

Ethnic Favoritism: Micro Evidence from Guinea

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Abstract

Is the ethnic group in power really better off than others? This paper exploits random change in the ethnicity of the president of Guinea in 1984 to identify the effect of having a co-ethnic in power on welfare, measured by infant mortality. Mother fixed effects estimation results show that babies born to mothers living in districts where the new president's ethnic group predominates are no less likely to die within the first year of life than in other districts after 1984, suggesting that the new president does not seem to favor districts where his ethnic group mostly inhabits. Mothers of the new president's ethnicity do not see their babies less likely to die than those of other ethnicity in the same district after 1984, either, implying that the new president does not appear to favor members of his own ethnic group against other ethnic groups in the same area. Although these results are not entirely conclusive due to data limitations, this paper demonstrates an empirical methodology to identify ethnic favoritism by the government and casts some doubt on conventional wisdom that policy-makers favor their own ethnic group. JEL codes: O55, P16, Z13.

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1 Introduction

Ethnic diversity is empirically associated with low economic growth (Easterly and Levine 1997; Alesina et al. 2003), poor quality of government (La Porta et al. 1999), and civil wars (Montalvo and Reynal-Querol 2005).¹ Investigations on the mechanism of this association have so far concerned collective action problems exacerbated by ethnic diversity (e.g. Miguel and Gugerty 2005). Another possible mechanism largely ignored in the economics literature is ethnic favoritism by the government. A conventional wisdom has it that policy-makers favor their own ethnic groups in the allocation of public funds. As a result, citizens support politicians from their own ethnic group even if these politicians may be less honest or less able than those from other ethnic groups (Banerjee and Pande 2007). As which ethnic group is in power is salient, citizens even resort to violence to have their co-ethnics in power.² However, there is a lack of systematic evidence that ethnic groups in power are really better off. This paper aims to test this conventional wisdom on ethnic favoritism in a systematic and convincing way, in order to provide the basis for any discussions on ethnic conflicts due to government patronage.

Evidence on ethnic favoritism by the government in the literature is largely anecdotal.³ When statistics is provided, it is often the government expenditure by ethno-region (e.g. Barkan and Chege 1989). Given that government expenditures often do not reach the end-users of public goods in poor countries (Reinikka and Svensson 2004), it is not clear whether ethnic groups in power really benefit from more budget allocations to their regions. This paper looks at infant mortality as a measure of welfare each ethnic group actually enjoys.

Comparing each ethnic group's welfare cross-sectionally does not allow us to disentangle the effect of government favoritism from heterogeneity in unobservable characteristics across ethnic groups. To empirically show whether it matters which ethnic group is in power, we need to exploit change in the ethnicity of political leadership and compare changes in welfare before and after across ethnic groups. However, change in the ethnicity of leadership may be endogenous to change in each ethnic group's welfare. It could be the case that ethnicity in power changes because a certain group accumu-

¹See Alesina and LaFerrara (2005) for a survey.

²Tishken (1994), in his review of a book on ethnic conflict, lists ethnic favoritism in state resource allocations as one reason for why many conflicts take on an ethnic dimension.

³Bates (1983) cites several examples from Africa.

lates economic power which allows it to seize political power as well. Then we would wrongly attribute improvements in welfare for the ethnic group gaining power to the effect of having a co-ethnic in power. Alternatively, ethnicity in power may change because an ethnic group discriminated by the government seizes power out of grievance. As a result, the ethnic group newly in power becomes better off after the leadership change though this change in welfare has nothing to do with ethnic favoritism per se.

In order to ensure the exogeneity of ethnicity in power, we need to look at a case where ethnicity in power is determined independently of relative welfare changes across ethnic groups. For this purpose, this paper focuses on Guinea, a country in West Africa with high ethnic diversity. The president ruling this country since independence in 1957 unexpectedly died in office in 1984. Only eight days later, a group of military officers who were excluded from political power until then seized power with the officer most senior in rank becoming a new president. He is from a different ethnic group than his predecessor's. As discussed in detail in section 3.3 below, the ethnicity of a new president after the sudden death of the predecessor was unlikely to be determined by relative change in welfare across ethnic groups. Therefore, changes in welfare, measured by infant mortality, after the leadership change for the new president's ethnic group relative to other groups give an unbiased estimate of the effect of having a co-ethnic in power.

I estimate the effect of having a co-ethnic as president at two levels of disaggregation. First, I investigate whether Guineans in districts with the new president's ethnic group accounting for more than half the population improve their welfare after the leadership change. Second, I examine whether the new president's ethnic group benefits more from the leadership change than other ethnic groups within the same district. These two levels of analysis shed light on why ethnicity matters in politics. If ethnicity matters only due to its correlation with local administrative districts, ethnic favoritism brings about a difference in welfare at the district level, but not within districts. If ethnicity matters as an excluding device, then a difference in welfare within districts should be affected by leadership change.

Empirical results obtained in this paper do not provide the support for ethnic favoritism taking place in Guinea. Districts where the new president's ethnic group dominates do not see a larger drop in infant mortality than other districts after the leadership change. Mothers from the new president's ethnic group do not see their babies less likely to die compared to other ethnic groups in the same district after having their co-ethnic in power, either. Due

to several data limitations, these empirical results cannot entirely exclude alternative interpretations. However, they do suggest that individual welfare does not hugely depend on which ethnic group is in power, at least in the context of child survival in Guinea.

The only systematic evidence on ethnic favoritism in the literature that I am aware of is Kasara (2007), who shows that African leaders tax their co-ethnics *more* heavily than other ethnic groups, by exploiting variation within each subnational ethno-region across 30 African countries.⁴ Although her study has more external validity than this paper in terms of countries covered in the study, the endogeneity of changes in the ethnicity of leaders is not explicitly dealt with. In addition, unlike this paper, she does not directly look at welfare as an outcome or investigate the possibility of ethnic favoritism within region by using individual-level data.

The paper is organized as follows. The next section discusses theoretical links between ethnic favoritism by the government and child survival. Section 3 describes background and data on Guinea. Sections 4 and 5 show empirical results on ethnic favoritism at the district level and within districts, respectively, followed by the concluding section.

2 Theoretical Links from Ethnic Favoritism to Child Survival

This section discusses two theoretical possibilities that ethnic favoritism affects infant mortality differentially across ethnic groups. The first one concerns favoritism at the regional level while the second implies favoritism at the individual level.

