic identity into one of 11 ethnolinguistic group categories based on the group categories used in the Census and standard surveys such as the Afrobarometer.¹⁵ We used membership in linguistic groups to measure the ethnicity of the mayor and constituency diversity. Existing works report that, in the Sub-Saharan African context and in South Africa particularly, the correlation between home language and ethnic identity is nearly perfect (e.g. Lieberman and McClendon 2013: 579).¹⁶ However, there are exceptions. For the cases where the ethnicity was not apparent, we asked our coders to conduct additional research on and off line to provide their best estimate. In total, we have information about the mayor’s ethnic group in 223 out of 234 municipalities with on average 85.6 per cent agreement among the eight coders.

5.3 Empirical strategy

We estimate the impact of ELF on public service provision, conditional on levels of electoral security. For this, we employ an interaction model with a multiplicative term between our measures of diversity and electoral security in the form of

$$Y = \alpha D + \eta X + \beta(D * X) + \theta + \epsilon \quad (1)$$

where Y stands for our dependent variables for public service provision (waste, water, and sewerage). Here, we construct a model where the effects of constitutive term D (our diversity variable) are moderated by the other constitutive term, X (the level of electoral security), through the incorporation of the interaction term, while controlling for a host of covariates (Brambor et al. 2006). Since the decisions to provide and manage the public services considered here occur at the municipal level, we employ the municipality as our unit of analysis. By conducting the analyses at this sub-national level, we naturally hold constant features of the national-level institutions. We focus instead on within-country variations, especially municipality-level characteristics, as the key determinants of the level of public service provision. Moreover, by focusing on a single slice of time, we avoid introducing unnecessary time trends and potential noise into our estimation.¹⁷

To mitigate concerns of omitted variable bias, we include a battery of controls, including municipal population and population density. We also consider a host of variables that capture the local-level

¹⁵ These categories are Asian/Indian, Afrikaans/Afrikaner/Boer/English/European/White, Ndebele, Xhosa, Zulu, Peti/Spedi/North Sotho, Setswana/Tswana, Sesotho/Sotho/South Sotho, Venda, Swazi/Swati, and Shangaan/Tsonga.

¹⁶ To mitigate any bias or unnecessary noise introduced by coding decisions, we took a conservative approach and grouped ‘Afrikaans’, ‘Afrikaner’, ‘Boer’, ‘English’, ‘European’, and ‘White’ into a single category and dropped ‘Coloured’, ‘Sign Language’, and ‘Other’ from the Census coding.

¹⁷ Alesina et al. (1999) is also based on a within-state analysis (of the United States), using a snapshot in time with similar controls.

income and assets, such as percentage of housing owned, proportion of population with no schooling, and rates of unemployment. Finally, we include province-level fixed effects to control for the observed and unobserved heterogeneity across provinces.¹⁸

6 Results

Before proceeding to test our hypotheses on the conditional effects of diversity variables, we first consider the baseline effects of diversity on service provision. Table 1 shows ELF's strong and robust positive effects on sewerage and waste removal service provision. While the coefficients are also in the positive direction for piped water, they are not statistically significant. As the ELF variable takes a value between 0 and 1, this result suggests that going from complete ethnic homogeneity (an index of 0) to complete heterogeneity (an index of 1) is associated with, for example, an increase of 35.5 percentage points in access to sewerage.

Table 1: Effects of diversity on public service provision

	Dependent variable: access to:		
	Sewerage (1)	Waste removal (2)	Piped water (3)
ELF	35.499*** (9.238)	27.781*** (8.551)	7.298 (6.185)
Population (logged)	-2.920 (2.630)	-3.120 (2.434)	1.110 (1.761)
Population density	-0.453 (2.375)	-0.311 (2.198)	-0.115 (1.590)
No schooling (%)	-1.220*** (0.284)	-1.722*** (0.263)	-1.019*** (0.190)
Unemployment (%)	-1.132*** (0.241)	-1.034*** (0.223)	-1.070*** (0.161)
Housing owned (%)	-0.173 (0.143)	0.041 (0.133)	0.061 (0.096)
Gini	144.456** (58.821)	93.372* (54.446)	78.454** (39.385)
Constant	41.939 (39.844)	66.319* (36.880)	10.612 (26.678)
Province-fixed effects	Yes	Yes	Yes
Observations	205	205	205
Adjusted R ²	0.721	0.739	0.779

Note: *p<0.1; **p<0.05; ***p<0.01.

