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Explaining ethno-regional favouritism in Sub-Saharan Africa

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ABSTRACT

A burgeoning literature on ethno-regional favouritism in Sub-Saharan Africa has found that Presidents favour their co-ethnic kin in the provision of public and private goods. However, this scholarship has largely remained empirically narrow in focus, inasmuch as it preponderantly examines only one outcome and/or country at a time and can be contrasted with a separate set of literature which finds a null or even negative relationship between co-ethnicity and goods provision. As such we conduct the largest examination to date of ethno-regional favouritism in Sub-Saharan Africa using data from the Afrobarometer and DHS across both public and private goods and at both the individual and district level. We confirm the positive effects of individual-level co-ethnicity on a variety of outcomes, but also find that these benefits only accrue to the few co-ethnics living in non-co-ethnic areas and decline as the district-level proportion of co-ethnics increases. The positive effects of individual-level co-ethnicity are weaker for objective outcomes like access to infrastructure, asset ownership and employment but are stronger for subjective measures such as self-assessed living conditions and the quality of government services. We also find that the positive effects of co-ethnicity do not decline with the proportion of local co-ethnics for subjective perceptions of presidential and ruling party performance. This relationship does not hold, however, for perceptions of other non-political institutions like the courts or police, or for local governments. These results are consistent with the argument that co-ethnics derive non-material "psychic goods" from having a co-ethnic in power, rather than the standard "quid-pro-quo" theory common in the literature, and thus complicate the idea that ethnic favouritism in the provision of public and private goods is widespread in contemporary Africa. We supplement our quantitative findings with anecdotal evidence from Nigeria which supports our argument.

> *People have blamed the Langi over [former Ugandan President Milton] Obote's misdeeds but go to Akokoro [Obote's ancestral home] and see whether the people there gained at all. People elsewhere think all of you from western Uganda are enjoying and they are envious of you [but] what do you the ordinary people of Kiruhura have?*
> *Presidential Candidate Kizza Besigye upon visiting the hometown of President Yoweri Museveni during the 2011 Ugandan Presidential campaign (Sserunjogi, 2011).*

1. Overview

There is now a large literature on the existence of ethno-regional favouritism in the developing world, particularly in Sub-Saharan Africa, whereby Presidents are perceived to favour their co-ethnic kin through access to both private and public goods. More specifically, scholars have shown a positive effect of having a co-ethnic in power on road construction (Burgess, Jedwab, Miguel, Morjaria, & Padró i Miquel, 2015), night-time luminosity (De Luca, Hodler, Raschky, & Valsecchi, 2018; Dickens, 2018; Soumahoro, 2015), infrastructure (Walters, Bittencourt, & Chisadza, 2023), perceptions of fair treatment by the government (Ahlerup & Isaksson, 2015), access to education (André, Maarek, & Tapo, 2018; Franck & Rainer, 2012; Kramon & Posner, 2016; Li, 2018), wealth (Dickens, 2018), and access to health care (Beiser-McGrath, Müller-Crepon, & Pengl, 2021; Franck & Rainer, 2012). However, another set of literature either suggests that these results are not robust to alternative measures (Kramon & Posner, 2013; Simson & Green, 2020), suffer from endogeneity concerns due to uneven colonial investment (Maravall, Baten, & Fourie, 2023) or find the existence of a null or even a negative effect of co-ethnicity (Kasara, 2007; Kudamatsu, 2009). This evidence is well supported by an older literature on how

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clientelistic politics in Africa benefit the elite but not the masses, who support their co-ethnics despite failing to gain materially when they are in power (cf. Van de Walle, 2003).

One potential explanation for these contradictory findings is that much of the scholarship demonstrating a positive effect of ethnic favouritism has a narrow empirical focus. More specifically, almost all aforementioned studies either examine only one country – in particular Kenya – (André, Maarek, & Tapo, 2018; Burgess et al., 2015; Kramon & Posner, 2016; Kudamatsu, 2009; Li, 2018; Walters, Bittencourt, & Chisadza, 2023), focus on only one outcome (Ahlerup & Isaksson, 2015; Burgess et al., 2015; De Luca et al., 2018), and/or use only one dataset (Ahlerup & Isaksson, 2015; De Luca et al., 2018; Franck & Rainer, 2012). In the first case, the problem with studying only one country is obvious: such a phenomenon could be limited to one or only a few countries, which are studied because of high quality data relative to other areas. In the second case, there is a similar problem with focussing on one outcome and not others, whereby governments could be giving with one hand while taking with the other; thus, as noted previously by Kasara (2007), only a wholistic approach that examines multiple outcomes simultaneously can assess the degree to which Presidents favour their co-ethnic kin. Indeed, due to the fact that some goods take longer to deliver than others, and that some are exclusively financed and delivered by national governments while others are not, a focus on one particular type of good has the potential to generate spurious results. Finally, in the third case the use of multiple sources allows for external validity in a situation where differences between group-level outcomes can be statistically significant but still very small in magnitude (Simson & Green, 2020).

We are not the first to complain about the narrow focus of much of this literature: most notably Kramon and Posner (2013) find that different measures of favouritism and a focus on different countries can generate varied effects, with a note of caution about making general claims about ethnic favouritism. Similarly, Golden and Min (2013, p. 83) in their review of the literature on distributive politics, note that "interpretations based on a single country, a small number of countries, and/or a single or limited number of goods are often unrepresentative of larger patterns. The challenge for future research is thus to maintain data precision while simultaneously expanding the number of cases analyzed."

Yet this advice has largely been ignored, if we consider the paucity of scholarship that use multiple datasets to examine multiple outcomes across multiple countries.[1] Moreover, within this literature there has been a complete lack of scholarship on both the differences between objective and subjective measures of wellbeing, as well as a relative lack of attention to measuring co-ethnicity at both the individual and district levels. As such we study the effects of having a co-ethnic President on a wide variety of outcomes through the use of multiple data sources across over two dozen Sub-Saharan African countries. More specifically, we use 225 country surveys from up to 27 countries from the Afrobarometer and Demographic and Health Survey (DHS) databases from the late 1980s to the present to examine contemporaneous evidence for ethnic favouritism across the entire region for the first time.[2] More specifically, earlier scholarship on ethnic favouritism using the Afrobarometer or DHS data utilized it either in a cross-sectional analysis (Ahlerup & Isaksson, 2015) or as a source of historical data on infant mortality and schooling (Beiser-McGrath, Müller-Crepon, & Pengl, 2021; Franck & Rainer, 2012); however, the continued increase in the number of geo-coded country-rounds alongside ongoing regime change in Africa has generated enough temporal variation to allow us to use these two data sources to examine non-historical variation in access to a large number of public and private goods.

Our analysis reveals a consistent relationship across multiple outcomes and both datasets, namely that there is a positive benefit at the individual level for having a co-ethnic President, but this benefit only accrues to co-ethnics living in non-co-ethnic areas and declines as the proportion of local co-ethnics increases. More specifically, we find that the interaction effect between individual and district-level co-ethnicity is reliably negative and statistically significant across both objective and subjective outcomes, with the former ranging from measures such as asset ownership, infrastructure, full-time employment, government employment, poverty and wealth, while the subjective measures include indices of government performance and services, self-assessed living standards and the perceived direction of the country. Perhaps most remarkably of all, we even find evidence that the interaction effect is positive and statistically significant for perceptions of the government's unfair treatment of respondents' ethnic groups, which suggests that co-ethnics in co-ethnic districts are aware that they are not being treated fairly by the government.

We couple these results with additional findings that examine the effect of co-ethnicity on support for and trust in the president and ruling party. Here the effect of co-ethnicity is positive and statistically significant at both the individual and district levels, and the interaction effect is generally not statistically significant. This relationship does not hold, however, for other non-political institutions like the courts or police, or for local governments. These findings suggest that the support co-ethnic individuals give to their president is not contingent upon the provision of material goods, but is consistent with the theory that co-ethnics enjoy non-material "psychic goods" from having a co-ethnic President. Our results thus complicate the idea that ethnic favouritism in the provision of public and private goods is widespread in Africa.

In the rest of the paper we first discuss the literature on regional favouritism, where we identify several empirical problems with previous scholarship. We then present our data, econometric strategy and results, first as regards objective and subjective evidence for government favouritism, and then focus on evidence for co-ethnic support for central governments. Finally, we briefly discuss the qualitative example of Goodluck Jonathan's Nigeria to help make sense of our results before concluding.

2. Theory and literature

As helpfully delineated by Franck and Rainer (2012), there are three main theories that could explain the relationship between presidents and co-ethnic citizens. The first, dubbed "ethnic altruism," assumes that presidents derive non-material or psychological utility out of providing more goods to their co-ethnics, regardless of whether or not these co-ethnics provide political support to the president in return. The second theory flips around these motives, such that co-ethnics derive non-material or psychological utility out of having a co-ethnic president, regardless of whether the president provides more goods to her co-ethnics. The utility thus derived by co-ethnics has been dubbed "psychic goods" by Chandra (2004), and thus we call this second theory the "psychic goods" theory. The third or "quid-pro-quo" theory suggests that presidents provide goods to their co-ethnics in exchange for political support, with the bias in goods provision towards co-ethnics explained by factors that could include a disproportionate ability of co-ethnics to overthrow the president (Burgess et al., 2015) and/or a greater efficiency in goods provision due to the president's better knowledge of her co-ethnics' needs and wants (Franck & Rainer, 2012). This last theory is the only one that has been specified in a formal model, first by Padró i Miquel (2007) and later repeated in Burgess et al. (2015), although the argument that members of specific ethnic groups are targeted for distributive government spending or "pork" can be found earlier in Fearon (1999). The model explains the president's focus on co-ethnics as opposed to other identity groups by the fact that ethnic identity is

[1] We know of only two such papers, namely Beiser-McGrath, Müller-Crepon, and Pengl (2021) and Dickens (2018), both of which are still very limited in the outcomes they study.

[2] Dickens (2018) uses contemporaneous data on one of our outcomes, namely the DHS wealth index, but only for 33 surveys across 13 countries.

difficult to change relative to other identity markers like language or religion, thereby making it useful for politicians looking to identify voting blocs which they can win over with the provision of public goods. (Co-ethnics of the president can thus be seen as akin to "core" supporters of the government; the theory of ethnic favouritism is thus akin to Cox and McCubbins (1986)'s argument that politicians will target redistribution towards their core supporters.) Moreover, the model suggests that ethnic favouritism can only take place under a non-democratic regime where there are weak constraints on the executive, such that democratization will increase incentives for the government to spread public goods more evenly across the population.

These three theories generate several clear testable implications. First, it is only the "ethnic altruism" and "quid-pro-quo" theories that are consistent with evidence for an ethnically biased distribution of material goods, as the "psychic goods" theory implies that governments can rely upon co-ethnics for political support without the distribution of such goods (and that in fact the distribution of goods to co-ethnics is politically inefficient and wasteful). Second, while the "ethnic altruism" does not generate any predictions about co-ethnic support for the president, the "psychic goods" and "quid-pro-quo" theories have different implications for presidential support: the former predicts that this support will be forthcoming regardless of the distribution of material goods, while the latter suggests that political support among co-ethnics is generated by goods provision. Third, Burgess et al. (2015) and Padró i Miquel (2007)'s model of the "quid-pro-quo" theory implies that it can only function under weak or non-democratic institutions, such that more democratic institutions generate incentives for less ethnic favouritism as the president increasingly needs to build multi-ethnic coalitions to attain and retain power.[3]

Quantitative evidence for the existence of ethnic favouritism in Africa can be dated back to Franck and Rainer (2012), which used historical DHS data to show that co-ethnics of the president were more likely to attend and complete school and have lower levels of infant mortality. As noted above, since then there has been a burgeoning quantity of literature demonstrating a positive effect of co-ethnicity on various outcomes, whether in individual countries (André, Maarek, & Tapo, 2018; Burgess et al., 2015; Kramon & Posner, 2016; Li, 2018; Walters, Bittencourt, & Chisadza, 2023), Africa more widely (Ahlerup & Isaksson, 2015; Beiser-McGrath, Müller-Crepon, & Pengl, 2021; Dickens, 2018; Soumahoro, 2015) or across the developing world (De Luca et al., 2018). A separate set of literature has focussed on regional or birth-place favouritism, which attempts to show a bias in public goods provision towards the birth region or district of the President and thus avoids the problem of coding the ethnic identity of both the President and citizens (which is especially problematic in countries without accurate census or survey data on ethnicity), and which has also provided evidence for a positive effect on such outcomes as luminosity and perceptions of fair treatment by the government (Ahlerup & Isaksson, 2015; Hodler & Raschky, 2014).

This empirical evidence would seem to provide support for the existence of material ethnic favouritism and is thus not consistent with the "psychic goods" theory. However, the empirical basis of this literature is not as substantial as it first appears, for several reasons. First, as noted above there is a separate set of literature which finds either weak, non-existent or even negative evidence for ethnic favouritism (Kasara, 2007; Kramon & Posner, 2013; Kudamatsu, 2009; Simson & Green, 2020; Yi Dionne & Horowitz, 2016). Indeed, one of the key points made by Kramon and Posner (2013) in their review of the literature was that there was a lack of consistency across the scholarship on ethnic favouritism on the outcomes studied, such that it was entirely plausible that governments were biased towards co-ethnics in the provision of some goods and against their co-ethnics in the provision of other goods. Thus scholarship that focusses on only one particular outcome such as night-time luminosity (De Luca et al., 2018; Soumahoro, 2015),[4] education (André, Maarek, & Tapo, 2018; Kramon & Posner, 2016; Li, 2018), road construction (Burgess et al., 2015), health care (Beiser-McGrath, Müller-Crepon, & Pengl, 2021; Theisen, Strand, & Østby, 2020) and water infrastructure (Walters, Bittencourt, & Chisadza, 2023) plausibly fails to capture the nature of ethnic favouritism in its entirety.