Bates (1983), a seminal paper on ethnic politics, argues that ethnicity matters in the context of modernization due to the combination of two factors: first, members of an ethnic group tend to cluster in space; second, the provision of local public goods such as roads, schools, and clinics has a spatial aspect. As a result, each ethnic group has the homogeneous preference among its members over the location of local public goods provided by the government. The policy-maker then allocates local public goods to

⁴More precisely, she controls for country-crop fixed effects. As “both crop production and ethnic groups are geographically concentrated” (Kasara 2007, p. 160) in Africa, country-crop combinations correspond to ethnic groups in each country.

his own region where his co-ethnics mainly inhabit for several reasons which I will discuss below. Although this mechanism is not ethnic favoritism in a strict sense, we would observe the correlation between the policy-maker's ethnicity and the ethnic group that is better off than others. In the context of child survival, local public goods that matter would be the construction of health clinics and the provision of health professionals. Then pregnant women can receive medical check-ups and child delivery assistance, which helps the survival of babies within the first month of life. After child birth, their babies can get immunized against infectious diseases such as measles and receive treatments when they get infected by diarrhea, malaria, pneumonia, and other fatal diseases for children. The provision of roads would also help babies survive to the extent that this reduces the cost of taking babies to a clinic for their family or of providing outreach activities in remote areas for health professionals.

The second theoretical possibility on the link between ethnic favoritism and child survival is the argument proposed by Fearon (1999) and formalized by Caselli and Coleman (2006).⁵ It argues that ethnicity functions as an excluding device in the allocation of public funds. By restricting access to public funds by ethnicity which people cannot easily change, those in power can avoid the dilution of each one's share of the spoils such as tax revenues from natural resource exports. If the policy maker chooses his own ethnic group as the one benefiting from the spoils for reasons discussed below, the ethnic group in power should be treated better than other groups even within the same geographical area. In relation to child survival, the "spoil" would be government jobs. The employment in the public sector provides parents with income to feed their babies and to pay for their medical treatments. As a result, the policy-maker's ethnic group would have a lower infant mortality rate than other groups.

Why would the policy-maker favor his own region or his own ethnic group? One reason would be that the policy-maker shares the same preference as those in his own region or as those in the same ethnic group. If the policy-maker is motivated by rent accruing to political office holders, then he favors his own ethnic group as long as only this group can kick him out of office (Padro i Miquel 2006).

If the policy-maker is an office-seeker, the literature on redistributive politics also provides at least two reasons for why he targets public spending

⁵Bates (1983, p. 158) also mentions this mechanism briefly.

to his region or his group. Cox and McCubbins (1986) provide the first reason: if politicians are risk-averse, then they redistribute to their core supporters because they know through more frequent interactions with the core supporters that they will be rewarded from such redistribution in the form of political support. In the context of ethnic politics, people in power are likely to know the preference of their own ethnic group more because, for example, they communicate more easily based on the common language. As long as politicians in power are risk-averse, they target redistribution to their own ethnic group. Lindbeck and Weibull (1987, section 6.2) and Case (2001) offer the second argument: even if politicians are risk-neutral, they target core supporters if their aim is to maximize the chance of winning a majority, rather than the number of votes obtained, and if the incumbent is slightly more popular than challengers. This is because, if the incumbent is slightly more popular than challengers, core supporters become the pivotal voters whose support decides which party to win. This logic suggests that the ethnic group in power will favor its own members only when its share in the population slightly outweighs that of the rival ethnic group. However, in the context of non-democratic politics—which is relevant for Guinea until the early 1990s—it is not clear why the government needs to obtain the support from a majority in the population.

In the empirical analysis that follows, I test the two hypotheses on why ethnicity matters. If the first hypothesis—ethnicity matters because of its correlation with space—is true, then we should see districts where the president’s ethnic group inhabits benefit more than the other districts. If the second hypothesis—ethnicity matters as an excluding device—is true, then we should see the president’s ethnic group benefits more than the other groups within the same district.

3 Background and Data on Guinea

The identification strategy in this paper relies on the exogeneity of the ethnicity of a new Guinean president after the sudden death of the predecessor in 1984 to changes in the welfare of each ethnic group in Guinea. To discuss the plausibility of this identifying assumption, I first describe ethnic groups and political history of Guinea as a background. After discussing the identification strategy, I then explain how the two theoretical possibilities on ethnic favoritism mentioned in the previous section map into the Guinean context

to motivate empirical specifications. Finally, I describe the data used in the analysis.

3.1 Ethnic Groups

Guinea is a country in West Africa. Its GDP per capita in purchasing power parity terms is close to the average of 48 sub-Saharan African countries in 2000 though economic growth between 1960 and 2000 is among the worst in the region.⁶ Infant mortality per 1,000 live births has always been above the African average.⁷ Ethnic diversity is also higher than the African average.⁸ These statistics suggest that what we see in Guinea is likely to represent the basket case even by African standards.⁹

Guinea has six major ethnic groups: Sousou, Peulh, Malinke, Kissi, Toma, and Guerze with the last three groups often grouped together as “Foresters”.¹⁰ Members of each group speak different languages though the Sousou, Malinke, Toma, and Guerze languages are more similar to each other (belonging to the Mande language group) than to the rest. Although French is the official language of Guinea, it is mostly spoken by educated Guineans.¹¹

⁶Guinea’s real GDP per capita is 2,546 US dollars in purchasing power parity terms in 2000 while the African average is 2,633 dollars. The Guinean economic growth rate between 1960 and 2000 is -0.47 percent, which is the fourth lowest among 33 African countries with data available. All the figures are based on Penn World Table 6.2.

⁷Infant mortality per 1,000 live births for Guinea and for the African average is 215 versus 160 in 1960, 162 versus 105 in 1985, and 112 versus 95 in 2000 (World Development Indicators, September 2006).

⁸The ethnic fractionalization index (Alesina et al. 2003) is 0.74 for Guinea and 0.66 on average for 47 sub-Saharan African countries. Guinea’s ethnic polarization index (Montalvo and Reynal-Querol 2005) is the highest in sub-Saharan Africa (0.84).

⁹Indeed, the 2007 Failed State Index, compiled by the Fund for Peace and *Foreign Policy* magazine, ranks Guinea as the 9th most fragile state in the world (see “The Failed State Index 2007,” *Foreign Policy*, July/August 2007, pp. 54-63).

¹⁰There are various spellings for the names of ethnic groups in Guinea (Susu or Sosso for Sousou; Fulbe, Fula, Fulani, or Peul for Peulh; Maninka, Mandinka, or Manding for Malinke; Loma for Toma; Kpelle for Guerze). I follow the spelling in the codebook of the Demographic and Health Survey conducted in Guinea in 1999 (the dataset used in this paper). According to O’Toole and Baker (2005, p. 163), the ethnic composition estimated in 2000 was 40 percent Peulh, 30 percent Malinke, 20 percent Sousou, and 10 percent other groups.

¹¹According to O’Toole and Baker (2005, p. 93), about 20 percent of the Guinean population understand French.