Source: authors' calculations.

Can greater electoral security counter the positive effects of diversity? We expect electoral security, as measured by the mayor's margin of victory, to be negatively associated with the level of service provision. The safer a mayor's political office, the less incentive they will have to provide broader public services. Accordingly, our theory predicts that greater levels of electoral security will

¹⁸ All subsequent models in this paper use Huber-White robust standard errors. We do not cluster errors since the number of units at the higher dimension, i.e. provinces, is small (N=9). We did, however, test models with standard errors clustered at the province level using wild bootstrap (Cameron et al. 2008) and can confirm that our results are consistent with those reported.

condition the positive influence of diversity. Diversity provides opportunities to build cross-ethnic coalitions that benefit service provision—opportunities that secure mayors do not need. Therefore, we expect the marginal effect of diversity on service provision to be positive when electoral security is at its lowest. In addition, the positive effects of diversity decline in magnitude as levels of electoral security increase, and past a certain level may even become indistinguishable from zero.

Table 2 and Figure 1 provide support for this argument. Models 1–3 in Table 2 omit the interaction terms. We find that the coefficients for the vote margin variable are all in the expected direction (negative) and significant. Substantively this suggests that a 1 percentage point increase in the winning vote margin is associated with a 0.4 percentage point decrease in access to sewerage. Models 4–6 test conditional effects and again support our theory. The marginal effect of our diversity variable, ELF, on public service provision is conditional upon the levels of the margin of victory variable. Specifically, as Figure 1 demonstrates, the positive effect of ELF is strongest when margin of victory is lowest, and declines in magnitude as margin of victory increases until indistinguishable from zero in all three public services.

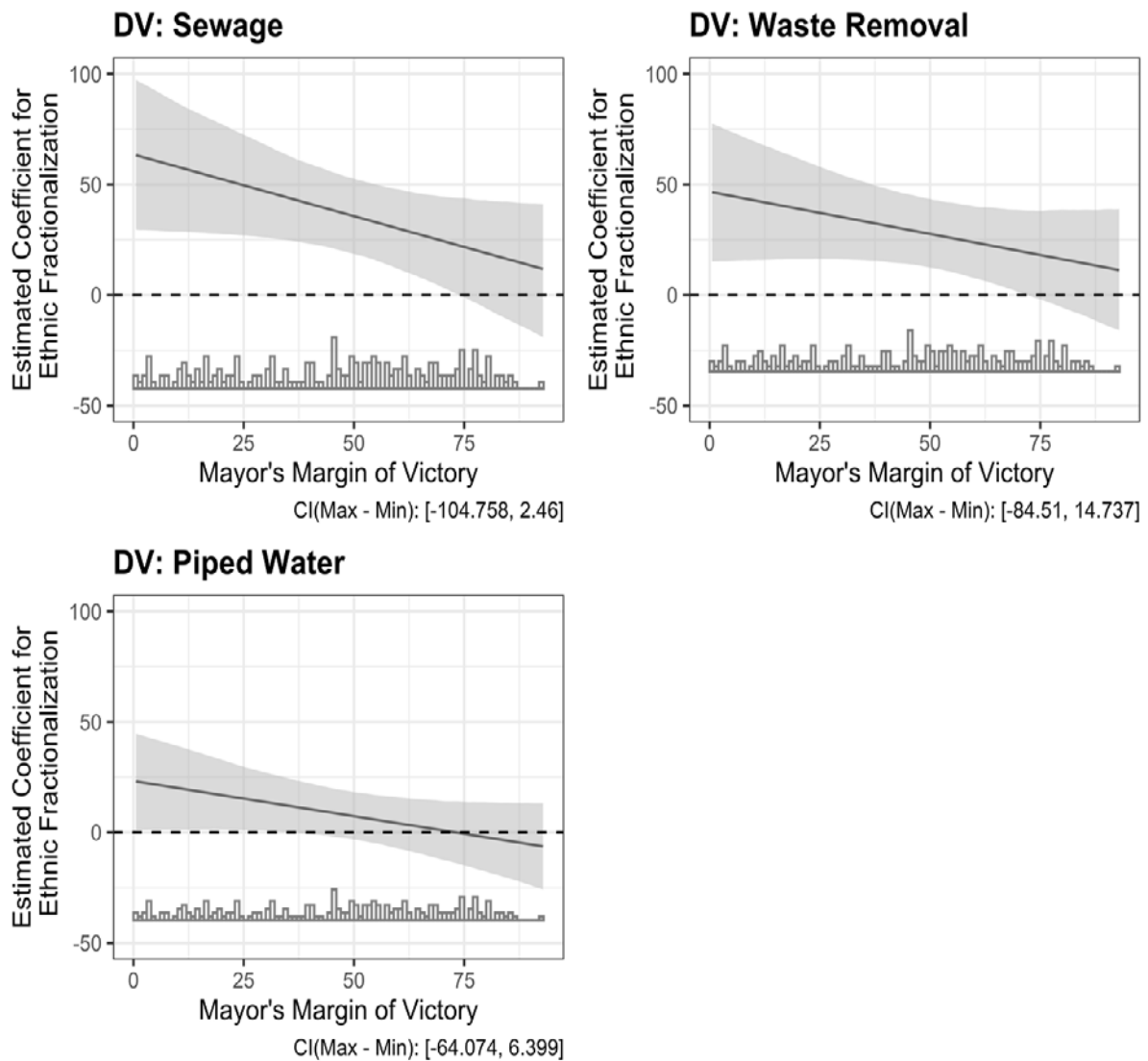
Table 2: Effects of electoral security on public service provision