A second problem with the evidence for ethnic favouritism is that it is not drawn from an even sample of countries. Much of the literature is based on single-country case studies, with an uneven amount of attention to the existence of ethnic favouritism and bias in Kenya (Burgess et al., 2015; Choi, Harris, & Shen-Bayh, 2022; Friedman, 2018; Kramon & Posner, 2016; Li, 2018; Vanden Eynde, Kuhn, & Moradi, 2018). Kenya is a country which is notorious for the politicisation of ethnic identity, which has arguably contributed to large-scale violence during multiple national elections. Indeed, it is plausible that Kenya suffers more from ethnic favouritism than the average African country inasmuch as its ethnic groups do not have any cross-cutting cleavages along other identity lines such as the "joking relationships" present in West Africa (Dunning & Harrison, 2010) or religion and/or geography as can be found in countries like Botswana, Senegal, Uganda and Zimbabwe (Gubler & Selway, 2012). Moreover, Kenya also contrasts with many other countries in Africa like Liberia, Mali and Zambia, among others, in that none of its post-colonial presidents have mixed ethnic backgrounds. Finally and perhaps most importantly, Kenya is atypical among African states since it has only seen members of two ethnic groups attain the Presidency since independence, in contrast to countries like Benin, Nigeria or Zambia which have seen six or more ethnic regimes. More specifically, while a smaller number of ethnic groups in power and longer periods of time in power could potentially allow for the cleaner identification of ethnic favouritist policies, it also has the potential to overstate the degree to which Presidents favour their co-ethnics. We can observe more systematically if Kenya is a typical African country in terms of its ethnic power relations by listing all ethnically diverse African states[5] by their number of post-colonial presidents, the average length of tenure of each president, the number of ethnic groups with co-ethnic Presidents, and the average length of each ethnic regime in Table 1. While Kenya's number of presidents and their average tenure is well within the norm for the continent, Kenya's two presidential ethnic groups with an average length of 29.5 years in office are both more than one standard deviation from the African mean of 3.6 presidential ethnic groups and 18.2 years per ethnic regime. In other words, evidence of ethnic favouritism in Kenya should not necessarily be seen as indicative of the experience of the rest of the continent.

A third issue with the scholarship on ethnic favouritism is the measurement of co-ethnicity. More specifically, in contrast to data on political partisanship that can establish "core" and "swing" voters in established democracies based on extensive survey data, identifying co-ethnics requires accurate census or survey data which historically has been in short supply in developing countries, particularly in Africa.[6] The result is that scholarship on ethnic favouritism has measured co-

[3] This last point finds support in Burgess et al. (2015) but not in a substantial and growing body of literature that now suggests that ethnic favouritism can coexist with democracy (De Luca et al., 2018; Dickens, 2018; Franck & Rainer, 2012; Kramon & Posner, 2016; Walters, Bittencourt, & Chisadza, 2023).

[4] It could be argued, as indeed De Luca et al. (2018) do, that nighttime luminosity captures multiple outcomes in a single measure. However, there is now a growing literature on the inaccuracies of nighttime luminosity data (Gibson, Olivia, & Boe-Gibson, 2020; Gibson, Olivia, Boe-Gibson, & Li, 2021; Keola, Andersson, & Hall, 2015), especially in rural areas (which is of particular concern in Sub-Saharan Africa).

[5] We define "ethnically diverse" here as states which have an ethno-linguistic fractionalization (ELF) index of more than 0.5, as measured through the Afrobarometer and DHS datasets we describe below.

[6] Morning (2008) finds that African censuses are the least likely among all regions of the world to contain data on ethnic identification.

Table 1
Ethnic regimes across Sub-Saharan Africa.

Country	# of Presidents	Average Regime Tenure	# of Ruling EGs	Average EG Tenure
Benin	11	5.7	6	10.45
Burkina Faso	10	6.3	2	31.5
Cameroon	2	31.5	2	31.5
Central Afr. Rep.	9	7	5	12.6
Chad	6	10.5	3	21
Congo, Rep. of	8	7.9	3	21.1
Congo, D. Rep. of	5	12.6	4	15.8
Eritrea	1	31	1	31
Ethiopia	3	11	3	11
Gabon	3	20.7	2	31.1
Gambia, The	3	20.3	3	20.3
Ghana	14	4.8	5	13.4
Guinea	6	10.8	3	21.6
Guinea-Bissau	11	4.5	4	12.4
Ivory Coast	5	12.4	3	20.7
Kenya	**5**	**11.8**	**2**	**29.5**
Liberia	3	6	3	6
Madagascar	12	5.4	2	32.4
Malawi	6	9.5	3	19
Mali	10	6.3	3	21
Mozambique	4	12	3	16
Namibia	3	11.3	2	17
Niger	11	5.6	4	15.4
Nigeria	15	4	8	7.5
Senegal	4	15.5	3	20.7
Sierra Leone	11	5.9	6	10.8
South Africa	5	6	4	7.5
Tanzania	6	10.3	5	12.4
Togo	5	12.8	3	21.3
Uganda	7	8.6	5	12
Zambia	8	7.3	6	9.7
Mean	*6.8*	*10.8*	*3.6*	*18.2*
Standard Dev.	*3.7*	*6.9*	*1.5*	*7.9*

Notes: Tenure is calculated from independence to the present, except for the cases of Ethiopia, Liberia and South Africa, where we calculate tenure from the accession of the first post-civil war/post-apartheid leader in each country, namely 1991, 2006 and 1994, respectively. The Ethiopian data measures tenure of its Prime Ministers, not Presidents. The table only considers ethnically diverse countries in Africa and thus excludes countries with an ELF Index < 0.5, namely Botswana, Burundi, Eswatini, Lesotho, Rwanda and Zimbabwe. The ethnic identity of African presidents was calculated by the authors from publicly available sources.

ethnicity in often crude or simplistic ways, either by coding a given region or district as co-ethnic with a dummy variable (Burgess et al., 2015), using outdated maps of ethnic homelands (De Luca et al., 2018) or using current survey data on respondents' ethnic identification to generate historical data on co-ethnicity for respondents during their childhood or at the time of birth of respondents' children up to 38 years in the past.[7] These strategies are clearly suboptimal for various reasons, including evidence that ethnic identification in Africa is endogenous to economic and political phenomena (Green, 2021; 2022) and evidence on the problems of using recall data from respondents on past events (De Nicola & Giné, 2014), particularly as regards the effects of politics on memory (Ansolabehere & Hersh, 2017).

Indeed, the measurement of co-ethnicity is even more important when noting that one of the key questions in this literature is the degree to which ethnic favouritist policies target areas that are majority co-ethnic with the President and/or co-ethnic individuals. This distinction is particularly important upon recalling that the "core" voter model upon which the ethnic favouritism literature is based harkens back to US urban machine politics where political machines competed with each other to develop core constituencies (Dixit & Londregan, 1996). The assumption in the model is that politicians know their core constituents well and are thus more efficient at targeting goods to them, which then generates distributive politics that provides preferential treatment to core supporters. Yet, as noted by Van de Walle (2007), this machine politics analogy is poor in describing post-colonial African politics, in part because of the way that African political parties have mobilized around ethnicity and have thus generated "core" constituencies which tend to be relatively ethnically homogenous at the local level. Thus, in contrast to the historical US urban context where machine politicians generated core constituencies through the regular provision of goods and "jobs for the boys," African politicians can arguably rely upon pre-existing ethnic identities to generate their core supporters and face few incentives to over-provide public services to homogenous co-ethnic areas.

Yet much of the literature has been unable to distinguish between geographical vs individual co-ethnicity, either because the data exists at the geographical level in the form of road or school construction (André, Maarek, & Tapo, 2018; Burgess et al., 2015) or exists at the individual-level in the form of historical data on schooling and infant mortality that does not contain information on where survey respondents lived when they were in school or gave birth or on how they identified ethnically when they were younger (Franck & Rainer, 2012). Those attempts that have been made to answer this question have largely either used cross-sectional data (Ahlerup & Isaksson, 2015), or rely upon data from a very limited number of countries and surveys (Dickens, 2018; Kramon & Posner, 2016; Li, 2018).[8] To date the one attempt to investigate the individual vs. geographic effects of co-ethnicity is Beiser-McGrath, Müller-Crepon, and Pengl (2021), who regress infant mortality on both individual and district co-ethnicity using DHS data, which they find are both positive and statistically significant. They note, however, that migration patterns could bias their results if they co-vary with co-ethnicity, but are unable to investigate this possibility statistically. (Their solution to the lack of data on historical residence patterns is to assume that migration is positively associated with levels of education and then drop more educated mothers from their sample).

A fourth and final problem with the ethnic favouritist literature is its inductive nature, whereby testing of both elements of the "quid-pro-quo" theory is largely absent. More specifically, the literature has focused upon only one side of the ethnic favouritist relationship, namely demonstrating the preferential provision of goods to co-ethnics, without giving any attention to the relationship between goods provision and the degree of support supplied by co-ethnics to the president. Indeed, only recently has the literature on ethnic voting moved beyond a simple theory of psychological or "expressive" support for co-ethnic candidates (see Ishiyama, 2012 for an overview), with scholarship suggesting that co-ethnics provide more support for co-ethnic politicians than non-co-ethnic politicians but that this support is contingent upon good performance (Adida, Gottlieb, Kramon, & McClendon, 2017; Carlson, 2015). The relationship between goods provision and co-ethnic support thus remains an open question.

To recap our points in this section, there is now a substantial literature that argues for the existence of ethnic favouritism in Africa, but much of this literature relies upon a single outcome, a single country case study, or both. Moreover, this literature is largely unable to tackle questions around whether co-ethnic individuals and/or co-ethnic areas are targeted for ethnic favouritist policies due to data limitations. Finally, there has been very little attempt to test both sides of the "quid-pro-quo" theory by examining how goods provision has impacted co-ethnic support for the president. We address all of these points below.

[7] DHS surveys often include data on children of respondents up to the age of 38.

[8] In his analysis of individual-level DHS data Dickens (2018) uses 33 surveys across 13 countries.

3. Data and specification

As noted above, we draw from two different sources for our data, namely individual-level survey data from the Afrobarometer and the DHS. Both sources have long been used for studying the politics of development in contemporary Africa due to their wide-spread coverage across time and space. The DHS dates back to the late 1980s while Afrobarometer surveys started in the late 1990s (with information on ethnic identification dating back to the mid-2000s); however, the gap between surveys is on average shorter for the Afrobarometer meaning that both surveys reached their eighth round around the year 2020. Other key differences between the surveys include the focus on women of reproductive age (15–49) for the DHS while the Afrobarometer surveys adult men and women of all ages, the much larger sample sizes for the DHS and the focus on more democratic countries for the Afrobarometer due to the political nature of many of its questions.

Neither the Afrobarometer nor the DHS are longitudinal surveys and thus cannot be used in their raw form to trace the existence of ethno-regional favouritism across time; moreover, earlier DHS surveys were not geocoded beyond the level of the region and Afrobarometer data was only released in geocoded form to researchers in 2017. For this reason earlier scholarship into ethnic favouritism could not examine the contemporaneous relationship between ethnicity and other types of public goods provision at both the individual and district level. Yet the recent addition of new rounds of geocoded data to both the Afrobarometer and the DHS means that there is now a substantial amount of data on African countries that can be used for the analysis of many different contemporary outcomes dating back over 30 years. As such our DHS dataset encompasses up to 91 surveys from 21 countries from 1988 to 2022, compared for instance to only 45 surveys from 17 countries from 1986 to 2009 used by Franck and Rainer (2012),[9] while our Afrobarometer dataset comprises up to 134 surveys from 27 countries from 2005 to 2022.

In both cases we used geocoded data to generate country-district fixed effects that allows us to control for geographic variation in access to public and private goods. Like Burgess et al. (2015) we choose to use geographic fixed effects based on country-districts rather than on ethnic-group or language-group homelands, as some others have done in their analysis of ethnic favouritism (De Luca et al., 2018; Dickens, 2018), for three reasons. First, as noted above ethnic identities are constantly in flux for political and economic reasons, especially in Africa where individuals have a long history of assimilating into groups that have more access to political power (Green, 2021), and thus relying upon outdated ethnographic maps from the mid-20th century to study contemporary outcomes could be highly misleading. Secondly, if we are studying the mechanisms by which central governments allocate resources to the co-ethnic brethren of the President, then it is highly likely that such allocations would consist of transfers to individual local-level governmental units rather than ethnic homeland areas per se, a point to which we return in our qualitative discussion below. Thirdly, we have sub-national jurisdictional data but lack geo-coordinates for a substantial number of the DHS surveys in question – including all three surveys under President Daniel arap Moi's rule in Kenya, for example – which means that we would have to drop these surveys from our analysis if we were to use geo-coded ethnic homelands as our unit of observation.

As for constructing our country-district fixed effects, in many cases the names of the districts were included in the raw survey data, while in others we used geo-coordinates to identify a stable list of districts over time. In three cases, namely the Central African Republic, Nigeria and Uganda, we chose to use the highest level of administrative unit rather than the second-highest level, both because of a lack of consistent data at the lower tier and because in each case the number of observations per unit at the highest level was comparable to other countries in our database, as seen in Tables A1 and A2. (Our results are robust to the use of country-region fixed effects instead).

The dependent variables for the Afrobarometer and DHS data are based on direct survey responses as well as indices constructed as the arithmetic mean across each type of outcome, and for the Afrobarometer we have both objective and subjective outcomes. More specifically, the objective Afrobarometer outcomes include an infrastructure index (from enumerator responses on the existence of paved roads, piped water, electricity, sewage system, post offices, schools, police stations, and health clinics in the enumeration area), an asset index (from respondent answers to questions about the ownership of a radio, TV, car/motorcycle and mobile phone), a poverty index (from respondent answers to questions about whether they went without food, drinking water, medical care and income over the course of the previous year), a full-time employment dummy and a government employment dummy. (Using an unemployment dummy instead of the full-time employment dummy yields almost identical results.) The subjective Afrobarometer outcomes include a government performance index (from respondent answers to questions on how the central government is handling the economy, job creation, keeping prices down, narrowing income gaps, improving health services, addressing educational needs, providing water and sanitation services, ensuring there is enough food to eat, fighting corruption, maintaining roads and bridges, combatting HIV/AIDS and providing a reliable electricity supply), if the respondent's ethnic group is treated unfairly by the government, the overall direction of the country, a public services index (from respondent answers to question about how easy it is to obtain identity documents, help from the police, medical treatment, help from teachers and school officials, and household services) and the respondent's current living conditions, both in absolute terms and relative to others. For the DHS the outcomes are an infrastructure index (from respondent answers on access to piped water, electricity and a flush toilet), an asset index (from respondent answers on the ownership of a radio, TV, refrigerator, bicycle, motorcycle and car) and a wealth index, which is already compiled by the DHS and is based on access to public and private goods. The descriptive statistics for both data sources are given in Table A3.