One can identify each other's ethnicity from their surname to some extent.¹²

Sousou, Peulh, Malinke, and "Foresters" each predominate in one of the four topographical regions: Lower Guinea (or Guinee Maritime), Middle Guinea (or Futa Jalon), Upper Guinea (or Haute Guinee), and Forest Guinea (or Guinee Forestiere), respectively. Each region has a slightly different climate pattern and thus people cultivate different crops. Nutritional status of children may thus differ across regions simply due to natural factors. On the other hand, disease environments are generally similar across regions. For example, malaria is endemic in all the regions.

3.2 Political History

Guinea became independent from France in 1957 after Guineans voted for independence in a referendum.¹³ The first president, Ahmed Sekou Toure, was a Malinke. He established one-party rule immediately after independence, winning uncontested presidential elections in 1961, 1968, 1974, and 1982 (Brune 1999). Despite a series of coup attempts during his rule, he survived all of them and died in office unexpectedly on March 26, 1984, at the age of 62.

Opinions are divided on the extent to which Sekou Toure was successful in integrating ethnic groups in Guinea. Adamolekun (1976) and Riviere (1977) both praise him for successful nation-building while in later years of his rule Malinke people were overrepresented among the top political leaders (Everett 1985, p. 23).¹⁴ Gardinier (1988) points out that it is not clear how Toure managed to integrate Guineans while "primary and secondary school classes were taught only in local dialects" (Everett 1985, p. 23).¹⁵

¹²Guineans with family names such as Bah, Balde, Barry, Diallo, Sow, Tall, and Thiam are generally Peulh while family names Camara, Conde, Diawara, Fofana, Kante, Kourouma, Kouyate, Soumaoro, and Traore indicate the Malinke people (O'Toole and Baker 2005, pp. 96 and 139).

¹³In this referendum, Peulh people are said to have voted against independence, and because of this they suffered some discrimination after independence (see, for example, "Guinea: Breaking the Circle," *Africa Confidential*, September 24, 1976, p. 4). However, Brune (1999, p. 454) shows that the only 4.8 percent of the votes cast were against independence while Peulh people were accounted for about 30 percent of the population in 1955 (Riviere 1977, p. 31).

¹⁴According to Yansane (1990, footnote 48), however, "Toure certainly did not favor any ethnic group except for his family." As his family members are, by definition, all Malinke, this "family" favoritism may have been seen as ethnic favoritism.

¹⁵This language policy certainly contributed to a low proportion of Guineans who un-

Upon Sekou Toure's sudden death, Lansana Beavogui, a Toma who had been prime minister under Toure's rule since 1972, became interim president. Only about a week later (April 3), however, a group of military officers led by Colonels Lansana Conte and Diara Traore seized power, abolishing the one party rule. Conte, a Sousou, became president while Traore, a Malinke, became prime minister. The two military leaders, then, engaged in power struggle. Conte demoted Traore to minister of education in December of 1984. Then Traore attempted a coup in July of the following year, ending up being arrested and executed.

In 1990, a new constitution was adopted in a referendum, paving the way for multiparty democracy. In 1993, the first multiparty presidential election since independence was held in which Lansana Conte won with 52 percent of valid votes (Brune 1999, p. 457). Conte was re-elected in 1998 and 2003, and as of July of 2007, he is still in power.

In short, there have been only two presidents in Guinea since independence, and the president's ethnicity changed from Malinke to Sousou in 1984.

3.3 Exogenous Change in President's Ethnicity?

I exploit the change in the ethnicity of the president of Guinea in 1984 to estimate the effect of having a co-ethnic as president on individual welfare measured by infant mortality. An obvious issue on this identification strategy is whether the seizure of power by Conte, a Sousou military officer, is exogenous to changes in determinants of the welfare of Sousou people, or Guineans in Sousou-dominated districts, over time.

The welfare of Sousou people is unlikely to be correlated with the fact that Conte seized power and stayed in office for four reasons. First, Conte had not been politically powerful before the coup. Momoh (1984, p. 756) describes him as belonging to "the less privileged sector of Guinean armed forces". As a result, it is unlikely that he accumulated economic and political power of Sousou people by using his position in the government and that this allowed him to seize power.

Second, the military coup does not seem to have been ethnically motivated, suggesting that Sousou's economic power was unlikely to be crucial for Conte to seize power. Several non-Sousou military officers participated in the military coup. As mentioned above, Conte's partner in leading the coup,

derstand the French language today.

Diara Traore, is a Malinke.¹⁶ Among the other 16 original members of the military junta (Comite Militaire de Redressment National), one major, two captains, and one lieutenant are Peulh, and four majors are Malinke, judging from their surnames.¹⁷ Another member of the military junta, Captain Jean Traore, is from Forest Guinea, where ‘Foresters’ (Kissi, Toma, Guerze) reside, and he is thought to be one of the closest to Conte.¹⁸ On the other hand, the only Sousou politician among top political leaders under Toure’s rule, N’Famara Keita (see Adamolekun 1976, pp. 173-4), was arrested after the coup and died in prison a year after.¹⁹

Third, the leadership struggle between Conte and Traore does not appear to have been a clash between Sousou and Malinke ethnic groups, suggesting that Sousou’s economic power was unlikely to be decisive for Conte to stay in power. Ousmane Sow, whose surname indicates that he is a Peulh (O’Toole and Baker 2005, p. 96), led a battalion to first counter-attack Diara Traore’s soldiers during the 1985 coup attempt. In addition, not all Malinke officers supported Traore.²⁰

Finally, Conte became president because he was the most senior in rank among the coup plotters (Hodonou 2004), and the reason for his senior position does not appear to have been his ethnic background but his military talent. He was a sergeant at the time of independence. In 1970, when Portugal invaded Conakry, the capital city, to attack the headquarters of the independence movement for Guinea-Bissau and Cape Verde (which were Portuguese colonies at that time), Conte was in charge of the defense of Conakry and successful to repel the Portuguese invasion. Afterwards, he was named captain for the exceptional service to his country.²¹ Conte may have been able to lead the military junta because of this military background.

I cannot entirely exclude the possibility that Conte seized power because the Sousou-dominated region was becoming relatively better-off than others, however. Lower Guinea, where the Sousou predominates and his home

¹⁶According to Kaba (1985, p. 178), Traore was the “main force” behind the coup.

¹⁷See Momoh (1984) for the list of members of the military junta. I rely on O’Toole and Baker (2005, pp. 96, 117, and 139) for which surname is typical for which ethnic group.

¹⁸*Africa Contemporary Record*, 1984-1985, p. B470; O’Toole and Baker (2005), p. 203.

¹⁹See *Keesing’s Record of World Events*, p. 33710 (July 1985) and O’Toole and Baker (2005, p. 124).

²⁰See “Guinea: Diarra Traore’s Attempted Comeback,” *West Africa*, 15 July 1985, pp. 1412-3. This interpretation of Traore’s coup attempt, however, is debatable, especially because there were riots and looting against Malinke people in Conakry at the same time.