	Dependent variable: access to:					
	Sewerage (1)	Waste removal (2)	Piped water (3)	Sewerage (4)	Waste removal (5)	Piped water (6)
Vote margin	-0.402*** (0.075)	-0.406*** (0.068)	-0.324*** (0.048)	-0.257** (0.107)	-0.308*** (0.098)	-0.242*** (0.069)
ELF	35.210*** (8.630)	27.492*** (7.869)	7.052 (5.553)	63.656*** (17.320)	46.792*** (15.860)	23.257** (11.167)
Vote margin * ELF		-0.563* (0.298)	-0.382 (0.273)	-0.321* (0.192)		
Constant	61.504 (37.399)	86.082** (34.101)	26.391 (24.063)	53.341 (37.395)	80.543** (34.243)	21.741 (24.110)
Province-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	204	204	204	204	204	204
Adjusted R ²	0.757	0.779	0.823	0.761	0.781	0.825

Note: *p<0.1; **p<0.05; ***p<0.01.

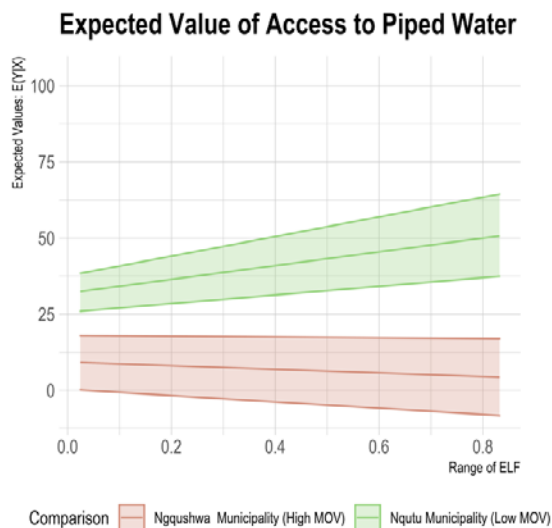
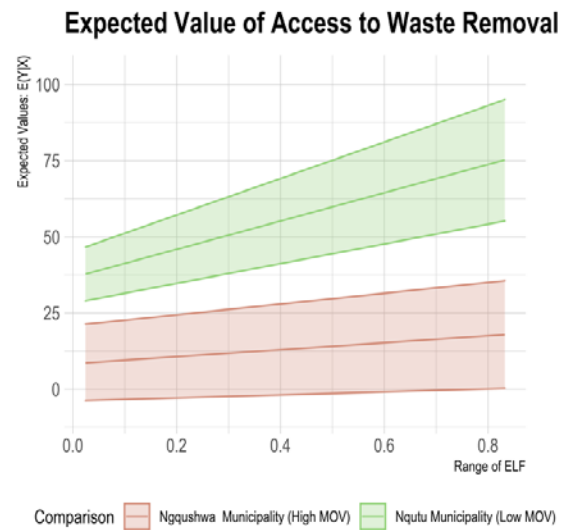
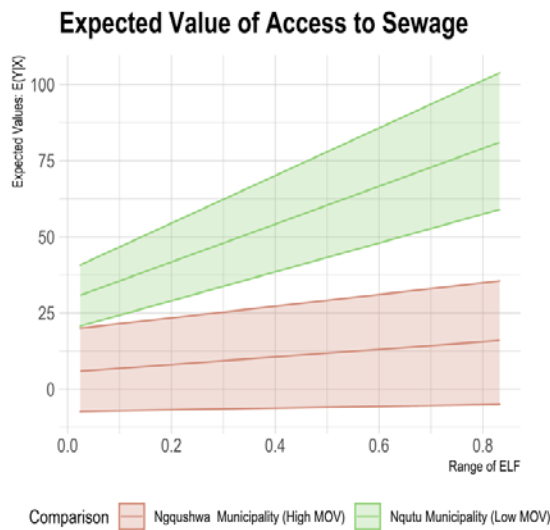
Source: authors' calculations.