For our explanatory variables we used the survey data itself to code both the individual-level measure of co-ethnicity as well as the proportion of residents by district who were co-ethnic to the President at the time of the survey. As regards coding the President's ethnicity, we list the Presidents included in the Afrobarometer and DHS datasets in Appendix A4, along with their dates in power and ethnic identity; in cases where they have multiple ethnic heritages via their parents we list both identities and code individuals and districts as co-ethnic accordingly. We excluded countries from our analysis for which we lacked contemporary sub-national data on ethnicity, such as Angola, Burundi and Rwanda, or which are largely ethnically homogenous (like Lesotho and Eswatini). Finally, we included Ethiopia in the DHS dataset by coding the ethnicity of the Prime Minister, rather than the President, inasmuch as real political power in the country lies with the former rather than the latter.

Our basic model is to regress a public/private goods outcome on individual-level co-ethnicity, the proportion of the population that is co-ethnic to President and an interaction of these two terms, along with country-district fixed effects and country-round fixed effects. We also add ethnic-cluster fixed effects which we construct by identifying all ethnic groups which has held power in each country and/or contain more than 10 % of the country's population, with a residual category for

[9] In cases where the DHS has more than one survey per country-round, we always chose the geo-coded survey that had the highest number of respondents. We supplemented eight surveys from the UNICEF Multiple Indicator Cluster Survey (MICS) to the DHS dataset, since the MICS data, like the DHS, focusses on demographic and health outcomes for women aged 15–49 across the developing world, including in a number of countries not covered over the same time span as the DHS. The MICS data is not, however, geocoded, and thus we are limited to datasets that include district or regional-level data in their data. (We code the round data for these eight surveys as if they were conducted by the DHS.) Our results are robust to dropping the MICS data from our analysis.

all other groups; we find this method superior to a more detailed ethnic group fixed effect as smaller groups are difficult to track across country-rounds, especially for the Afrobarometer (cf. Franck & Rainer [2012] who use a similar construction).

Our specification takes the following form:

$$y_{reict} = \theta_{ic} + \beta_{ct} + \phi EC_{ec} + \lambda CE_{reict-1} + \xi P_{ict-1} + \psi(CE_{reict-1} * P_{ict-1}) + \gamma \boldsymbol{X}_{reict} + \varepsilon_{reict} \quad (1)$$

with y_{reict} as a public/private goods outcome variable for respondent r from ethnic group e in district i in country c in round t, θ_{ic} as the country-district fixed effect, β_{ct} as the country-round fixed effect, EC_{ec} is the ethnic-cluster fixed effect for ethnic cluster e in country c, $CE_{reict-1}$ is the lagged co-ethnic dummy for respondent r, P_{ict-1} is the lagged proportion of the district that is co-ethnic to the President, $CE_{reict-1} * P_{ict-1}$ is the interaction term and $\mathbf{X}_{reict}$ is a vector of individual-level controls (specifically the age of the respondent and female and urban residence dummy variables), while ε_{reict} is a normally distributed error term, following $N(0, \sigma_{\varepsilon}^2)$. We use a one-year lag from the mid-point of each survey to code the ethnicity of the President for the objective outcomes, on the basis that government policies are to at least some degree generated on an annual budget cycle and take time from policy approval to implementation, with our results robust to coding the President's ethnicity contemporaneously or with a two-year lag (as we discuss more below). As with other similar literature using contemporaneous data on ethnic or regional favouritism (De Luca et al., 2018; Hodler & Raschky, 2014), the inclusion of the country-round fixed effect (β_{ct}) is particularly important inasmuch as it allows us to control for country/survey specific factors, including small changes in questions, the order of questions, time of year and other related issues. We cluster the standard errors at the level of the country-district and weight each country-round equally.

4. Results

We begin our set of results in Table 2, where we use objective measures of goods provision and wellbeing from the Afrobarometer data in columns 1–5 and DHS data in columns 6–8. The results are consistent across all eight outcomes and both datasets, which show that individual-level co-ethnicity is positively associated with access to public and private goods, but that this access declines as the proportion of co-ethnic residents increases. Similarly, non-co-ethnics benefit from living in co-ethnic areas, especially as the percentage of co-ethnics increases for most of the results in Table 2. Summarising the size of the effects across all of the outcome variables, we find that the effect of going from being non-co-ethnic to co-ethnic leads to an average increase of 25 per cent as a proportion of the mean value of the Afrobarometer outcome variables and a 12 per cent increase for the DHS variables. Similarly, we find that a one standard deviation increase in the proportion of the district population which is co-ethnic to the President is associated with an average increase of 16 per cent increase as a proportion of the mean value of the Afrobarometer outcomes and a 9 per cent increase for the DHS variables. However, as indicated in Figs. 1-8, the interaction effect generates a positive coefficient for co-ethnic individuals in areas with few co-ethnics, but a null or negative effect for co-ethnics in majority co-ethnic districts.

Figs. 1-8**: Interaction Results from** Table 2.

These results are consistent in demonstrating a positive effect for co-ethnics in non-co-ethnic areas, which suggests that the vast majority of co-ethnics are not benefitting from having a co-ethnic President. To visualize the proportion of co-ethnics who actually benefit from a co-ethnic President, we present the empirical cumulative distribution function plot of co-ethnics of the President by the proportion of co-ethnics in each district for both the Afrobarometer and the DHS in Figs. 9 and 10. The proportion of co-ethnics who are living in districts which are less than 20 % co-ethnic – which is the point at which the individual co-ethnic coefficient is no longer positive and statistically significant for the Infrastructure Index (Afrobarometer), Poverty Index (Afrobarometer), Full-Time Employment (Afrobarometer) and Government Employment (Afrobarometer) variables – is around 15 % for both measures, while the proportion living in districts less than 30 % co-ethnic – at which all but one of the eight measures from Table 1 are no longer statistically significant – is under 30 % for both measures.

Figs. 9-10**: Empirical Cumulative Distribution Function Plot of Co-Ethnic President Across Co-Ethnic Districts**.

In Table 3 we move to the six subjective measures from the Afrobarometer as the dependent variable. The results in Table 3 are identical to those of Table 2 as regards the signs on the individual co-ethnic variables and the interaction variable, but the magnitude of the non-interacted coefficients are larger. As seen from Figs. 11-16, here the evidence suggests that, unlike with the objective outcomes in Table 2, the majority of co-ethnics perceive themselves as enjoying a high level of wellbeing and government services. However, the fact that the interaction variable remains statistically significant, including for unfair treatment by the government, suggests that co-ethnic individuals in co-ethnic districts are aware of the relatively poor levels of public and private goods provision in their area.

Figs. 11-16**: Interaction Results from** Table 2.

We break down the indices for both datasets in Tables A5 through A11, where we show that, in all cases, the results are not driven by one outcome. (In one case, the Government Service Index, none of the sub-components are statistically correlated with the co-ethnicity interaction variable, which we attribute to the small number of observations per outcome.)[10] In one case, namely bicycle ownership with the DHS data, the signs are reversed for both co-ethnicity variables and the interaction variable; note, however, that we fail to find a single outcome where the individual co-ethnicity variable is consistently positive across all measures of district-level co-ethnicity. Note as well that the only infrastructure variables that are statistically associated with the co-ethnic variables are those that can be altered relatively quickly, such as paved roads and electricity (which could only require [re]paving pre-existing roads and fixing electricity connections, respectively), while infrastructure that requires long-term investments like schools, health clinics and post offices that are often initiated and completed by different regimes are not statistically associated with the co-ethnicity variables. In Table A12 we re-examine the results from Table 2 using no lag or a two-year lag, again with only minor differences from a one-year lag (which we suggest derives at least in part to the fact that the tenure of African presidents tend to be long and thus there is little turnover from year to year).

Finally, in Table A13 we measure co-ethnicity at the regional level and employ regional fixed effects instead of district fixed effects, as the Afrobarometer district-level data may not be representative due to the fact that surveys are stratified by region rather than district. Moreover, the average number of observations per district per round can be as low as 12 for the Afrobarometer data, as seen in Table A1. However, the results in Table A13 are almost identical to those in Table 1, with the exception of the Infrastructure Index in column #1.

There are two points to make about these sets of results. First, it is clear that a small number of co-ethnics who live in non-co-ethnic areas appear to benefit from having a co-ethnic President, but there is no evidence that most co-ethnics – i.e., those who live in districts which are more than ~ 30 % comprised of co-ethnics – see any objective benefits of co-ethnicity. These results are consistent with the epigraph from Uganda as well as the qualitative evidence from Nigeria discussed below.

The second point to make is to note of the disjuncture between objective and subjective outcomes, such that there are far fewer co-

[10] A significant number of respondents answer the Government Service questions by stating that they "never try" to access the service in question, thereby reducing the number of observations per outcome.

Table 2
Ethno-regional favouritism in contemporary Africa, objective outcomes.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Data Source	Afrobarometer	Afrobarometer	Afrobarometer	Afrobarometer	Afrobarometer	DHS	DHS	DHS
Dependent Variable:	Infrastruct. Index	Assets Index	Poverty Index	Full-Time Employ.	Govern. Employ.	Infrastruct. Index	Assets Index	Wealth Index
Co-Ethnic	0.012*	0.039***	−0.031***	0.018*	0.026***	0.032***	0.017***	0.024***
President (t-1)	(0.007)	(0.006)	(0.007)	(0.009)	(0.008)	(0.005)	(0.004)	(0.006)
Co-Ethnic	−0.014	−0.003	−0.030***	0.059***	0.041***	0.036***	0.022***	0.029***
District (t-1)	(0.017)	(0.010)	(0.012)	(0.018)	(0.013)	(0.011)	(0.006)	(0.010)
Co-Ethnic Pres. (t-1) *	−0.033**	−0.086***	0.069***	−0.084***	−0.081***	−0.081***	−0.047***	−0.074***
Co-Ethnic D. (t-1)	(0.015)	(0.012)	(0.013)	(0.017)	(0.014)	(0.012)	(0.008)	(0.013)
Country-Round FEs	yes	yes	yes	yes	yes	yes	yes	yes
District FEs	yes	yes	yes	yes	yes	yes	yes	yes
Ethnic Cluster FEs	yes	yes	yes	yes	yes	yes	yes	yes
Countries	27	27	27	27	27	21	21	20
Country-Rounds	134	134	134	134	75	93	93	83
Districts	1418	1419	1419	1419	1389	955	955	933
Observations	191,400	191,143	191,278	190,949	101,015	924,289	912,193	889,882

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the country-district level are in parentheses. All specifications include individual controls for age and urban residence while specifications 1–5 also contain a female dummy variable. Observations are weighted equally by country-round.

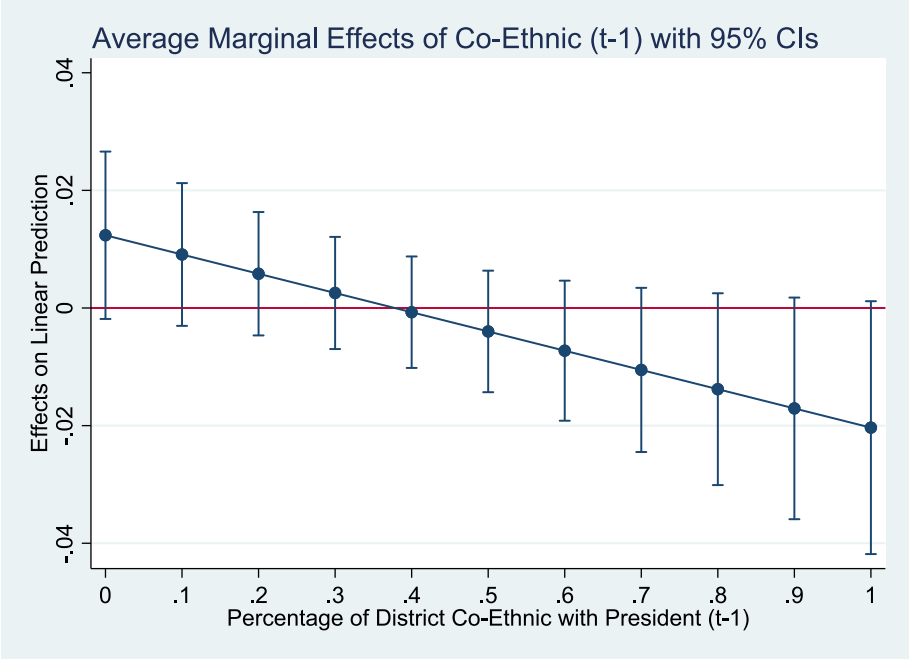

Fig. 1. Infrastructure index (Afrobarometer).

ethnics who benefit from the distribution of public and private goods compared to the number who perceive higher quality government services and performance and who rate their quality of life as high. These results are consistent with the "psychic goods" theory discussed above, such that co-ethnics enjoy non-material psychological benefits from having a co-ethnic in power. They are not, however, consistent with either the "ethnic altruism" or the "quid-pro-quo" theories, inasmuch as the results do not suggest that co-ethnics objectively benefit from having a co-ethnic President.

We now turn to another method to test the validity of the "psychic goods" theory against the "quid-pro-quo" theory. More specifically, the basis of the "quid-pro-quo" theory is that goods are supplied to co-ethnics in return for political support. In other words, if we were to regress political support onto the same co-variants as in Tables 1 and 2, then a result that is consistent with the "quid-pro-quo" theory would yield coefficients with the same signs, namely a positive relationship with individual-level co-ethnicity and a negative relationship with the interaction term between individual and district-level co-ethnicity.