²¹See O’Toole and Baker (2005, pp. 55 and 164-5).

village is located, has major bauxite mines in operation during the 1970s and the 1980s (see Campbell 1991, pp. 34-39). Given that Guinea possesses about one-third of the world's highest-grade bauxite deposits and has been the world's leading exporter, bauxite mining could have been a huge source of economic power though it is not clear to what extent local people benefited from bauxite mines as local processing of bauxite was limited (Campbell 1991). In addition, Conte was a commander of the Boke military region in Lower Guinea (Hodonou 2004), where there was one bauxite mine in operation since 1973. He might have accumulated personal wealth from bauxite export, which could have allowed him to buy support for his presidency. In fact, the military's support for Conte, which is likely to be crucial for political survival in non-democratic politics, appears to have been based on the improvements in living conditions among officers and soldiers in the army.²² This might not have been possible if Conte's regional base was a poor area. To partly deal with this concern, I will control for district-specific linear trends in infant mortality in the following empirical analysis.

3.4 Potential Means of Favoritism

Section 2 above considers two theoretical possibilities that ethnic favoritism affects the survival of babies. How do these considerations map into the context of Guinea after 1984?

First, Lansana Conte may have selectively revamped the health system by targeting districts where his own ethnic group mostly inhabits. By the end of Sekou Toure's rule, health systems in Guinea collapsed severely (Kaba 1977, p. 40; Knippenberg et al. 1997, pp. S30-S31). Lansana Conte initiated the revitalization of health systems in 1986 by formulating a new health policy (World Bank 2005, p. 1) and by developing primary health care centers throughout the country with an emphasis on child and maternal care (Glik et al. 1989, p. 423). Primary health care in Guinea is organized at each prefecture and each Conakry commune (which is called a district in this paper).²³ Therefore, the central government could deliberately allocate public

²²According to Momoh (1984, p. 757), under Sekou Toure's rule, "[w]ages for the armed forces had been poor while housing was short and mostly in deplorable conditions." On the other hand, Conte ensured that the army would be shielded from the public sector payroll cut under the structural adjustment (*Africa Contemporary Record*, 1984-85, p. B473).

²³See Millimouno et al. (2006, p. 17).

funds and human resources for health care at the level of districts. However, under this mechanism, everyone including non-Sousou people would benefit within the targeted district as it is unlikely that each hospital and health center could provide health care only for Sousou people and deny access from non-Sousou people.

The other potential mechanism for ethnic favoritism in Guinea after 1984 is the selective dismissal of civil servants. Under Sekou Toure’s rule, Guineans were impoverished while the bureaucracy was hugely bloated. The number of public sector employees in November 1985 was 140,000, above 2 percent of the entire population.²⁴ Civil servants engaged in ‘moonlighting’ by selling goods from state warehouses to the black market (Graybeal and Picard 1991, p. 288). By the time Sekou Toure died, Guinean national debt was accumulated to the level of 62 percent of its GNP (*Ibid.*, p. 282). Lansana Conte needed to accept IMF conditionalities, including the streamlining of the public sector, to obtain loans. It could be conceivable that Conte may have chosen who to be fired based on ethnicity. To the extent that Sousou civil servants have an informal risk-sharing network with their co-ethnics, then we would see the survival of babies more likely for Sousou than for the other ethnic groups within the same geographical area, because only Sousou people can afford sufficient nutritional intakes and access to health care.

3.5 Data

The data source used in this paper is the Demographic and Health Survey (DHS) conducted in Guinea during May and June of 1999. In the survey, a nationally representative sample of women aged 15 to 49 (6,753 in total) are interviewed on, among others, their ethnicity and their children’s birth date and, if applicable, age at death in months. From these interview results, I construct a panel dataset of mothers with the time dimension being the birth year of their children. From this sample, I drop babies born within 12 months before the survey, because these babies may die before their first birthday, causing measurement error. The resulting sample contains 21,739 babies born to 5,183 women. The earliest year of birth in the sample is 1961.

Although the surveyed mothers are nationally representative, babies in the constructed panel data are not, because babies born to women who are

²⁴See Graybeal and Picard (1991, p. 287). As a benchmark, consider the number of civil servants in Cote d’Ivoire, a neighboring country of Guinea whose population is nearly twice as large. It was 80,000 at that time (*Africa Contemporary Record*, 1983-84, p. B446).

over 49 years old or dead at the survey date are missing from the sample. If the survival of these missing babies is systematically different from those in the sample, then my estimation results would be biased. I will come back to this issue below.

From information on the age at death, I create a dummy variable for infant death (death within the first year of life) as the dependent variable in the following analysis. For exogenous controls, I also create dummy variables for baby girls and babies born in multiple birth (twins, triplets, and quadruplets) because baby girls are known to be less likely to die for biological reasons and babies born in multiple birth are more likely to die. These variables are included as regressors to increase the precision of coefficient estimates.

To identify Sousou-dominated districts, I obtain the share of Sousou people in the population by district in the following way. I calculate the sample share of Sousou women among all women aged between 15 and 49 in each district in 1999, by using the sample of all surveyed women, including those who do not give any birth in the past. Table 1 shows the share of Sousou women in each district obtained this way. If the share exceeds 50 percent, I treat such districts as Sousou-dominated. Prefectures in Lower Guinea except for Boke and Telimele, and two out of five communes in Conakry turn out to be Sousou-dominated.

These obtained sample shares of Sousou women may differ from the actual shares of Sousou people relevant to ethnic favoritism because the share of Sousou men is not taken into account and because the ethnic group distribution in each district may be different between in the late 1980s and in 1999. In addition, the surveyed women may not be representative for each district because sampling is stratified not by district but by five regions (Lower Guinea, Middle Guinea, Upper Guinea, Forest Guinea, and Conakry). Due to the data limitation, however, this is the only way of obtaining ethnicity shares in each district. As I only exploit whether Sousou people's share is over 50 percent of the population, this procedure is unlikely to yield a substantial misclassification of Sousou-majority districts.

The survey results provide where interviewed mothers live at the survey time. However, there is no information on whether and when these mothers migrated to the surveyed place. As a result, I inevitably misallocate some babies to the places where they were not actually born. This could bias the estimation of the impact of leadership change because after Lansana Conte seized power, some of more than one million Guineans (which is up to 20 percent of the population) who had fled the country due to the repressive

nature of Sekou Toure’s rule returned to Guinea, though the number of such returnees is not very large (O’Toole and Baker 2005, p. 171). This issue will be discussed below where appropriate.