Figure 1: Marginal effects of diversity on public service provision conditional on electoral security



Source: authors' calculations.

To provide additional substantive interpretations, we consider the simulated results as we move from a municipality with a low to high margin of victory. In Figure 2, we show the effect of moving from the municipality with the lowest margin of victory (Nqutu Municipality in Kwa Zulu-Natal Province) to that with the highest margin of victory (Ngqushwa Municipality in Eastern Cape Province) across a range of diversity levels, while holding all else constant. The simulated expected values indicate that the percentage of people with access to sewerage, waste removal, and piped water increases substantially with diversity. However, we see such effects only for Nqutu, the municipality with the lowest margin of victory (green), and not for Ngqushwa with the highest margin of victory (red); in fact the lines' slopes are close to being flat, if not negative.



Source: authors' calculations.

7 Alternative explanations

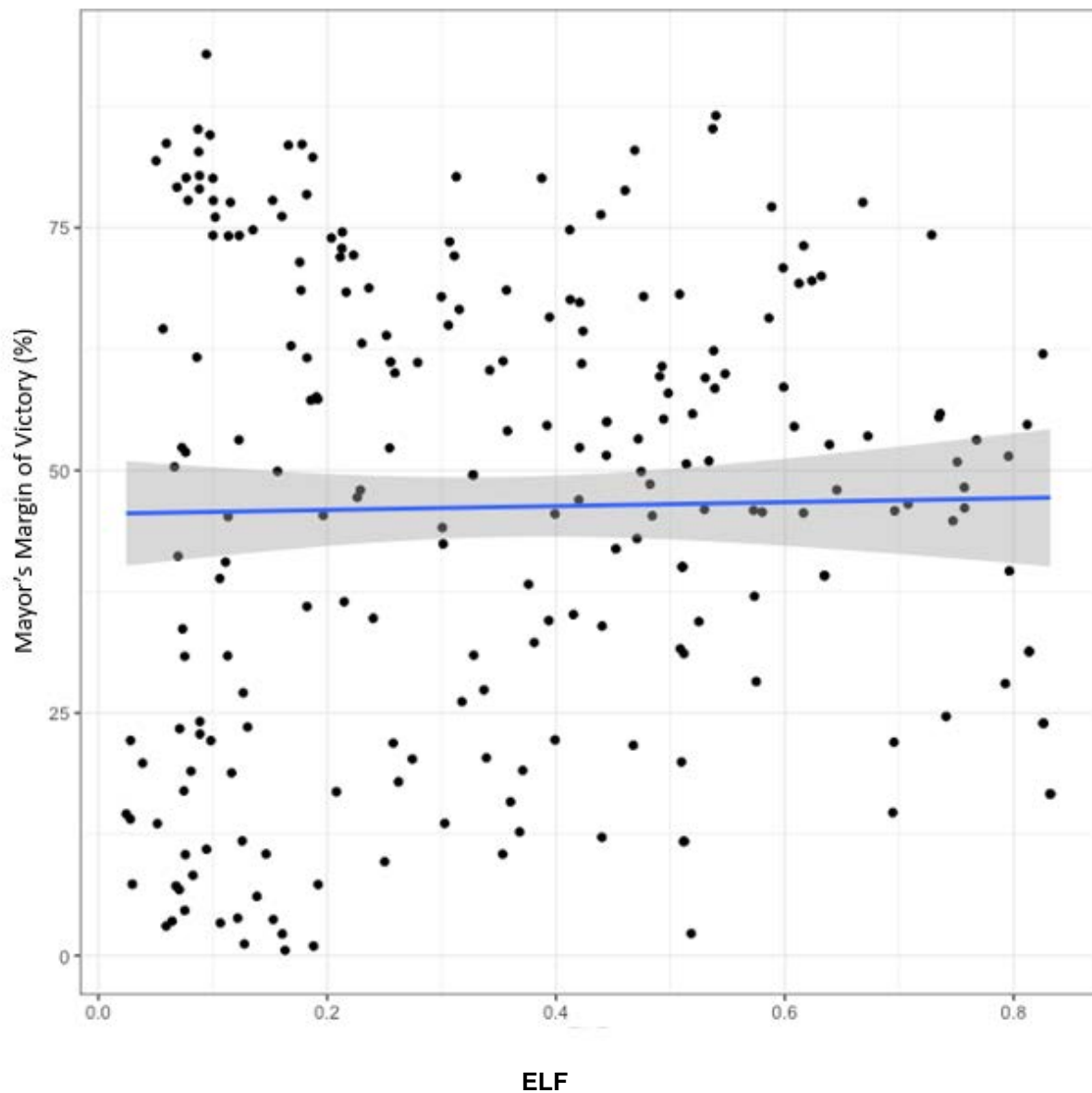
While our results offer strong support for our theory that electoral security can mitigate the positive effects of diversity on the provision of public services, we now consider alternative explanations for our findings.