We can test this theory by using as our dependent variable five Afrobarometer questions which collectively measure respondent support for the national government, namely questions on presidential performance, trust in the president, belief that the president is corrupt, trust in the ruling party and voting support for the ruling party. In Table 4 we regress all five outcomes on the same RHS variables as in Tables 1 and 2; however, in contrast to Tables 1 and 2, we find that both measures of co-ethnicity are positive – with consistently higher coefficients for the co-ethnic district variable than the co-ethnic individual variable – and statistically significant in their relationship with the outcome variables, while the interaction term is not statistically significant except in column #5 (which has a large number of missing observations due to respondents refusing to answer the question or answering "don't know"). (See as well Table A14, where we use region instead of district fixed effects, with almost identical results.) In other

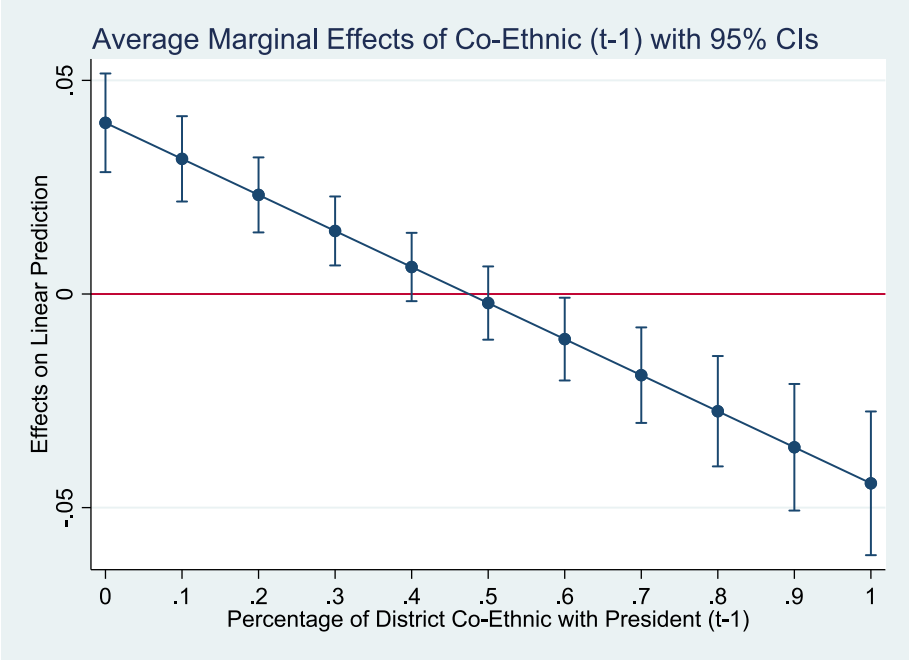

Fig. 2. Asset index (Afrobarometer).

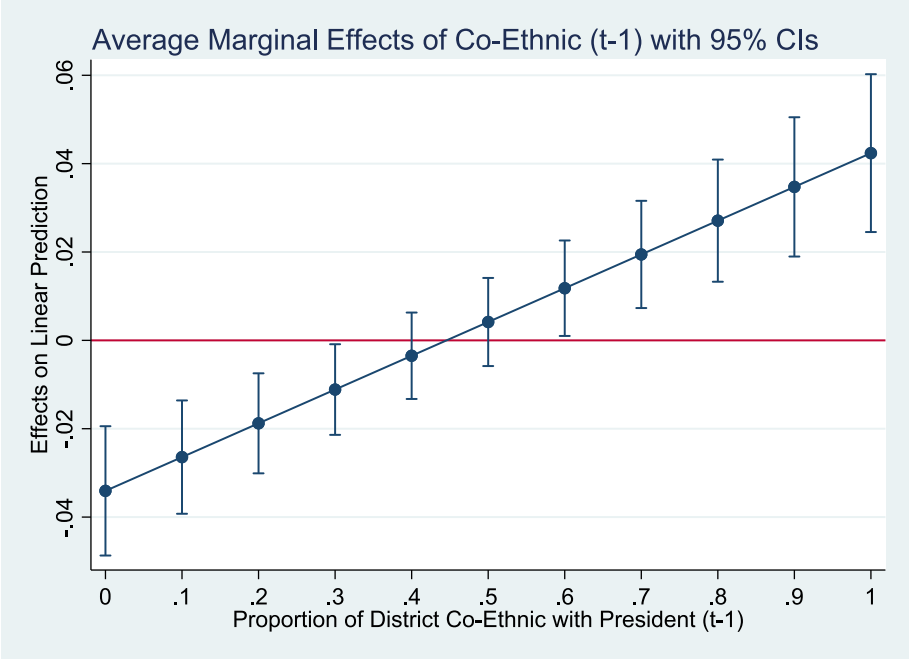

Fig. 3. Poverty index (Afrobarometer).

words, residents in co-ethnic areas appear to support their president and ruling party even when there is little to no evidence that they actually benefit from government policies.[11]

One potential explanation for these results is that, for whatever reason, co-ethnics have higher ratings of government officials in general than non-co-ethnics, regardless of whether the government official is co-ethnic or not. We can test this theory by taking Afrobarometer measures of trust, performance and corruption for public officials not associated with the central government and regressing them on the same covariates as in Table 4. More specifically, we have measures for trust in and corruption of the police, trust in and corruption of the judiciary, and performance, trust in and corruption measures of local government councils. However, the results, as seen in Table A15, show that neither measure of co-ethnicity is statistically correlated with any of these outcomes, which is consistent with the idea that co-ethnic support for government institutions is limited to the national government and does not extend to other state officials or local government councils. Here again we find support for the "psychic goods" argument.

[11] Note that the results from Table 4 also support Ichino and Nathan (2013)'s evidence from Ghana on the support given by non-co-ethnics to the President when they live in a co-ethnic area.

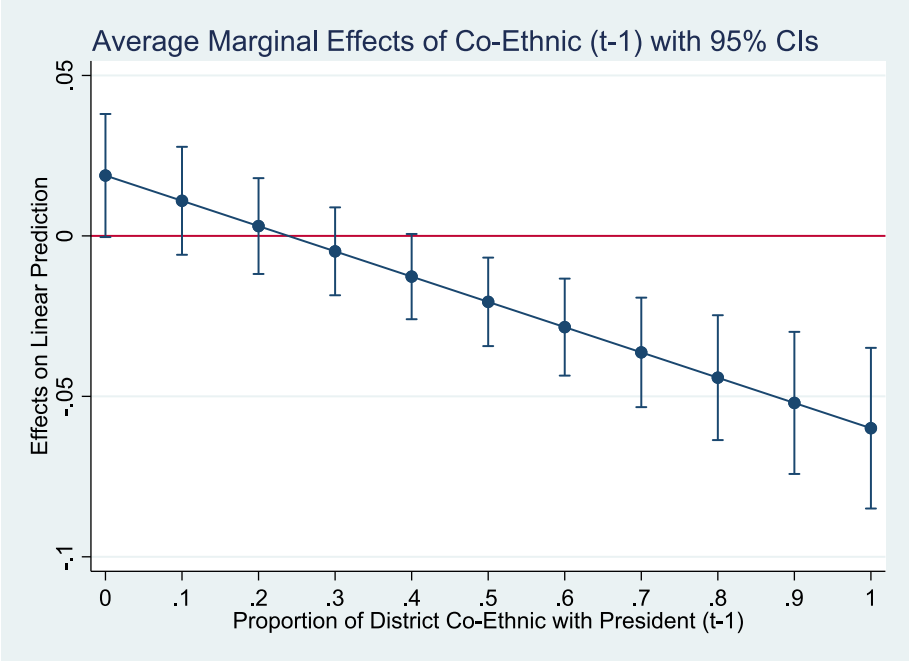

Fig. 4. Full-time employment (Afrobarometer).

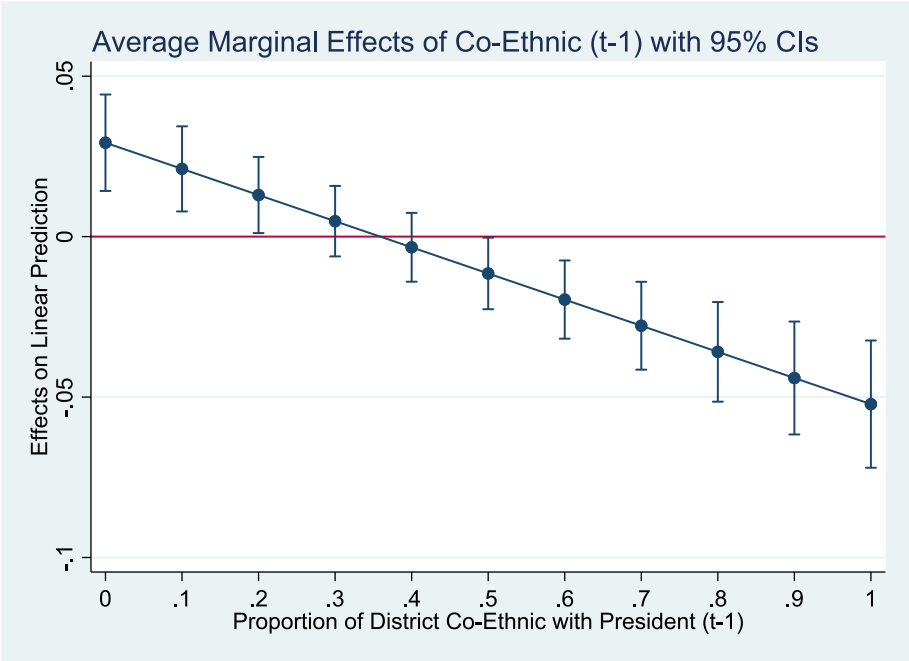

Fig. 5. Government employment (Afrobarometer).

5. Discussion and qualitative evidence

The aforementioned evidence suggests that non-material or "psychic" benefits drive co-ethnics of the President in co-ethnic areas to support the government, even when they do not actually benefit materially compared to other citizens. Here we present a brief case study of ethnic favouritism in Nigeria, which provides further qualitative evidence for our findings. Goodluck Jonathan was President of Nigeria from May 2010 to May 2015 and hails from the oil-rich Bayelsa state, where a majority of the population identifies with Jonathan's Ijaw ethnic group, in the southern Niger Delta or South-South region.[12]

There is some evidence that Jonathan managed to channel state resources towards his home region during his Presidency, such that the South-South region received 86 % of all new government contracts approved by the Federal Executive Council (FEC) for the whole country between March and August 2011, for instance, of which almost half

[12] The South-South region is one of six of Nigeria's "geopolitical" zones, and consists of Akwa Ibom, Bayelsa, Cross River, Delta, Edo and Rivers states.

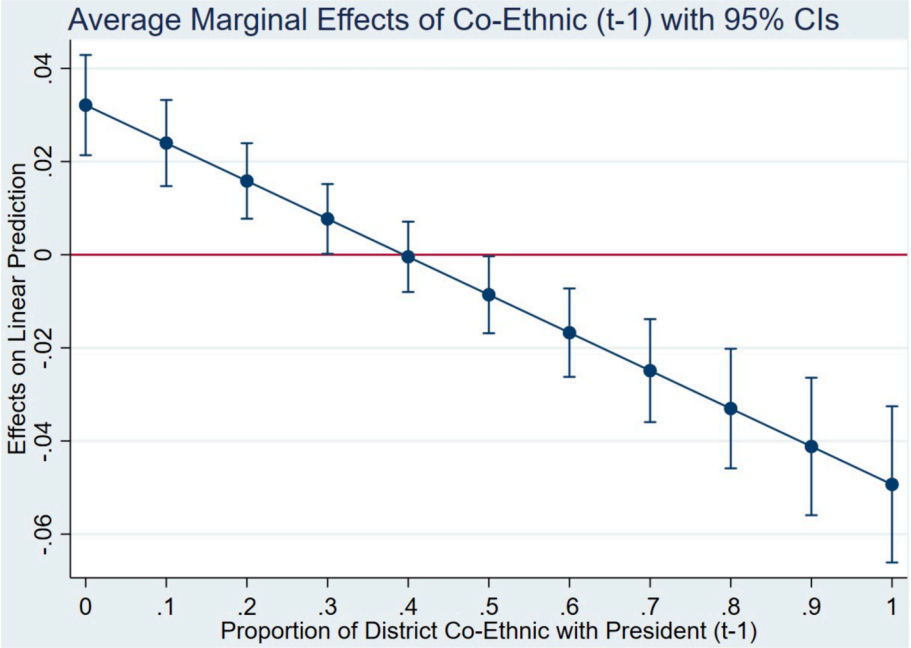

Fig. 6. Infrastructure index (DHS).

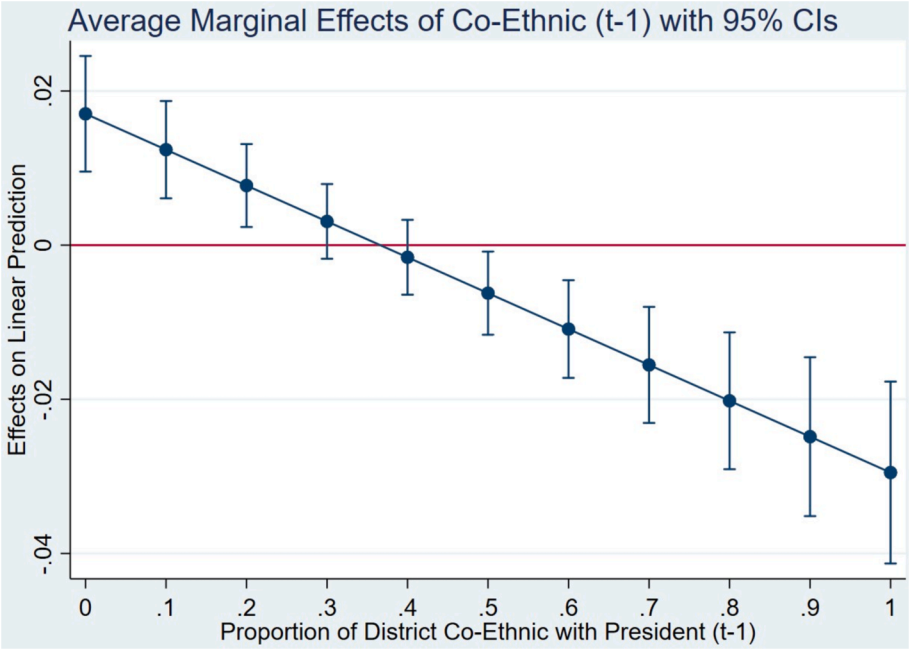

Fig. 7. Asset index (DHS).

were for road projects (Abdallah, 2011). The same year Jonathan oversaw the creation of the Federal University, Otuoke, in his hometown in Bayelsa state, while a year later the FEC also approved a new 2.8 billion Naira ($17.3 million) general hospital in Otuoke despite the fact that Nigerian law dictates that general hospitals are the financial responsibility of state governments (Ekott, 2013). Fellow Ijaw elites benefitted from Jonathan's rule, including the appointment of Deziana Allison-Madueke to the lucrative post of Minister of Petroleum, and the awarding of a $103 million contract to a private military company linked to an Ijaw former militant, Government Oweizide Ekpemupolo (Oyefusi, 2014, pp. 530-531).