3.6 Summary Statistics

Table 2 shows the average infant mortality rates by period and subsample. Overall, 12.3 percent of live births lead to death within the first year of life in Guinea, and the rate has been on the decline from 15.4 percent until 1984 to 11.1 percent since 1985. Districts where the majority of women are Sousou have a lower infant mortality rate on average than the other districts (10.8 versus 12.7 percent). The decline in infant mortality is quicker in Sousou majority districts (5.5 versus 4.1 percentage points), suggesting the possibility that the government treats these districts better after 1984. Babies born to Sousou mothers are less likely to die within the first year of life than those born to women of the other ethnic groups (10.2 versus 12.9 percent). However, the fall of infant mortality is quicker for non-Sousou babies than for Sousou babies (4.5 versus 3.6 percentage points). Of course, these raw statistics may reflect change in the composition of mothers over time which has nothing to do with the change in the ethnicity of the president. The following sections deal with this issue.

4 Favoritism at the District Level?

First, we look at whether Lansana Conte favors districts where his ethnic group, Sousou, accounts for the majority of the population. The following equation is estimated:

$$y_{imct} = \alpha_m + \beta_t + \gamma D_c * 1(t > 1984) + \delta D_c * 1(t > 1993) + \mathbf{X}_{imct} \boldsymbol{\theta} + \varepsilon_{imct}. \quad (1)$$

The dependent variable, y_{imct} , is a dummy indicating whether baby i born to mother m in district c in year t dies within the first year of life.²⁵ α_m and β_t are a mother fixed effect and a birth-year fixed effect, respectively. D_c is a dummy equal to 1 if Sousou accounts for the majority of the population

²⁵Throughout the empirical analysis in this paper, babies born before 1970 are treated as born in the same year. There are only 361 such babies (1.7 percent of the sample), and estimating year fixed effects for each single year in the 1960s is computationally demanding and may yield inaccurate estimates of year fixed effects.

in district c , and $1(\bullet)$ is an indicator function which is 1 if the argument in parentheses is true and 0 otherwise. A vector of exogenous controls, \mathbf{X}_{imct} , includes dummies for whether baby i is a girl and for whether baby i is born in multiple birth.

Coefficient γ measures changes in infant mortality for babies of a mother in Sousou-majority districts, relative to babies for a mother in the other districts, after Conte seized power. I additionally control for $D_c * 1(t > 1993)$ to allow the pattern of regional favoritism to change after multiparty elections are introduced in 1993.²⁶ Therefore, coefficient γ measures the impact of Conte’s power until multiparty elections were introduced. In the estimation, standard errors are clustered at the district level to take into account serial and spatial correlations in each district.

The identifying assumption for consistent estimation of γ is that the error term, ε_{imct} , is strictly exogenous to $D_c * 1(t > 1984)$ and $D_c * 1(t > 1993)$ conditional on mother and year fixed effects and exogenous covariates. As mother fixed effects are controlled for, changes in the composition of mothers over time for each district do not affect this identifying assumption. If economic conditions in Sousou majority districts were improving around 1984 while there was no such improvement in other areas of Guinea, however, this assumption breaks down. In some specifications, I partly deal with this concern by replacing year fixed effects with region-year fixed effects where regions include Lower Guinea, Middle Guinea, Upper Guinea, Forest Guinea, and Conakry. Since Sousou majority districts are located in either Lower Guinea or Conakry (see Table 1), this specification exploits variation within these two regions only, minimizing the difference in the trajectory of the error term between Sousou-majority districts and others. Also, I additionally control for district-specific linear trends to take into account the possibility that Sousou-majority districts exhibit a linear declining trend in infant mortality over time, perhaps due to bauxite mining as discussed in Section 3.3.

Table 3 shows the results of estimating equation (1). Column (1) shows that infant mortality drops by 2.3 percentage points for mothers living in Sousou-majority districts after 1984, and this result is statistically significant at 10 percent level. Column (2) controls for region-year fixed effects instead of year fixed effects. The estimate becomes noisier, but the magnitude of the coefficient becomes larger. Column (3) additionally controls for district-specific linear trends. Now the sign of the coefficient flips and it is not

²⁶See Posner (2005, 2007) for the impact of political regime change on ethnic politics.

statistically significant. These results suggest that Sousou-majority districts have a steeper declining trend in infant mortality than the other districts over time, casting doubt on the interpretation that the coefficient estimates in columns (1) and (2) reflect the effect of Conte seizing power. Columns (4) and (5) restrict the sample to mothers in urban and rural areas, respectively, with the same specification as in column (3). As health care provisions to rural areas require an extra effort for health professionals (e.g. outreach activities), it might be the case that regional favoritism affects the welfare for urban people only. Alternatively, if health care provision in urban areas had already reached a certain level before 1984, regional favoritism might only affect the welfare for those in rural areas. Estimation results in columns (4) and (5) suggest that neither of these hypotheses appears to be the case. Interestingly, urban areas in Sousou-majority districts became worse off after multiparty elections were introduced in 1993.

To investigate further whether results in columns (1) and (2) are solely due to a steeper declining trend in infant mortality in Sousou-majority districts, I estimate the following equation:

$$y_{imct} = \alpha_m + \beta_t + \sum_{j=1975}^{1993} \gamma_j D_c * 1(t = j) + \delta D_c * 1(t > 1993) + \mathbf{X}_{imct} \boldsymbol{\theta} + \varepsilon_{imct}. \quad (2)$$

Coefficient γ_j measures changes in infant mortality in year j compared to the period until 1974. Estimated γ_j 's in the three specifications (year fixed effects, region-year fixed effects, and region-year fixed effects with district-specific linear trends) are shown in Table 4 and plotted in Figure 1. The figure does not show clearly that infant mortality in Sousou-majority districts relative to the other districts has dropped since 1984.

There are three data issues that may cause estimation bias in the above results. As discussed in Section 3.5, some Guineans in exile during Sekou Toure's rule returned home after 1984. If these people had lived a better life in exile than they did after coming home and mainly returned to Sousou-dominated districts—relatively better-off areas in Guinea as seen in Table 2—the estimation of coefficient γ in equation (1) will be biased upwards. Alternatively, if Guineans in exile lived a worse life and they returned to districts where Sousou people were a minority, coefficient γ will be estimated with upward bias.

In addition, sample selection due to the fact that babies born to women

who are not alive at the survey time may also cause underestimation of the effect of ethnic favoritism. If the survival rate of babies improves with birth order for healthy mothers and worsens for unhealthy mothers, and if unhealthy mothers are more likely to survive in Sousou-dominated districts due to a better health system as a result of favoritism than in other districts, then a difference in differences in infant mortality between Sousou-dominated and other districts will be underestimated.