7.1 Does a high margin of victory simply reflect greater ethnic homogeneity?

First, if a high margin of victory is simply a reflection of greater ethnic homogeneity, our results may reflect the decreasing *possibility* of cross-ethnic cooperation. In other words, if elections are merely ethnic head-counts (Chandra 2007; Horowitz 2000), we would expect greater margins of victory or more homogeneous councils in places where there are fewer ethnic groups. The

scatterplot in Figure 3, however, depicting the relationship between margin of victory and ELF, suggests that there is essentially no relationship between a mayor's margin of victory and ethnic diversity; indeed the correlation coefficient between the two is 0.094. While the graph shows only a simple bivariate relationship, we believe it provides evidence that our results are not simply driven by some correlation between diversity and a mayor's electoral security.

Figure 3: Scatterplot for ELF and margin of victory



Source: authors' calculations.

7.2 Is this a centre–local distribution story?

Although we have documented earlier how the first three types of public service provision are managed at the discretion of local municipalities with the mayors as their leaders, we might question how much power the local municipalities really have in the decision-making and allocation processes of these services. Indeed, we know from existing literature that local governments in decentralized systems often lack adequate resources to distribute in the first place. Distribution is therefore heavily influenced by decisions made at the centre, and public service

provision responds to co-ethnic or co-partisan favouritism at the national level (e.g. Burgess et al. 2015; Golden and Min 2013; Kramon and Posner 2016).

We cannot directly test the influence of federal spending on findings without supplementing our analyses with additional data on centre-to-local transfers or budget allocation. Instead, we provide indirect evidence that this is not the case. First, we control for variables that capture aspects of co-ethnic or co-partisan favouritism between the centre and the local government. Over the time period we study, the ANC led the national government under President Jacob Zuma. Using party and ethnic identification (Zulu) information, we create three variables that capture affinity with the centre. We first control for a mayor's alignment with the ANC. If the provision of local public services is influenced by the incentive at the centre to cater to either swing or core voters, we would expect the coefficient on the ANC variable to be either negative or positive, respectively. Second, we consider whether the mayor is of the Zulu ethnic group, following a similar logic. Here, we can first test whether having a mayor who is co-ethnic with President Zuma provides benefits in service provision in a given municipality. Finally, we examine whether having the majority of the *population* in a given municipality as co-ethnics with the President has a positive effect.