However, as with the larger literature on ethnic favouritism this evidence of favouritist policies towards co-ethnics can also be paired with counter-evidence suggesting that Jonathan's government allocated foreign aid, for instance, to Ijaw areas at below the national average (Lu, 2018, p. 42). Moreover, there is very little evidence that whatever funds were spent in the President's home state produced greater access to assets or public goods provision for residents. Indeed, a good proportion of Jonathan's supposed "pork-barrel" achievements for Bayelsa state were part of broader investments in public services across the country; the new university in Otuoke, for instance, was actually one of eleven federal universities created across the country in 2011, including the first-ever federal university in Katsina state in northern Nigeria, the home state of both Jonathan's predecessor (Umaru Yar'Adua) and

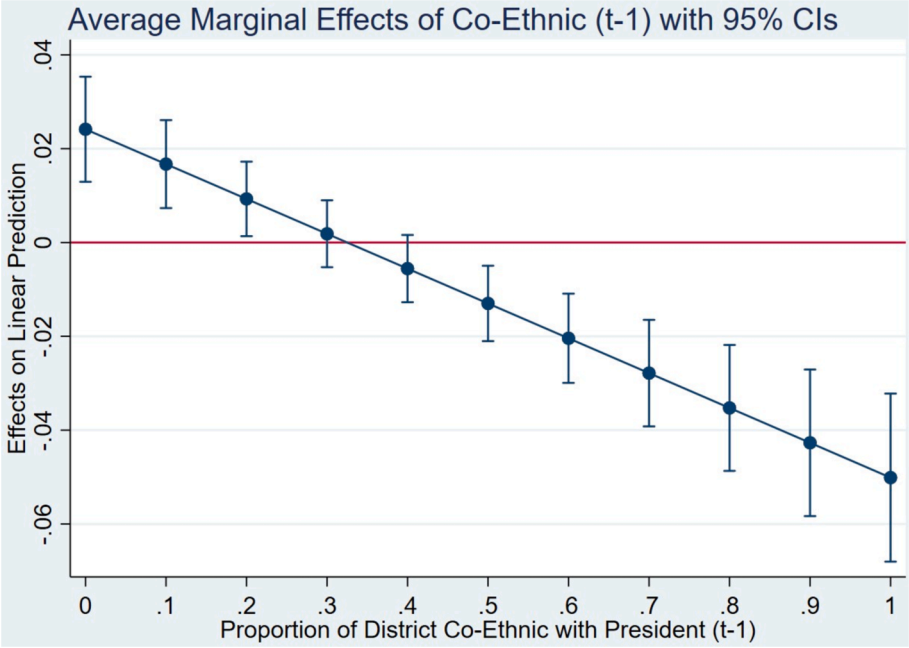

Fig. 8. Wealth index (DHS).

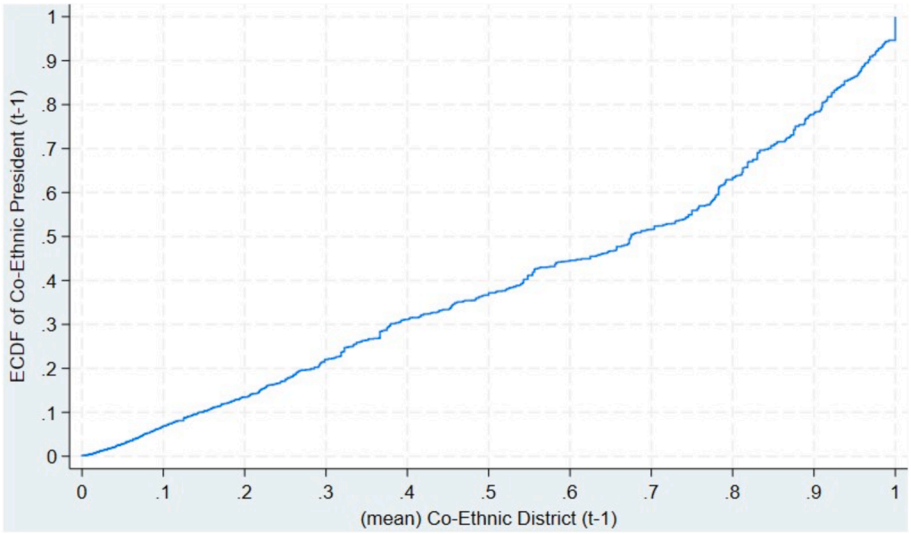

Fig. 9. Afrobarometer.

successor (Muhammadu Buhari) as President. In this sense Jonathan's public spending patterns were no different from the post-colonial educational policies of various Kenyan presidents who have promoted educational convergence across the country (Simson & Green, 2020).

This relative lack of local development did not go unnoticed among locals: for instance, an activist from Bayelsa state who was arrested and jailed for making anti-government comments on Facebook complained in 2014 that

> [Jonathan] has been in government for the past 14 years but not one kilometer of road to show for it in [Jonathan's home town of] Ogbia. He has moved from Deputy Governor to Acting Governor and to Governor. From Vice President to Acting President and now President for the past four years, yet we cannot be proud of one kilometer of road in our area. The major link road from Ogbia community to Oloibiri, where oil was first found, has been cut off by flood and till date that road is still like that. We don't have electricity for many years and no water. Are we going to wait till we have a Hausa or Yoruba man as president before those things will be fixed? (Adebayo, 2014).[13]

At the end of Jonathan's tenure as President in 2015, participants at a community meeting told a local journalist that, "for the six years they were privileged to have produced the President, the area has little or nothing to show for it, as most of the jobs approved were awarded to companies owned by Jonathan's friends. They said the contractors have refused to execute the jobs and Jonathan has equally refused to call them to order" (PM News, 2015). Another source noted that "the president has done his lot by ensuring that money is released for developmental

[13] Evidence from the Afrobarometer backs up this assessment: the proportion of roads in the South-South region that were recorded as paved dropped from 88.8% in 2008 to 76.9% in 2012 and 63.8% in 2015.

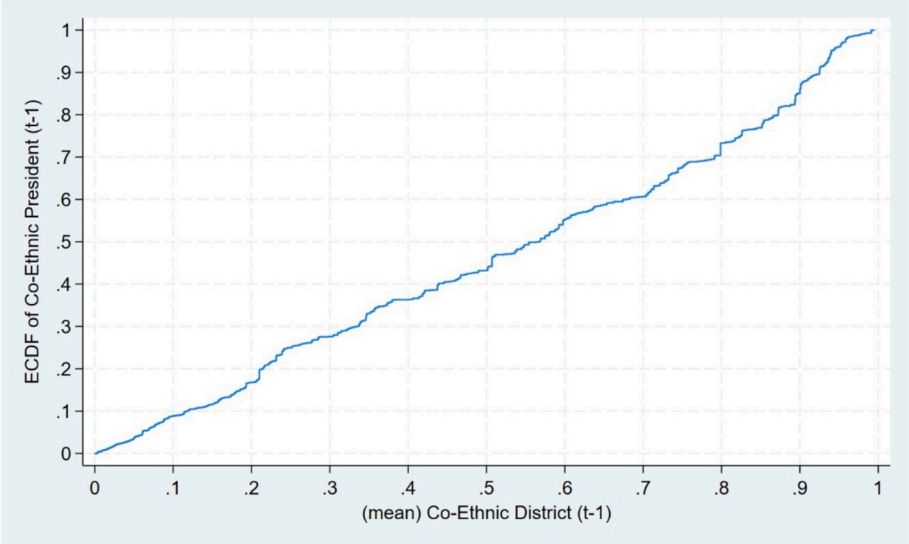

Fig. 10. DHS.

Table 3
Ethno-Regional Favouritism in Contemporary Africa, Subjective Outcomes.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Government Perform. Index	Ethnic group treated unfairly	Direction of Country	Government Services	Living Conditions	Relative Living Conditions
Co-Ethnic President	0.037***	−0.071***	0.089***	0.031***	0.051***	0.046***
	(0.007)	(0.013)	(0.014)	(0.009)	(0.010)	(0.010)
Co-Ethnic District	0.111***	−0.043**	0.163***	0.036**	0.062***	0.042**
	(0.017)	(0.022)	(0.033)	(0.016)	(0.018)	(0.020)
Co-Ethnic President	−0.036***	0.039*	−0.059***	−0.044***	−0.069***	−0.082***
* Co-Ethnic District	(0.013)	(0.021)	(0.023)	(0.017)	(0.019)	(0.020)
Country-Round FEs	yes	yes	yes	yes	yes	yes
District FEs	yes	yes	yes	yes	yes	yes
Ethnic Cluster FEs	yes	yes	yes	yes	yes	yes
Countries	27	27	27	27	27	27
Country-Rounds	135	135	106	117	135	106
Districts	1419	1419	1407	1414	1419	1392
Observations	193,152	184,833	147,036	144,4118	193,663	149,983

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the country-district level are in parentheses. All specifications include individual controls for age and female and urban residence dummies. Results for Direction of Country are only available from round 5; results for Relative Living Condition are only available through round 7. Observations are weighted equally by country-round.
Source: Afrobarometer

purposes, particularly in the area of road construction, but the people, who are given the contract keep the money in their pockets and never execute the project. And the president is handicapped because they are his people" (Nwakunor, 2015).

These failures did not, however, make Jonathan unpopular in Bayelsa during his presidency. Indeed, during the 2015 presidential campaign one voter told a local reporter "some said he has not performed. But whether he performed or not, I will vote for him. I know everyone in Bayelsa will vote for him. He's our son and brother" (The Nation, 2015). Another resident told a Reuters reporter that "we haven't seen much benefit since our brother became president… there's no light, no water here. We're disappointed." But when asked whether she would vote for Jonathan, she replied "of course: he's our brother" (Cocks, 2015).

In the end Jonathan lost the 2015 Presidential election by 54 % to 45 % to Buhari, an ethnic Fulani who was previously President from 1983 to 1985, but still won 98 % of the vote in Bayelsa state and 91 % across the South-South region. Buhari's accession was accompanied in typical Nigerian style by claims to clamp down on the corruption of the previous administration, which were seen by many of those in Bayelsa and the Niger Delta more broadly as selectively targeting people native to the area. It was thus not surprising to see a return to more violence in the Delta only months after Buhari took office as new Ijaw-led militant groups returned to attacking oil pipelines in the area (Chikwem & Duru, 2018).

6. Conclusions

In this paper we examined evidence for the existence of ethnic favouritism in contemporary Africa. Using data from both Afrobarometer and DHS surveys across many outcomes from over two dozen countries, we found evidence of the positive effects of co-ethnicity at the individual level but only in areas with a minority of co-ethnics; in contrast, we found that these positive effects decline as the proportion of co-ethnics living in an area increase. Thus for most objective outcomes there was actually a negative association between individual co-ethnicity and wellbeing in areas dominated by the President's co-ethnics; for subjective outcomes, however, the positive effect of individual co-ethnicity increased to encompass a majority of co-ethnics even as the sign on the interaction term remained negative. Coupled with evidence that individual and district-level co-ethnicity are both associated with support for the president and national government, we suggest

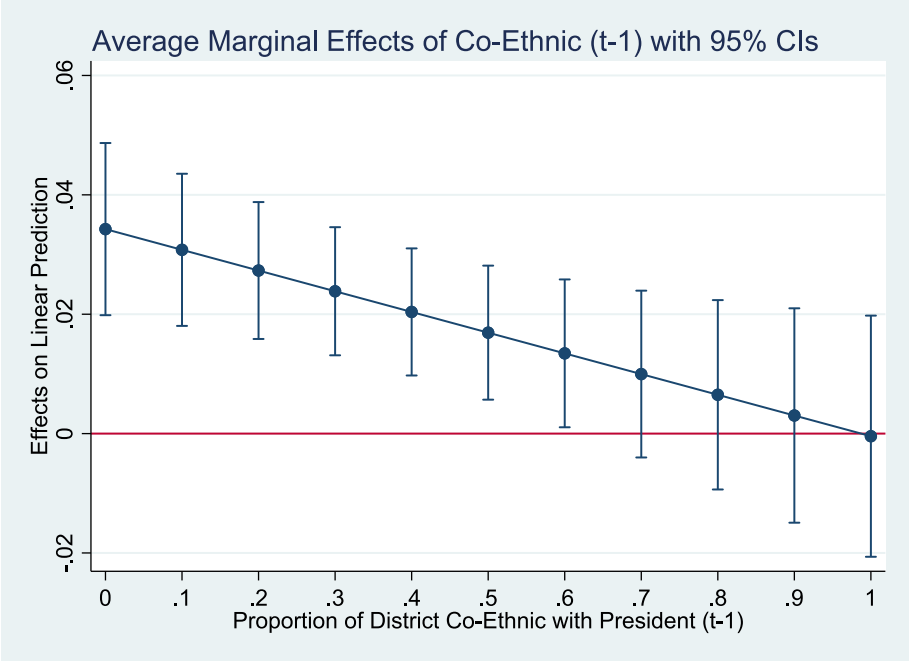

Fig. 11. Government performance index.

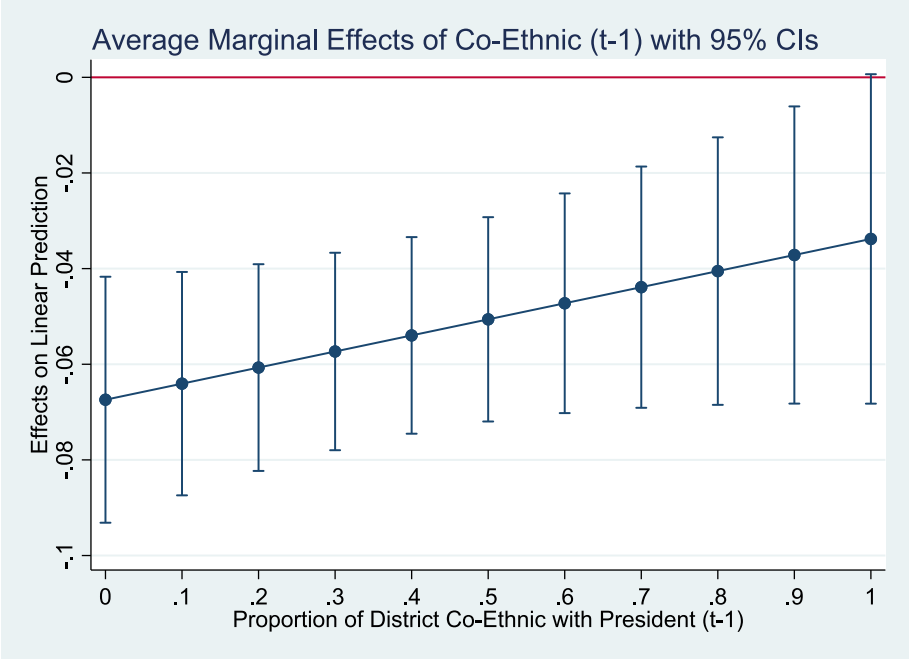

Fig. 12. Ethnic group is treated unfairly.

that our results are consistent with evidence for the existence of non-material "psychic goods" that accrue to co-ethnics who continue to provide political support to the regime despite any evidence of objective benefits. The example of Nigeria provided additional qualitative evidence for our argument.