Finally, misclassifying Sousou-dominated districts may cause the underestimation of the impact of ethnic favoritism. If non-Sousou people have been migrating to Sousou-dominated districts since 1984 because the government treats these districts better, using the sample share of Sousou women in 1999 may misclassify Sousou-dominated districts in the late 1980s as non-Sousou dominated. This misclassification then biases the point estimate towards zero. However, choosing different cut-off values to define Sousou-dominated districts does not yield substantially different results (not reported), suggesting that this concern appears to be minimal.

To conclude this section, there is no clear evidence that Lansana Conte favored districts where many members of his ethnic group reside, though the data issues mentioned above may cause this result.

5 Favoritism within Districts?

To investigate the possibility of individual-level favoritism within each district, I estimate the following equation:

$$y_{imct} = \alpha_m + \chi_{ct} + \psi E_m * 1(t > 1984) + \omega E_m * 1(t > 1993) + \mathbf{X}_{imct} \boldsymbol{\theta} + v_{imct}, \quad (3)$$

where χ_{ct} is a district-year fixed effect and E_m is a dummy indicating whether mother m is a Sousou. To allow multiparty elections to change the impact of ethnic favoritism, I control for $E_m * 1(t > 1993)$. Coefficient ψ measures the difference in changes in infant mortality after 1984 (until 1993) between Sousou and the other ethnic groups conditional on any district-level yearly factor affecting infant survival such as weather and district-level macroeconomic conditions. If favoritism by the government targets Sousou individuals within each district, we should see $\psi < 0$. Standard errors are clustered at the district-ethnicity level. In this analysis, I drop babies born to foreign

women (252 in total) as we are interested in individual-level favoritism among Guineans.

The identification assumption for consistent estimation of ψ is that the error term, v_{imct} , is uncorrelated with all the values of $E_m * 1(t > 1984)$ and $E_m * 1(t > 1993)$ for mother m in years when mother m gives birth and for all babies born in district c in year t , because mother fixed effects and district-year fixed effects are controlled for. This assumption is immune to the possibility that districts dominated by Sousou citizens have improved their health care system or macroeconomic conditions since 1984. If, however, an overall improvement in health care or macroeconomy at the district level differentially affects Sousou people and the other ethnic groups because, for example, Sousou people benefit more due to their superior educational background,²⁷ then we would see a statistically significant estimate of ψ even if the government does not intentionally target Sousou people in its policy reforms. Unfortunately, I cannot disentangle this possibility from ethnic favoritism at the individual level.

Table 5 shows the estimated ψ and ω in equation (3). Column (1) shows that there is no statistically significant difference in changes in infant survival rates between Sousou and the other ethnic groups in the same district. Columns (2) and (3) restrict the sample to urban and rural areas, respectively. Sousou people appear to suffer more in urban areas and benefit more in rural areas, but neither is a statistically significant result. Interestingly, infant mortality for Sousou babies go up by 2.9 percentage points relative to babies of other ethnicity after 1993, which is statistically significant at 10 percent level.

Migration and mortality selection of mothers may drive these results. The estimate of ψ will be biased upwards if Sousou mothers in exile living in a country more favorable for child survival than Guinea returned home after 1984 while exiled mothers from other ethnic groups did not because the new president is not their co-ethnic, for example. If unhealthy mothers do not see a fall in mortality of their babies with birth order as quickly as healthy mothers, and if Sousou unhealthy mothers survive while non-Sousou do not because of ethnic favoritism at the individual level, then the impact of ethnic favoritism will be underestimated.

²⁷In the sample of 3,034 Guinean women born before 1970 (so these women reached a childbearing age by 1984), 24 percent of Sousou women attended school while 12 percent of non-Sousou women went to school (the difference is statistically significant at 1 percent level).

6 Conclusion

This paper exploits an exogenous change in the president's ethnicity in Guinea to empirically test a conventional wisdom that the ethnic group in power is better off than others. Estimation results do not support this claim. After the president's ethnicity change, welfare measured by infant mortality does not improve for districts where the new president's ethnic group predominates relative to other districts. The new president's ethnic group does not see an improvement in welfare compared to other groups within the same district, either. Although these findings are not conclusive due to data limitations, this paper demonstrates an empirical methodology that would provide convincing evidence on ethnic favoritism in the absence of data issues.

If this paper's findings are correct, a natural question to ask is why there is no ethnic favoritism in Guinea. One reason could be that Sousou is similar to Malinke, Toma, and Guerze in terms of languages. Following Caselli and Coleman (2006), one could argue that restricting access to public resources to Sousou people would encourage assimilation by Malinke, Toma, and Guerze peoples (e.g. learning the Sousou language). Each Sousou person's share of the spoils would then be diluted, and it does not pay for Lansana Conte and his co-ethnics to resort to ethnic favoritism.

Another reason could be that the leadership change took place under a non-democratic political system in Guinea. Bates (1983) argues that politicians rely on ethnic appeal to seek political support because, due to the correlation between ethnicity and space, one ethnic group predominates in each constituency. In democracy, obtaining the support from a majority of people in each constituency is crucial to stay in power. In non-democracy, however, what needs to stay in power may be just the support from people in the capital city or in the military, where no single ethnic group predominates.

There are several future studies needed for a better understanding of ethnic favoritism. First, similar empirical analysis needs to be done in other countries. Kenya and Cameroon may be good testing-grounds: in both countries, ethnic rivalries are intense, and there was change in the ethnicity of the president caused by the predecessor's sudden death (Kenya) or resignation for health reasons (Cameroon). However, the succeeding president was already vice-president under the predecessor's rule in both cases, and therefore the exogeneity of which ethnic group seizes power is less plausible.

Another issue is how political regimes affect ethnic favoritism. Posner (2005, 2007) argues that which level of ethnic cleavages matters depends on

whether the political regime is one-party dictatorship or multiparty democracy. In Guinea, some of estimation results in this paper suggest that Sousou-dominated districts or Sousou people seem to suffer relative to others after multiparty elections were introduced in 1993. Further investigation on this issue may shed some light on institutional arrangements that prevent ethnic favoritism from taking place.

Finally, there seems to be discrepancy between actual government policies and their welfare consequences across ethnic groups on one hand and citizens' perception on ethnic favoritism by the government. Posner (2005, pp. 96-100) cites some examples from Zambia, where citizens tend to believe that the president's ethnic group is better off and treated better by the government though there is no such hard evidence. Although this paper fails to provide evidence for the presence of ethnic favoritism in Guinea, ordinary Guineans seem to believe that it matters which ethnic group is in power.²⁸ Reconciliation of this discrepancy needs to be done in order to understand the causes of ethnic conflicts further.

A Data Appendix

The data used in this paper all comes from the Demographic and Health Survey (DHS) conducted in Guinea in 1999.²⁹ This Appendix describes how I construct variables used in the analysis from the original variables and restrict the sample from the original.³⁰

A.1 Construction of variables

The dependent variable in Tables 3 and 4, a dummy for death within the first year of life, is set to be 1 if B7 (the imputed age at death in months) is less than 12, and to be 0 otherwise. There is no missing observation for this variable.