Table 3 shows that we should not be concerned about the influence from the centre. None of the centre–local variables influences our coefficient estimates for our key quantity of interests. First, coefficients for the variables that capture whether the mayor belongs to the President's party or ethnic group are not statistically significant. We do, however, see that having majority Zulu—i.e. co-ethnics with the President—in the municipality is positively associated with better service provision. That said, the coefficients for our constitutive as well as interaction terms overall remain stable in both direction and magnitude despite the inclusion of these additional controls for centre–local favouritism across all models.

Table 3: Test for co-ethnic distribution from the centre

	Dependent variable: access to:								
	Sewerage (1)	Waste removal (2)	Piped water (3)	Sewerage (4)	Waste removal (5)	Piped water (6)	Sewerage (7)	Waste removal (8)	Piped water (9)
Mayor in ANC	3.934 (5.993)	-0.278 (5.494)	-0.036 (3.868)						
Mayor Zulu				-0.246 (4.884)	2.847 (4.467)	3.877 (3.136)			
Majority Zulu							12.310** (5.635)	8.082 (5.192)	3.700 (3.669)
Mayor margin of victory	-0.272** (0.109)	-0.307*** (0.100)	-0.242*** (0.071)	-0.257** (0.107)	-0.311*** (0.098)	-0.247*** (0.069)	-0.244** (0.106)	-0.299*** (0.098)	0.238*** (0.069)
ELF	62.780*** (17.397)	46.854*** (15.949)	23.265** (11.230)	63.621*** (17.380)	47.194*** (15.898)	23.804** (11.160)	64.866*** (17.155)	47.586*** (15.808)	23.620** (11.172)
Margin of victory * ELF	-0.547* (0.299)	-0.383 (0.274)	-0.321* (0.193)	-0.562* (0.299)	-0.386 (0.273)	-0.327* (0.192)	-0.545* (0.295)	-0.370 (0.272)	-0.315 (0.192)
Constant	54.779 (37.516)	80.442** (34.393)	21.727 (24.216)	53.210 (37.585)	82.057** (34.379)	23.802 (24.133)	49.541 (37.062)	78.049** (34.150)	20.599 (24.135)
Province-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	204	204	204	204	204	204	204	204	204
Adjusted R ²	0.760	0.779	0.824	0.759	0.780	0.825	0.765	0.782	0.825

Note: *p<0.1; **p<0.05; ***p<0.01.

Source: authors' calculations.

7.3 Nature of services

We can also exploit the difference between the differences between our central three types of public services and electricity. As described above, local governments have less control over electricity distribution, robbing mayors of the ability to use access to electricity to build coalitions. We therefore should not find the same effects on the provision of electricity as for that of the other three services. (If anything, we should find larger and stronger effects of having a majority co-ethnic population on electricity provision, since the decisions regarding electricity provision are more tightly controlled from the centre.)

Table 4 partially confirms our expectations. In our three targeted services, the effects of ELF are statistically significant and positive, the effects of vote margin negative, and the interaction between the two also negative. Electricity differs. The statistical significance for the diversity measure disappears, the sign of the vote margin variable flips, and the interaction term is no longer significant. Interestingly, the sign of the coefficient for majority being co-ethnic with the President is negative and statistically significant for this one service over which the national government may have greater influence, suggesting the possibility that co-ethnics may be stuck in a perverse equilibrium of getting less rather than benefiting from being co-ethnics (e.g. Kasara 2007).

Table 4: Test for co-ethnic distribution from the centre with margin of victory

	Dependent variable: access to electricity			
	(1)	(2)	(3)	(4)
ELF	0.331 (4.735)	0.395 (4.715)	7.085 (9.536)	6.380 (9.431)
Mayor margin of victory		0.071* (0.041)	0.105* (0.059)	0.097* (0.058)
Majority Zulu				-7.172** (3.098)
Margin of victory * ELF			-0.132 (0.164)	-0.143 (0.162)
Constant	64.224*** (20.422)	60.783*** (20.433)	58.863*** (20.590)	61.077*** (20.375)
Province-fixed effects	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes
Observations	205	204	204	204
Adjusted R ²	0.302	0.311	0.310	0.325

Note: *p<0.1; **p<0.05; ***p<0.01.