Our paper thus serves as a corrective to wide-spread assumptions about how African Presidents provide benefits to their co-ethnics. We conclude by offering some further suggestions on how our findings can be taken alongside other scholarship on the subject, as well as some suggestions for future research. As regards the former, our results contrast sharply with the body of literature cited above and opens up a puzzle as to how our findings of the null or negative effects of co-ethnicity can be squared with other papers which find a positive effect of co-ethnicity. We suggest that there are at least three factors that could generate these supposedly contradictory findings. First, as already noted it is possible that country-specific evidence is simply not generalizable across the whole continent, especially when it is from countries with clearly delineated ethnic homelands and a small number of changes in ethnic leadership that generate long periods of rule like Kenya (Burgess et al., 2015; Kramon & Posner, 2016; Li, 2018). Similarly, our analysis is unique in its use of contemporary survey data which allows us to measure co-ethnicity at both the individual and district-level while also

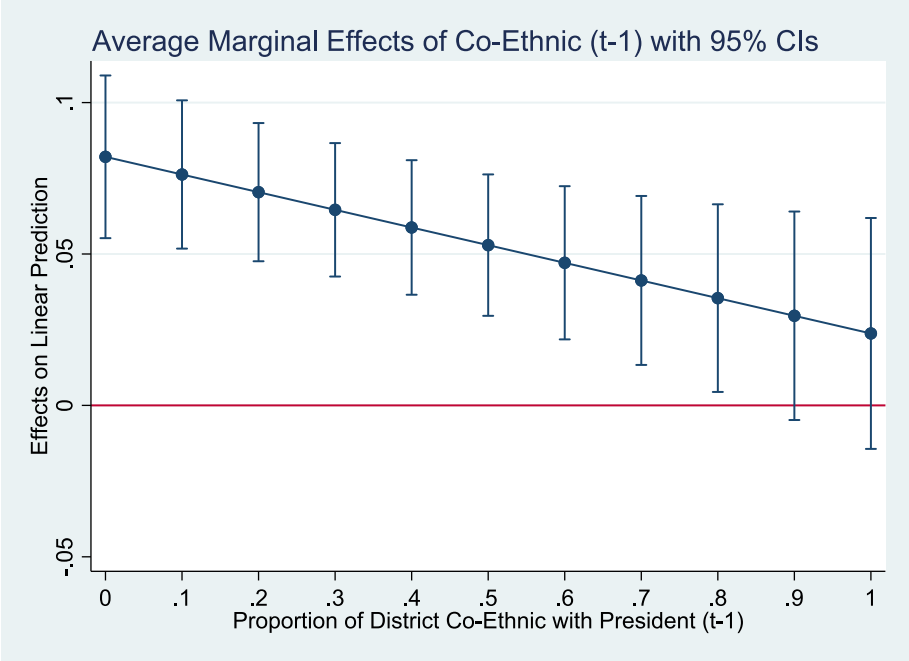

Fig. 13. Overall direction of the country.

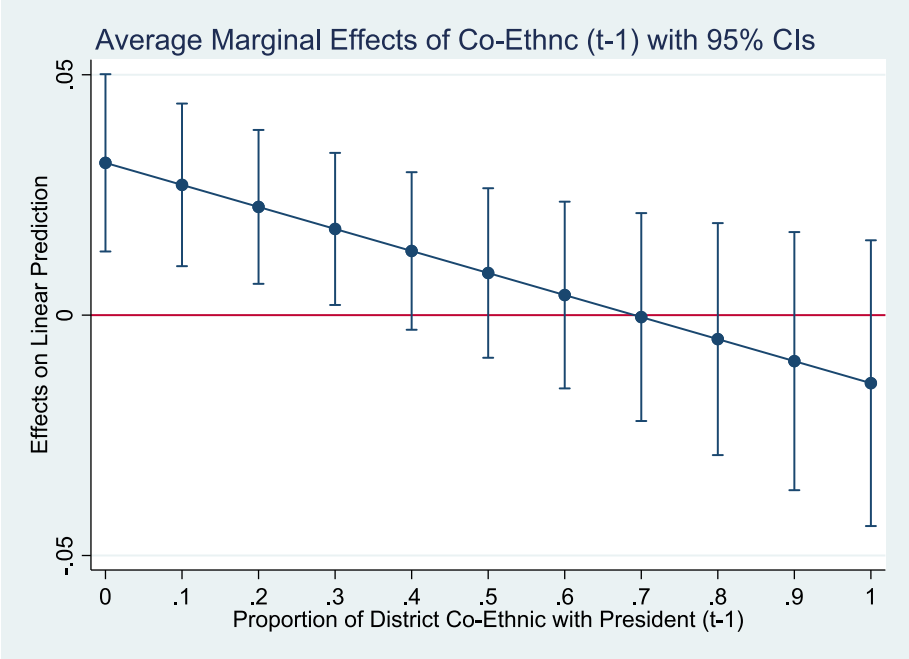

Fig. 14. Government services index.

examining multiple outcomes across multiple datasets, which makes it arguably the most comprehensive attempt to examine evidence for co-ethnic favouritism to date. Second, the fact that we find different results for subjective and objective outcomes suggests that scholarship like Ahlerup and Isaksson (2015) that focusses on subjective outcomes as measures of ethnic favouritism should be taken with a degree of scepticism. Third, our analysis is temporally different from much of the literature which uses historical data from the 1960s through the 2010s (Beiser-McGrath, Müller-Crepon, & Pengl, 2021; Franck & Rainer, 2012), inasmuch as our data only dates back to the late 1980s for the DHS and 2005 for the Afrobarometer. It is thus possible that ethnic favouritism was more prominent in the first decades after independence when African countries were led by a generation of post-colonial leaders who had benefitted from unequally distributed colonial investments in education (Maravall, Baten, & Fourie, 2023), and that subsequent attempts to alleviate these inequalities have also plausibly reduced levels of ethnic inequality in the provision of public and private goods. Indeed, it is notable that many of the more extreme and infamous acts of ethnic favouritism such as the relocation of the capital city towards the president's home region as happened in Côte d'Ivoire and Malawi took place under the leadership of the first generation of post-colonial leaders and not later. It is also noteworthy that recent decades have seen significant

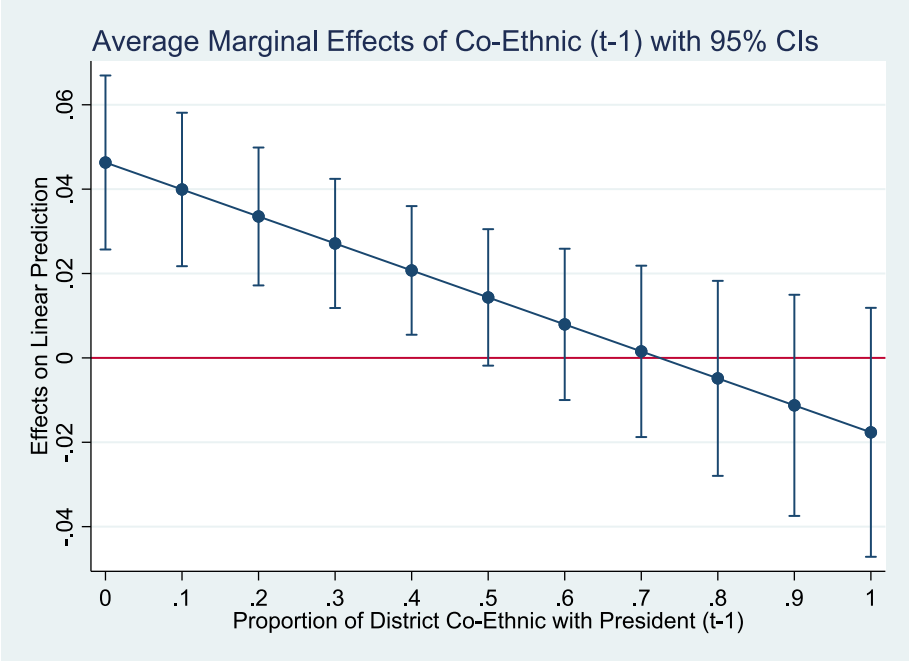

Fig. 15. Present living conditions.

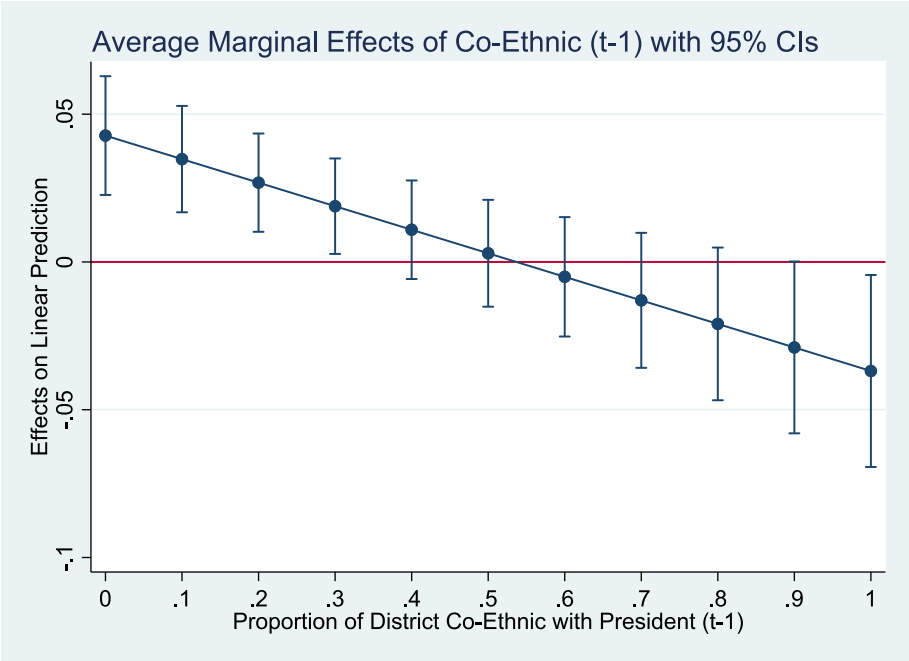

Fig. 16. Living conditions vs. others.

amounts of decentralization across Africa that has had the effect of removing at least some degree of presidential power over the preferential distribution of public and private goods.

As regards future research, we suggest scholars could focus on at least two extensions of our argument. First, the ethnic favouritism scholarship could take more interest in when, how and why certain citizens benefit from redistributive policies while others do not. We note that newer scholarship such as Beiser-McGrath, Müller-Crepon, and Pengl (2021) has focussed on where ethnic favouritism takes place, while other recent examinations of ethnic bias suggest that ethnic favouritism can be generated by government actors in the police and judiciary without a directive from the central government (Choi, Harris, & Shen-Bayh, 2022; Vanden Eynde, Kuhn, & Moradi, 2018). Similarly, Ejdemyr, Kramon and Robinson (2018) use very fine-grained data on ethnic segregation and borehole distribution in Malawi to show that ethnic segregation has an effect on ethnic favouritism. Future scholarship could thus focus more on geography, inequality, variation in access to ethnic favouritism within the President's ethnic group and the effect of different forms of ethnic favouritism upon each other.

Second, a lack of data has precluded us from examining public or private goods that have strong class-specific characteristics, inasmuch as questions in the Afrobarometer and DHS are focussed on access to

Table 4
President/Ruling Party Performance/Trust Measures .

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	Presidential Perform.	Trust in President	President is Corrupt	Trust in Ruling Party	Vote for President's Party
Co-Ethnic President	0.077***	0.071***	−0.035***	0.061***	0.092***
	(0.011)	(0.011)	(0.010)	(0.010)	(0.015)
Co-Ethnic District	0.159***	0.129***	−0.085***	0.100***	0.248***
	(0.029)	(0.028)	(0.022)	(0.026)	(0.046)
Co-Ethnic President *	−0.024	−0.017	0.001	−0.028	−0.094***
Co-Ethnic District	(0.020)	(0.021)	(0.019)	(0.021)	(0.029)
Country-Round FEs	yes	yes	yes	yes	yes
District FEs	yes	yes	yes	yes	yes
Ethnic Cluster FEs	yes	yes	yes	yes	yes
Countries	25	25	25	25	25
Country-Rounds	133	135	135	134	127
Districts	1419	1419	1419	1419	1409
Observations	188,535	194,136	170,129	186,505	126,972

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the country-district level are in parentheses. All specifications include individual controls for age and female and urban residence dummies. Observations are weighted equally by country-round.
Source: Afrobarometer

commonly-accessed goods. A greater focus on elite-specific goods such as government contracts, university scholarships and income tax could provide more information on how and where governments focus distributional efforts on the elite rather than the non-elite. Due to the fact that access to information about elite access to government is often deliberately difficult to obtain, future research may wish to employ last name-based analysis as a means of tracking elite co-ethnic access to government favours in situations where last names provide clear information about ethnic identity (cf. Kasara, 2013). While such research is inevitably arduous, it is nonetheless imperative for scholars to focus attention on co-ethnic elite-government connections as a way to understand the nature of ethnic favouritism in more detail.

Credit authorship contribution statement

Sanghamitra Bandyopadhyay: Writing – review & editing, Writing – original draft, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Elliott Green:** Writing – review & editing, Writing – original draft, Visualization, Validation, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

Table A1
Survey data by Country, Afrobarometer.