For exogenous controls, a dummy for baby girls is set to be 1 if B4 is 2, and 0 otherwise. A dummy for babies born in multiple birth (twins, triplets,

²⁸Sillah (2007), for example, reports that Peulh people in Guinea now “feel it is their turn to field a president, after Mr Conte and before him, the [Malinke] Sekou Toure.”

²⁹The dataset is downloadable at <http://www.measuredhs.com> after registration.

³⁰In the original DHS dataset, with some exceptions, variables on mother characteristics begin with letter V followed by numbers, and variables on baby characteristics begin with letter B followed by numbers.

and quadruplets) is set to be 1 if B0 is 1 or larger, and 0 otherwise. For these two variables, there is no missing observation.

The birth year of each baby is identified by B2. This is used to control for birth-year fixed effects and to create **Post1984** and **Post1993** in Tables 3 and 4 (dummies for babies born after 1984 and 1993, respectively). As there are few babies born each year before 1970 in the sample (361 in total), these babies are regarded as born in 1969 when birth-year fixed effects are controlled for, to ease computation.

Each baby’s mother is identified by CASEID. This is used to control for mother fixed effects.

The district in which each baby’s mother lives at the survey time is identified by ADM1CODE and ADM2CODE in the GPS data file. ADM1CODE is used for mothers living outside Conakry (ADM1CODE is not 12) to identify which prefecture they live in. ADM2CODE is used for mothers living in Conakry (ADM1CODE is 12) to identify which commune they live in. Combined with the birth year, this is used to control for district-specific linear trends in columns (3) to (5) of Table 3, and to control for district-year fixed effects in Table 5. It is also used to cluster standard errors in Tables 3 and 4.

The region in which each baby’s mother lives at the survey time is identified by V101. Combined with the birth year, this is used to control for region-year fixed effects in columns (2) to (5) of Table 3. See Table 1 for which district belongs to which region.

Sousou (a dummy indicating whether a baby’s mother is Sousou, used in Table 5) is set to be 1 if V131 is 1, and 0 otherwise.³¹

Sousou-majority (a dummy indicating whether a baby is born to a woman who lives in a district where Sousou people predominate in 1999, used in Tables 3 and 4) is constructed as follows. Using a cross-section sample of surveyed women, I first multiply a dummy for Sousou women (set to be 1 if V131 is 1, and 0 otherwise) with the sampling weight of each woman (V005 divided by 1,000,000), because the probability of selection differs between urban and rural clusters within each district. I then calculate the sum of this weighted dummy by each district. The resulting sum is then divided by the sum of the sampling weights for women in each district. Table 1 shows the result. If a baby’s mother lives in a district where this sample share of

³¹Babies born to a woman for whom V131 is missing are dropped from the sample used in Table 5 (see below).

Sousou women exceeds 50 percent, **Sousou-majority** is set to be 1, and 0 otherwise.

To cluster standard errors at the ethnicity-district level in Table 5, V131 is used to identify ethnicities (Sousou, Peulh, Malinke, Kissi, Toma, Guerze, and Others).

A.2 Sample restrictions

From all the babies born to the surveyed women (22,943 in total), I drop 1204 babies born within 12 months before the survey date. For columns (4) and (5) of Table 3 and columns (2) and (3) of Table 5, V102 is used to restrict the sample to urban areas (V102 is 1) or to rural areas (V102 is 2). In Table 5, babies born to 92 foreign women (V131 is missing) are dropped from the sample.³²

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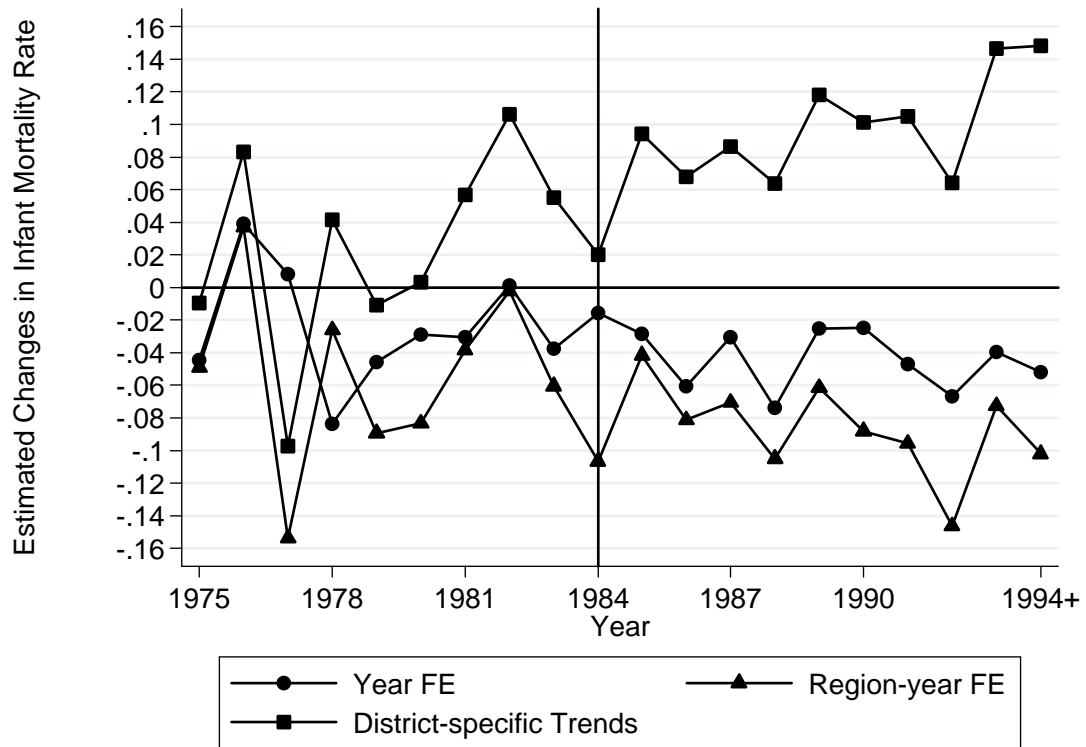


Figure 1: Dynamics of Infant Mortality in Sousou-majority Districts

Notes: Plotted are estimated coefficients reported in Table 4. The series “Year FE” corresponds to column (1) in Table 4; “Region-year FE” column (2); and “District-specific Trends” column (3). See Table 4 for more details.