Source: authors' calculations.

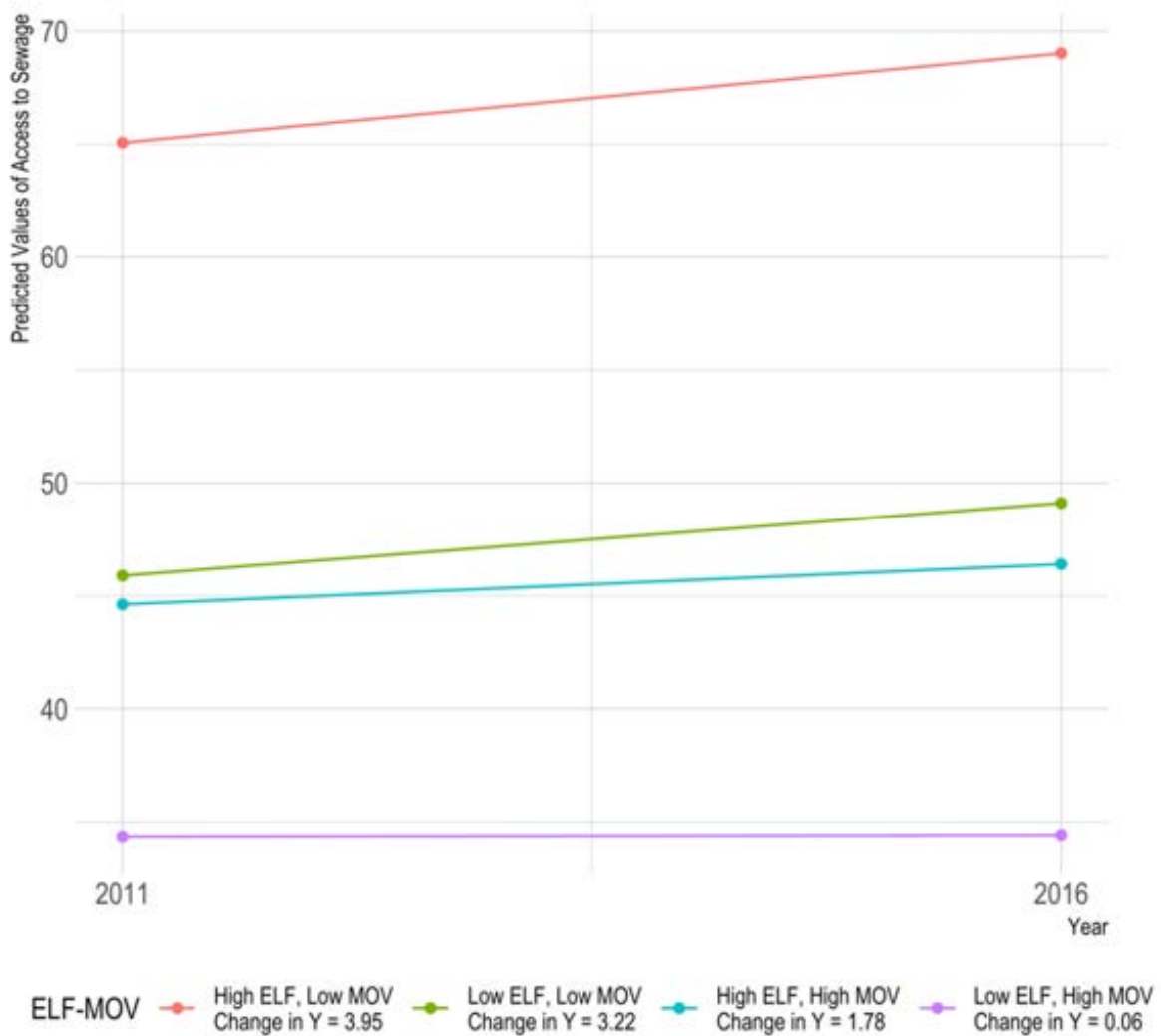
7.4 What happens if we consider temporal variations?