Country	Surveys	Name of Administrative Unit	Number of Units	Observations/Unit/Round
Benin	2005, 2008, 2011, 2014, 2016/2017, 2020	Commune	77	16
Botswana	2008, 2012, 2014, 2017, 2019, 2022	Sub-District	24	50
Burkina Faso	2008, 2012, 2015, 2017, 2019	Province	55	22
Cameroon	2013, 2015, 2018, 2021	Department	33	36
Côte d'Ivoire	2013, 2014, 2017, 2019, 2021	Region	33	36
Gabon	2015, 2017, 2020	Department	39	31
Ghana	2008, 2012, 2014, 2017, 2019	District	131	14
Guinea	2013, 2015, 2017, 2019	Prefecture	34	35
Kenya	2005, 2008, 2011, 2014, 2016, 2019, 2021	County**	46	42
Madagascar	2005, 2008, 2013, 2014/2015, 2018, 2022	Region**	22	57
Malawi	2005, 2008, 2012, 2014, 2016, 2019	District	27	62
Mali	2005, 2008, 2012, 2014, 2017, 2020	Cercle	50	24
Mozambique	2008, 2012, 2018, 2021	District	138	14
Namibia	2006, 2008, 2012, 2014, 2017, 2019	Constituency	102	12
Niger	2013, 2015, 2018, 2020	Department	36	33
Nigeria	2005, 2008, 2012, 2015, 2017, 2020, 2022	State*	37	60
Senegal	2005, 2008, 2013, 2014, 2017, 2020	Department	39	31
Sierra Leone	2012, 2015, 2018, 2020	District	14	85
South Africa	2006, 2008, 2011, 2015, 2018, 2021	District	52	44

(*continued on next page*)

Table A1 (*continued*)

Country	Surveys	Name of Administrative Unit	Number of Units	Observations/Unit/Round
Tanzania	2008, 2012, 2014, 2017, 2021	District	133	14
Togo	2012, 2014, 2017, 2020	Prefecture	37	32
Uganda	2005, 2008, 2012, 2017, 2019	District*	43	51
Zambia	2005, 2009, 2013, 2014, 2017, 2020	District	76	16
Zimbabwe	2009, 2012, 2014, 2017, 2021	District	60	26

Notes: * = First-level administrative unit. ** = overhaul of local government administration undertaken during period in question.

Table A2
Household survey data by country, DHS.

Country	Survey	Name of Administrative Unit	Number of Units	Observations/Unit/Round
Benin	1996, 2001, 2006, 2011/2012, 2017/18	Commune	76	156
Burkina Faso	1992/93, 1998/99, 2003, 2010, 2014	Province	45	173
Cameroon	1991, 2004, **2006**, 2011, 2018/19	Department	39	168
Central African Republic	**1994**, **2000**, **2006**, **2010**	Prefecture*	16	688
Côte d'Ivoire	1994, 1998, 2011/12	Region	33	176
Ethiopia	2000, 2005, 2011, 2016, 2019	Zone	76	180
Gabon	**2000/01**, 2012	Department	44	68
Gambia	**2000**, **2005**, 2013, 2019/20	District	39	145
Ghana	1993/94, 1998/99, 2003, 2008, 2014, 2019	District	137	60
Guinea	1999, 2005, 2012, 2018	Prefecture	34	191
Kenya	**1988/89**, **1993**, **1998**, 2003, 2008/09, 2014, 2015	County**	43	262
Malawi	**1992**, 2000, **2006**, 2010, 2015/16	District	28	723
Mali	1995/96, 2001, 2006, 2012/13, 2018	Cercle	49	216
Namibia	2000, 2006, 2013	Constituency	107	57
Niger	1992, 1998	Department	35	159
Nigeria	1990, 2003, 2008, 2013, 2018	State*	37	698
Senegal	1992/93, 1997, 2005, 2008/09, 2010/11, 2017	Department	45	150
Tanzania	1999, 2003, 2017	District	169	38
Togo	1988, 1998, 2013/14, 2017	Prefecture	21	347
Uganda	**1995**, 2000/01, 2009/10, 2011, 2016	District*	39	240
Zambia	2007, 2013/14, 2018/19	District	72	151
Zimbabwe	1999, 2005/06, 2010/11, 2015	District	59	147

Notes: Underlined data is taken from the UNICEF Multiple Indicator Cluster Survey (MICS). Data that is not geocoded is in bold. * = First-level administrative unit. ** = overhaul of local government administration undertaken during period in question.

Table A3
Descriptive statistics.

Statistic	Obs.	Mean	St. Dev.	Min	Max
Panel A: Afrobarometer Data					
Year of Survey	198,545	2013.8	4.844	2005	2022
Round	198,545	5.862	1.687	3	9
Individual co-ethnic Pres. (t-1)	198,545	0.203	0.402	0	1
District co-ethnic Pres. (t-1)	198,545	0.215	0.291	0	1
Infrastructure Index	198,538	0.482	0.29	0	1
Assets Index	198,289	0.53	0.325	0	1
Poverty Index	199,483	0.572	0.332	0	1
Full-Time Employment	198,088	0.305	0.46	0	1
Government Employee	103,740	0.066	0.249	0	1
Gov. Performance Index	197,212	0.435	0.293	0	1
Ethnic Group Treated Unfairly	187,596	0.413	0.493	0	1
Direction of Country	146,787	1.412	0.492	1	2
Government Services Index	148,010	0.534	0.396	0	1
Living Condition Dummy	197,827	0.508	0.5	0	1
Relative Liv. Condition Dummy	152,645	0.629	0.483	0	1
Panel B: DHS Data					
Year of Survey	946,438	2009.5	7.985	1988	2022
Round	946,438	5.475	1.655	1	8
Individual co-ethnic Pres. (t-1)	946,438	0.204	0.403	0	1
District co-ethnic Pres. (t-1)	946,438	0.199	0.276	0	0.995
Infrastructure Index	927,237	0.267	0.334	0	1
Asset Index	915,140	0.267	0.334	0	1
Wealth Index	891,726	0.511	0.359	0	1

Table A4
Regimes in the dataset.

Country	President	Tenure in office	Ethnicity	Afrobarometer	DHS
Benin	Nicephore Soglo	4/1991 – 4/1996	Fon		x
Benin	Mathieu Kérékou	4/1996 – 4/2006	Ditamari (Betamaribe)	x	x
Benin	Thomas Boni Yayi	4/2006 – 4/2016	Yoruba	x	x
Benin	Patrice Talon	4/2016 – present	Fon	x	x
Botswana	Festus Mogae	4/1998 – 4/2008	Tswana	x	
Botswana	Ian Khama	4/2008 – 4/2018	Tswana	x	
Botswana	Mokgweetsi Masisi	4/2018 – present	Tswana	x	
Burkina Faso	Blaise Compaoré	10/1987 – 10/2014	Mossi	x	x
Burkina Faso	Roch Marc Christian Kaboré	12/2015 – 1/2022	Mossi	x	
Cameroon	Paul Biya	11/1982 – present	Beti	x	x
Central African Republic	Ange-Félix Patassé	10/1993 – 3/2003	Sara-Kaba		x
Central African Republic	François Bozizé	3/2003 – 3/2013	Gbaya		x
Côte d'Ivoire	Félix Houphouët-Boigny	11/1960 – 12/1993	Baoulé		x
Côte d'Ivoire	Alassane Ouattara	12/2010 – present	Malinke	x	x
Ethiopia	Meles Zenawi	5/1991 – 8/2012	Tigrayan		x
Ethiopia	Hailemariam Desalegn	8/2012 – 4/018	Wolayta		x
Ethiopia	Abiy Ahmed	4/2018 – present	Oromo		x
Gabon	Omar Bongo	12/1967 – 6/2009	Bateke		x
Gabon	Ali Bongo Ondimba	10/2009 – present	Bateke	x	x
Gambia, The	Yahya Jammeh	7/1994 – 1/2017	Jola		x
Gambia, The	Adama Barrow	1/2017 – present	Fula		x
Ghana	Jerry Rawlings	12/1981 – 1/2001	Ewe		x
Ghana	John Kufuor	1/2001 – 1/2009	Akan	x	x
Ghana	John Atta Mills	1/2009 – 7/2012	Akan	x	x
Ghana	John Mahama	7/2012 – 1/2017	Gonja (Guan)	x	x
Ghana	Nana Akufo-Addo	1/2017 – present	Akan	x	x
Guinea	Lansana Conté	5/1984 – 12/2008	Soussou		x
Guinea	Alpha Condé	12/2010 – 9/2021	Malinke	x	x
Guinea-Bissau	João Bernardo Vieira	5/1984 – 5/1999	Papel		x
Guinea-Bissau	Henrique Rosa	9/2003 – 10/2005	Balanta		x
Kenya	Daniel arap Moi	8/1978 – 12/2002	Kalenjin		x
Kenya	Mwai Kibaki	12/2002 – 4/2013	Kikuyu	x	x
Kenya	Uhuru Kenyatta	4/2013 – 9/2022	Kikuyu	x	x
Madagascar	Marc Ravalomanana	6/2002 – 3/2009	Merina	x	
Madagascar	Andry Rajoelina	3/2009 – 1/2014	Merina	x	
Madagascar	Hery Rajaonarimampianina	1/2014 – 9/2018	Merina	x	
Madagascar	Andry Rajoelina	1/2019 – present	Merina	x	
Malawi	Hastings Banda	7/1966 – 5/1994	Chewa		x
Malawi	Bakili Muluzi	5/1994 – 5/2004	Yao	x	x
Malawi	Bingu wa Mutharika	5/2004 – 4/2012	Lomwe	x	x
Malawi	Joyce Banda	4/2012 – 5/2014	Yao	x	
Malawi	Peter Mutharika	5/2014 – 6/2020	Lomwe	x	x
Mali	Alpha Oumar Konaré	6/1992 – 6/2002	Bambara/Peul	x	x
Mali	Amadou Toumani Touré	6/2002 – 3/2012	Malinke/Peul	x	x
Mali	Ibrahim Boubacar Keïta	9/2013 – 8/2020	Bambara	x	x
Mozambique	Joaquim Chissano	11/1986 – 2/2005	Changana	x	
Mozambique	Armando Guebuza	2/2005 – 1/2015	Ronga/Makua	x	
Mozambique	Filipe Nyusi	1/2015 – present	Makonde	x	
Namibia	Sam Nujoma	3/1990 – 3/2005	Wambo	x	x
Namibia	Hifikepunye Pohamba	3/2005 – 3/2015	Wambo	x	x
Namibia	Hage Geingob	3/2015 – 2/2024	Damara	x	
Niger	Ali Saibou	11/1987 – 4/1993	Djerma		x
Niger	Ibrahim Baré Maïnassara	1/1996 – 4/1999	Hausa		x
Niger	Mahamadou Issoufou	4/2011 – 4/2021	Hausa	x	
Nigeria	Olusegun Obasanjo	5/1999 – 5/2007	Yoruba	x	x
Nigeria	Goodluck Jonathan	5/2010 – 5/2015	Ijaw	x	x
Nigeria	Muhammadu Buhari	5/2015 – 5/2023	Fulani	x	x
Senegal	Abdou Diouf	1/1981 – 4/2000	Serer		x
Senegal	Abdoulaye Wade	4/2000 – 4/2012	Wolof	x	x
Senegal	Macky Sall	4/2012 – present	Pulaar	x	x
Sierra Leone	Ernest Bai Koroma	9/2007 – 4/2018	Temne	x	
Sierra Leone	Julius Maada Bio	4/2018 – present	Sherbro	x	
South Africa	Thabo Mbeki	6/1999 – 9/2008	Xhosa	x	
South Africa	Jacob Zuma	5/2009 – 5/2018	Zulu	x	
South Africa	Cyril Ramaphosa	2/2018 – present	Venda	x	
Tanzania	Ali Hassan Mwinyi	11/1985 – 11/1995	Shirazi		x
Tanzania	Benjamin Mkapa	11/1995 – 12/2005	Makonde	x	x
Tanzania	John Magafuli	11/2015 – 3/2021	Sukuma	x	
Togo	Gnassingbé Eyadéma	4/1967 – 2/2005	Kabye		x
Togo	Faure Gnassingbé	5/2005 – present	Kabye	x	x
Uganda	Yoweri Museveni	1/1986 – present	Banyankole	x	x
Zambia	Levy Mwanawasa	1/2002 – 8/2008	Lenje/Tonga	x	x
Zambia	Michael Sata	9/2011 – 10/2014	Bemba	x	x
Zambia	Edgar Lungu	1/2015 – 8/2021	Bemba	x	x

(*continued on next page*)

Table A4 (*continued*)

Country	President	Tenure in office	Ethnicity	Afrobarometer	DHS
Zimbabwe	Robert Mugabe	12/1987 – 11/2017	Shona	x	x
Zimbabwe	Emmerson Mnangagwa	11/2017 – present	Shona	x	

Notes: Ethnic group names listed in parentheses are alternative names; those with a hash are Presidents with multiple ethnic heritages.

Table A5
Individual infrastructure variables, Afrobarometer data (Dependent Variable: Following are present in the enumeration area).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Paved Road	Electricity Grid	Piped Water System	Sewage System	Post Office	School	Police Station	Health Clinic
Co-Ethnic President (t-1)	0.035***	0.049***	0.023*	0.007	0.0005	−0.01	0.0007	0.006
	(0.015)	(0.011)	(0.013)	(0.010)	(0.010)	(0.010)	(0.013)	(0.016)
Co-Ethnic District (t-1)	−0.139***	0.042*	−0.02	0.01	−0.004	−0.032	−0.002	−0.049
	(0.046)	(0.025)	(0.027)	(0.030)	(0.029)	(0.023)	(0.034)	(0.036)
Co-Ethnic President (t-1) *	−0.062**	−0.128***	−0.046*	−0.037*	0.012	0.011	0.003	−0.017
Co-Ethnic District (t-1)	(0.030)	(0.023)	(0.025)	(0.022)	(0.025)	(0.020)	(0.030)	(0.032)
Districts	1304	1418	1418	1416	1418	1317	1417	1416
Observations	1,18,526	1,92,125	1,91,395	1,90,927	1,90,450	1,91,862	1,90,611	1,90,615

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. Results for paved roads are only available for rounds 3–6. Observations are weighted equally by country-round.

Table A6
Individual Asset Variables, Afrobarometer data (Dependent Variable: Respondent owns the following).