Table 1: Shares of Sousou Women by District

District Name	Sousou share
<i>Prefectures in Lower Guinea</i>	
Boffa	87.5%
Boke	46.4%
Coyah	67.1%
Dubreka	86.9%
Forecariah	73.8%
Fria	74.3%
Kindia	56.3%
Telimele	0.9%
<i>Prefectures in Middle Guinea</i>	
Dalaba	0.0%
Gaoual	0.0%
Koubia	0.0%
Koundara	3.3%
Labe	0.6%
Lelouma	0.0%
Mali	0.6%
Mamou	1.0%
Pita	0.0%
Tougue	1.5%
<i>Prefectures in Upper Guinea</i>	
Dabola	0.9%
Dinguiraye	0.9%
Faranah	19.2%
Kankan	0.0%
Kerouane	0.9%
Kouroussa	0.0%
Mandiana	0.0%
Siguiri	0.0%
<i>Prefectures in Forest Guinea</i>	
Beyla	0.0%
Gueckedou	0.9%
Kissidougou	0.9%
Lola	0.0%
Macenta	0.0%
Nzerekore	0.0%
Yomou	0.0%
<i>Communes in Conakry</i>	
Dixinn	26.4%
Kaloum	64.9%
Matam	67.3%
Matoto	41.5%
Ratoma	36.2%

Notes : Shown in this table are the sample shares of Sousou women among women aged between 15 to 49 by district. See Appendix for details on how these figures are obtained.

Table 2: Sample Average Infant Mortality Rates

Sample	All Years	Until 1984	From 1985
All	12.3% (21739)	15.4% (6406)	11.1% (15333)
Sousou majority districts	10.8% (3861)	14.6% (1191)	9.1% (2670)
Other districts	12.7% (17878)	15.6% (5215)	11.5% (12663)
Sousou mothers	10.2% (4315)	12.7% (1366)	9.1% (2949)
Other mothers	12.9% (17424)	16.1% (5040)	11.6% (12384)

Notes : The numbers of observations are in parentheses.

Table 3: Ethnic Favoritism at the District Level

(The Dependent Variable: Death within the first year of life)

	(1)	(2)	(3)	(4)	(5)
sample:	all	all	all	urban	rural
Sousou-majority*Post1984	-0.023* [0.012]	-0.031 [0.020]	0.026 [0.029]	0.040 [0.042]	0.017 [0.050]
Sousou-majority*Post1993	-0.007 [0.016]	-0.013 [0.020]	0.025 [0.021]	0.079*** [0.017]	-0.005 [0.029]
Year fixed effects	YES	NO	NO	NO	NO
Region-year fixed effects	NO	YES	YES	YES	YES
District-specific linear trends	NO	NO	YES	YES	YES
Number of Districts	38	38	38	28	33
Number of Mothers	5183	5183	5183	1560	3623
Observations	21739	21739	21739	5938	15801
Adjusted R-squared	0.069	0.070	0.071	0.024	0.083

Robust standard errors clustered at the district level are reported in brackets. In all columns, a dummy for baby girls, a dummy for babies born in multiple birth, and mother fixed effects are controlled for. "Sousou-majority" is a dummy indicating whether a baby's mother lives in a district with Sousou women accounting for more than half the female population aged 15 to 49 in 1999; "Post1984" and "Post1993" are dummies for whether a baby is born after 1984 and 1993, respectively. Columns (1) to (3) include all babies in the sample; column (4) only babies born to women living in urban areas in 1999; column (5) only babies born to women living in rural areas in 1999.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Dynamics of Infant Mortality Changes in Sousou-dominated Districts
(The Dependent Variable: Death within the first year of life)

	(1)	(2)	(3)
1975	-0.045 [0.062]	-0.049 [0.098]	-0.010 [0.124]
1976	0.039 [0.113]	0.037 [0.129]	0.083 [0.178]
1977	0.008 [0.071]	-0.154*** [0.055]	-0.097 [0.106]
1978	-0.084 [0.065]	-0.026 [0.078]	0.041 [0.142]
1979	-0.046 [0.068]	-0.089 [0.064]	-0.011 [0.145]
1980	-0.029 [0.074]	-0.083 [0.075]	0.003 [0.171]
1981	-0.031 [0.031]	-0.038 [0.059]	0.057 [0.209]
1982	0.001 [0.038]	-0.002 [0.032]	0.106 [0.191]
1983	-0.038 [0.041]	-0.060 [0.055]	0.055 [0.229]
1984	-0.016 [0.054]	-0.107* [0.062]	0.020 [0.210]
1985	-0.029 [0.046]	-0.042 [0.048]	0.094 [0.240]
1986	-0.061 [0.041]	-0.081 [0.055]	0.068 [0.283]
1987	-0.031 [0.059]	-0.071 [0.057]	0.087 [0.300]
1988	-0.074* [0.040]	-0.105 [0.068]	0.064 [0.331]
1989	-0.025 [0.041]	-0.061 [0.067]	0.118 [0.333]
1990	-0.025 [0.045]	-0.088* [0.049]	0.101 [0.312]
1991	-0.047 [0.047]	-0.096* [0.049]	0.105 [0.362]
1992	-0.067* [0.035]	-0.146*** [0.059]	0.064 [0.388]
1993	-0.04 [0.039]	-0.072 [0.055]	0.147 [0.397]
1994+	-0.052 [0.039]	-0.102** [0.039]	0.148 [0.426]
Year fixed effects	YES	NO	NO
Region-year fixed effects	NO	YES	YES
District-specific linear trends	NO	NO	YES
Number of Districts	38	38	38
Number of Mothers	5183	5183	5183
Observations	21739	21739	21739
Adjusted R-squared	0.068	0.070	0.070

Robust standard errors clustered at the district level are reported in brackets. In all columns, a dummy for baby girls, a dummy for babies born in multiple birth, and mother fixed effects are controlled for. Estimated coefficients on the interaction between the Sousou-majority district dummy and the dummy for the year indicated are reported.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Ethnic Favoritism within Districts
(The Dependent Variable: Death within the first year of life)

	(1)	(2)	(3)
sample:	all	urban	rural
Sousou*Post1984	-0.004 [0.025]	0.024 [0.034]	-0.039 [0.039]
Sousou*Post1993	0.029* [0.015]	0.040* [0.023]	0.022 [0.023]
Number of Ethnicity-districts	134	90	98
Number of Mothers	5116	1526	3590
Observations	21487	5819	15668
R-squared	0.077	0.017	0.087

Robust standard errors clustered at the ethnicity-district level are reported in brackets. In all columns, a dummy for baby girls, a dummy for babies born in multiple birth, mother fixed effects, and district-year fixed effects are controlled for. "Sousou" is a dummy indicating whether a baby is born to a Sousou woman; "Post1984" and "Post1993" are dummies for whether a baby is born after 1984 and 1993, respectively. Column (1) includes all babies in the sample; column (2) only babies born to women living in urban areas in 1999; column (3) only babies born to women living in rural areas in 1999.

* significant at 10%; ** significant at 5%; *** significant at 1%