Data limitation allowed only cross-sectional tests of our main hypotheses. While our models control for a range of confounders to rule out alternative explanations, there remains the possibility that some other factor or factors are driving the joint impact of diversity and electoral competition. For example, if for some reason historical events concentrated political power in a small group of elites, institutions may be weak. This context could explain both the low levels of electoral competition and public service provision.

As a further check on the robustness of our results, we exploit the variation of service provision over time by using data from South Africa's 2011 census. While we would like to use a simple difference-in-differences research design that includes the changes in service levels between 2011 and 2016, diversity generally changes very little over such a short period. Given the movements in

both services and electoral margins over time, however, we can estimate difference-in-difference-in-differences models (triple differences) using the interaction between ELF, margin of victory, and year indicator variables while retaining the same set of control variables to replicate the main model. If the results from our cross-sectional model hold, we should observe greater increases in public service levels in the case of greater diversity and low levels of electoral security. Figure 4 shows just this outcome: categorizing the first and third quartiles of variables as ‘high’ and ‘low’ for each variable, the red line indicates a nearly 4 percentage point difference in the predicted value of sewerage connections when ELF is high and the margin of victory (electoral security) is low. In contrast, in cases where mayors enjoy high electoral security, we see only 1.78 and 0.05 percentage point improvements over these five years for municipalities with high (blue line) and low (purple line) ELF. Finally, while we had no ex ante theoretical expectation for the relative strength of the correlation between diversity and electoral security, Figure 4 shows that when diversity and electoral security are both low, the positive slope (green line) is steeper than the results for the high diversity, high electoral security condition (blue line). This suggests that the impact of electoral security may be relatively stronger than that of diversity on service outcomes.

Figure 4: Triple difference results: high and low values using first and third quartiles



Note: MOV = margin of victory.

Source: authors' calculations.

8 Conclusion

Many observers of South Africa point to the unequal provision of public services as a core cause of continuous protests, and improved service provision remains a key normative and policy goal for its government and citizens. Research that relies on ethnic favouritism to explain service distribution can lead to deterministic and somewhat pessimistic conclusions.

We join a growing body of research that emphasizes how institutional design affects distribution of public services in Africa. Contrary to most accounts that assume the central importance of ethnicity in service provision, our approach begins by assuming that politicians want to win office, and that political institutions may or may not incentivize incumbents to provide services in accordance with an ethnic logic. Using the case of South African municipalities, our theoretical approach yields three hypotheses. The first—contrary to most studies, which expect that rising levels of ethnic heterogeneity lead to conflict over policy and failure to provide services—is that the need to win elections combined with majority voting rules in a legislature leads politicians to build coalitions to pass policy; greater levels of ethnic diversity lead to coalitions with more preferences to be satisfied, resulting in increased service provision. Using data on three services for which municipalities have clear public authority, we find that municipalities with higher levels of ethnic diversity enjoy greater service provision in two of the three cases. In the case of electricity, over which councils and the South Africa’s national utility fight for control, we not find this effect. Under the right conditions, ethnic diversity can lead to cooperation and not conflict over service distribution.

Our second hypothesis separates us from many studies of ethnicity and services, which assume that all individuals involved in services possess the same powers over their distribution. In contrast, we theorize that political institutions allocate such powers, which can result in different choices for individual politicians. In the case of South Africa, we theorize that the electoral safety of the country’s very powerful mayors helps determine their choices: mayors enjoying large margins of victory tend to underprovide. Our tests support this hypothesis for the three services under the control of the municipality.

Finally, we argue that the interaction between these two municipal politicians’ strategies largely accounts for the variation in service provision across South African municipalities. Diversity provides opportunities to build cross-ethnic coalitions that benefit service provision, but not all mayors need these opportunities. We hypothesize and find evidence that the marginal effect of diversity on service provision is positive when a mayor’s electoral security is at its lowest; the diversity dividend resulting from ethnic heterogeneity declines as a mayor’s electoral security increases.

This study is not without limitations. While extensively discussing the powers of mayors, we do not possess detailed information on in-council activities. Future studies could investigate procedures more deeply, and seek data that might capture the political dynamics of decision-making about service provision. Still, the findings here suggest a more complex and less deterministic process behind the politics of service distribution in ethnic settings. We hope that our study helps motivate researchers to move beyond simple ethnic-based explanations to deepen our understanding of the politics of service distribution.

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