	(1)	(2)	(3)	(4)
	Radio	TV	Car/Motorcycle	Mobile Phone
Co-Ethnic President (t-1)	0.027***	0.063***	0.034***	0.023
	(0.008)	(0.009)	(0.008)	(0.011)
Co-Ethnic District (t-1)	−0.029**	0.029**	0.003	−0.013
	(0.013)	(0.016)	(0.014)	(0.020)
Co-Ethnic President (t-1) *	−0.053***	−0.134***	−0.087***	−0.028
Co-Ethnic District (t-1)	(0.017)	(0.017)	(0.016)	(0.020)
Districts	1419	1419	1419	1392
Observations	190,874	190,544	189,437	109,745

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. Results for mobile phone ownership are only available from round 6 onwards. Observations are weighted equally by country-round.

Table A7
Individual Poverty Variables, Afrobarometer data (Dependent Variable: Has gone without _ at least once in the past year).

	(1)	(2)	(3)	(4)
	Food	Medical Care	Clean Water	Cash Income
Co-Ethnic President (t-1)	−0.039***	−0.051***	−0.023**	−0.034***
	(0.011)	(0.011)	(0.011)	(0.007)
Co-Ethnic District (t-1)	−0.067***	−0.021	−0.03	−0.034***
	(0.016)	(0.016)	(0.018)	(0.012)
Co-Ethnic President (t-1) *	0.112***	0.101***	0.046**	0.081***
Co-Ethnic District (t-1)	(0.020)	(0.019)	(0.019)	(0.013)
Districts	1419	1419	1419	1419
Observations	192,127	191,689	192,126	191,779

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. Observations are weighted equally by country-round.

Table A8
Government Performance, Afrobarometer data (Dependent Variable: Government does a good job at handling the following public goods).

Dependent variable	Co-Ethnic President	Co-Ethnic District	Co-Ethnic President * Co-Ethnic District	Observations
Managing Economy	0.054***	0.128***	−0.048**	188,133
	(0.009)	(0.023)	(0.020)	
Creating Jobs	0.049***	0.113***	−0.064***	189,597
	(0.010)	(0.020)	(0.019)	
Keeping Prices Low	0.032***	0.089***	−0.022	190,741
	(0.009)	(0.020)	(0.018)	
Narrowing Income Gaps	0.044***	0.087***	−0.025	187,837
	(0.009)	(0.017)	(0.017)	
Improving Basic Health	0.026**	0.106***	−0.044**	191,796
	(0.012)	(0.021)	(0.022)	

(*continued on next page*)

Table A8 (*continued*)

Dependent variable	Co-Ethnic President	Co-Ethnic District	Co-Ethnic President * Co-Ethnic District	Observations
Providing Water/Sanitation	0.032**	0.120***	−0.050**	191,018
	(0.012)	(0.023)	(0.021)	
Ensuring Enough To Eat	0.041***	0.138***	−0.026	150,663
	(0.010)	(0.023)	(0.021)	
Improving Living Standards	0.060***	0.142***	−0.051**	174,832
	(0.010)	(0.021)	(0.022)	
Reducing Crime	0.010	0.108***	0.009	190,130
	(0.011)	(0.021)	(0.020)	
Providing Electricity	0.035***	0.153***	−0.068***	171,463
	(0.011)	(0.027)	(0.021)	
Providing Education	0.025*	0.113***	−0.025	191,333
	(0.010)	(0.021)	(0.020)	
Fighting Corruption	0.041***	0.135***	−0.014	183,126
	(0.011)	(0.024)	(0.020)	
Combatting HIV/AIDS	0.022	0.028	−0.0004	75,796
	(0.014)	(0.036)	(0.024)	
Maintaining Roads and Bridges	0.037**	0.123***	−0.075***	135,898
	(0.015)	(0.029)	(0.025)	
Resolving Violent Conflict	0.042**	0.111***	−0.047*	108,808
	(0.018)	(0.043)	(0.024)	

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. Results for Combatting HIV/AIDS are only available through round 5; results for Ensuring Enough to Eat are only available through round 7; results for Improving Living Standards, Providing Electricity and Maintaining Roads and Bridges are only available from round 4; results for Resolving Violent Conflict are only available from round 5. Observations are weighted equally by country-round.

Table A9

Government Services, Afrobarometer data (Dependent Variable: Easy to obtain following service from the government).

	(1)	(2)	(3)	(4)
	Household Services	Medical Treatment	Help from the Police	Identity Documents
Co-Ethnic President	0.019	0.030**	0.020	0.021
	(0.017)	(0.012)	(0.016)	(0.014)
Co-Ethnic District	0.129***	0.031	0.039	0.044*
	(0.032)	(0.020)	(0.028)	(0.026)
Co-Ethnic President *	−0.050	−0.041*	−0.056*	−0.004
Co-Ethnic District	(0.031)	(0.025)	(0.033)	(0.026)
Districts	1337	1412	1379	1404
Observations	58,378	123,398	64,957	94,794

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. All results are missing data from round 4; results for Household Services are only available through round 7. Observations are weighted equally by country-round.

Table A10

Individual Infrastructure Variables, DHS data (Dependent Variable: Following are present in the household).

	(1)	(2)	(3)
Dependent Variable	Piped Water	Electricity	Flush Toilet
Co-Ethnic President (t-1)	0.031***	0.037***	0.026***
	(0.009)	(0.008)	(0.007)
Co-Ethnic District (t-1)	0.043***	0.047***	−0.003
	(0.016)	(0.015)	(0.014)
Co-Ethnic President (t-1) *	−0.089***	−0.092***	−0.056***
Co-Ethnic District (t-1)	(0.018)	(0.016)	(0.015)
Districts	955	955	955
Observations	923,097	908,129	854,184

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. Observations are weighted equally by country-round.

Table A11

Household Asset Variables, DHS data (Dependent Variable: Following are present in the household).

	(1)	(2)	(3)	(4)	(5)	(6)
	Radio	TV	Fridge	Bicycle	Motorcycle	Car
Co-Ethnic President (t-1)	0.020***	0.047***	0.025***	−0.025***	0.025***	0.011***
	(0.006)	(0.008)	(0.007)	(0.007)	(0.006)	(0.004)
Co-Ethnic District (t-1)	0.050***	0.050***	0.045***	−0.037***	0.024**	0.007
	(0.013)	(0.013)	(0.010)	(0.012)	(0.010)	(0.006)
Co-Ethnic President (t-1) *	−0.049***	−0.114***	−0.092***	0.064***	−0.059***	−0.033***
Co-Ethnic District (t-1)	(0.014)	(0.016)	(0.014)	(0.014)	(0.014)	(0.009)

(*continued on next page*)

Table A11 (*continued*)

	(1)	(2)	(3)	(4)	(5)	(6)
	Radio	TV	Fridge	Bicycle	Motorcycle	Car
Districts	955	955	955	955	955	955
Observations	911,711	911,327	883,839	911,154	903,616	903,339

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. Observations are weighted equally by country-round.

Table A12
Ethno-Regional Favouritism in Contemporary Africa, Objective Outcomes, with different lags.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Data Source	Afrobarom.	Afrobarom.	Afrobarom.	Afrobarom.	Afrobarom.	DHS	DHS	DHS
Dependent Variable:	Infrastruct. Index	Assets Index	Poverty Index	Full-Time Employ.	Govern. Employ.	Infrastruct. Index	Assets Index	Wealth Index
Panel A: no lag								
Co-Ethnic	0.009	0.030***	−0.027***	0.025***	0.033***	0.035***	0.017***	0.027***
President	(0.007)	(0.006)	(0.007)	(0.009)	(0.008)	(0.005)	(0.004)	(0.006)
Co-Ethnic	−0.008	−0.005	−0.022*	0.000	0.049***	0.039***	0.021***	0.030***
District	(0.018)	(0.010)	(0.013)	(0.018)	(0.011)	(0.011)	(0.006)	(0.010)
Co-Ethnic Pres. *	−0.018	−0.071***	0.071***	−0.073***	−0.087***	−0.090***	−0.046***	−0.080***
Co-Ethnic District	(0.016)	(0.012)	(0.013)	(0.018)	(0.014)	(0.012)	(0.008)	(0.013)
Country-Round FEs	yes	yes	yes	yes	yes	yes	yes	yes
District FEs	yes	yes	yes	yes	yes	yes	yes	yes
Ethnic Cluster FEs	yes	yes	yes	yes	yes	yes	yes	yes
Countries	27	27	27	27	27	21	21	20
Country-Rounds	132	132	132	132	73	91	91	81
Districts	1362	1363	1363	1363	1324	955	955	933
Observations	182,602	182,406	182,530	182,148	98,253	939,524	927,440	905,616
Panel B: two-year lag								
Co-Ethnic	0.011	0.027***	−0.016**	0.032***	0.038***	0.034***	0.017***	0.025***
President (t-2)	(0.007)	(0.006)	(0.007)	(0.009)	(0.009)	(0.005)	(0.003)	(0.006)
Co-Ethnic	−0.022	0.015	−0.025**	0.039**	0.030**	0.026**	0.019***	0.030***
District (t-2)	(0.018)	(0.011)	(0.012)	(0.018)	(0.013)	(0.010)	(0.006)	(0.012)
Co-Ethnic Pres. (t-2) *	−0.019	−0.078***	0.056***	−0.084***	−0.095***	−0.076***	−0.048***	−0.071***
Co-Ethnic D. (t-2)	(0.016)	(0.012)	(0.014)	(0.018)	(0.014)	(0.011)	(0.008)	(0.013)
Country-Round FEs	yes	yes	yes	yes	yes	yes	yes	yes
District FEs	yes	yes	yes	yes	yes	yes	yes	yes
Ethnic Cluster FEs	yes	yes	yes	yes	yes	yes	yes	yes
Countries	27	27	27	27	27	21	21	20
Country-Rounds	132	132	132	132	73	91	91	81
Districts	1362	1363	1363	1363	1322	949	949	927
Observations	176,186	176,014	176,137	175,821	92,999	874,196	862,288	838,361

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the country-district level are in parentheses. All specifications include individual controls for age and urban residence while specifications 1–5 also contain a female dummy variable. Observations are weighted equally by country-round.

Table A13
Ethno-regional favouritism in contemporary Africa, objective outcomes: regional-level analysis.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Data Source	Afrobarometer	Afrobarometer	Afrobarometer	Afrobarometer	Afrobarometer	DHS	DHS	DHS
Dependent Variable:	Infrastruct. Index	Assets Index	Poverty Index	Full-Time Employ.	Govern. Employ.	Infrastruct. Index	Assets Index	Wealth Index
Co-Ethnic	0.007	0.041***	−0.041***	0.015	0.026***	0.041***	0.021***	0.031***
President (t-1)	(0.009)	(0.007)	(0.009)	(0.012)	(0.007)	(0.007)	(0.005)	(0.007)
Co-Ethnic	−0.024	−0.007	−0.047**	0.053*	0.015	0.032**	0.023***	0.031***
District (t-1)	(0.026)	(0.013)	(0.020)	(0.027)	(0.013)	(0.016)	(0.009)	(0.014)
Co-Ethnic Pres. (t-1)	−0.015	−0.098***	0.103***	−0.071***	−0.069***	−0.100***	−0.057***	−0.088***
* Co-Ethnic District (t-1)	(0.022)	(0.015)	(0.017)	(0.022)	(0.015)	(0.016)	(0.012)	(0.020)
Country-Round FEs	yes	yes	yes	yes	yes	yes	yes	yes
Region FEs	yes	yes	yes	yes	yes	yes	yes	yes
Ethnic Cluster FEs	yes	yes	yes	yes	yes	yes	yes	yes
Countries	27	27	27	27	27	21	21	20
Country-Rounds	140	139	139	138	73	90	90	83
Regions	295	295	295	295	287	196	196	190
Observations	196,562	196,335	195,328	194,993	100,382	961,533	947,377	923,613

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the country-district level are in parentheses. All specifications include individual controls for age and urban residence while specifications 1–5 also contain a female dummy variable. Observations are weighted equally by country-round.

Table A14
President/ruling party performance/trust measures: regional-level analysis.

	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	Presidential Perform.	Trust in President	President is Corrupt	Trust in Ruling Ruling Party	Vote for Pres.'s Party
Co-Ethnic President	0.078***	0.062***	−0.039***	0.058***	0.114***
	(0.017)	(0.016)	(0.011)	(0.014)	(0.021)
Co-Ethnic Region	0.156***	0.126***	−0.081***	0.089**	0.182**
	(0.045)	(0.044)	(0.036)	(0.040)	(0.076)
Co-Ethnic President *	0.005	0.023	−0.002	0.0008	−0.070
Co-Ethnic Region	(0.032)	(0.032)	(0.027)	(0.030)	(0.047)
Country-Round FEs	yes	yes	yes	yes	yes
Region FEs	yes	yes	yes	yes	yes
Ethnic Cluster FEs	yes	yes	yes	yes	yes
Countries	25	25	25	25	25
Country-Rounds	138	140	140	139	132
Regions	295	295	295	295	295
Observations	192,269	197,916	174,128	190,458	128,584

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the country-district level are in parentheses. All specifications include individual controls for age and female and urban residence dummies. Observations are weighted equally by country-round.
Source: Afrobarometer

Table A15
Performance/Trust Measures for Other State Institutions, Afrobarometer.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent Variable:	Trust in Police	Police is Corrupt	Trust in Courts	Courts are Corrupt	Local Gov. Performance	Trust in Local Performance	Local Gov. Is Corrupt
Co-Ethnic President	0.013	−0.002	0.014	−0.014	0.011	0.004	0.002
	(0.010)	(0.011)	(0.010)	(0.010)	(0.011)	(0.011)	(0.011)
Co-Ethnic District	−0.004	−0.014	0.019	0.010	0.002	−0.021	−0.026
	(0.016)	(0.017)	(0.018)	(0.018)	(0.019)	(0.019)	(0.017)
Co-Ethnic President	0.016	0.0007	0.018	0.025	0.008	0.035	0.009
* Co-Ethnic District	(0.018)	(0.019)	(0.019)	(0.020)	(0.020)	(0.019)	(0.018)
Districts	1363	1363	1363	1363	1348	1363	1363
Observations	173,151	164,284	168,963	156,973	156,640	165,890	155,211

Notes: OLS regressions; * $p \leq 0.10$, ** $p \leq 0.05$; *** $p \leq 0.01$; robust standard errors clustered at the district level are in parentheses. All specifications include the same controls as in Table 1. Observations are weighted equally by country-round.

Data availability

Data will be made available on request.

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