The Making of a (vice-) President: Party Politics, Ethnicity, Village Loyalty and Community-Driven Development

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Abstract

African politics are often said to be dominated by ethnic divides, with the ensuing policies implemented by leaders being based almost exclusively on their ethnic power base. In this paper, we demonstrate that the village of origin of democratically-elected leaders matters for the attribution of development projects in the context of one of the largest Community-Driven Development (CDD) programs in Senegal. After showing that leadership matters, we consider those factors that determine who is elected president (and vice-president) of a *Conseil rural*, the smallest administrative unit in Senegal. We also consider the link between power in the *Conseil rural* and that in the *Conseil de Concertation et de Gestion* (*CCG*), an assembly coopted by the *Conseil rural* president that is typical of local institutions set up in the context of CDD programs, and which is responsible for the participative identification of the development projects that constitute the priorities of villagers. Using a unique dataset, we show that ethnicity plays almost no role in determining who becomes president (or vice-president) of a *Conseil rural*, while party politics, age, political experience, village loyalty, and educational and professional qualifications do. Our findings highlight the crucial importance, in terms of development policy, of the local political institutions that are often reinforced or created alongside CDD programs.

Keywords: community-driven development, role and determinants of leadership, decentralization.

JEL: D78, H40, H72, O18.

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1 Introduction

What determines the choice of local political leaders in Africa, within the context of nominally democratic institutions? And does the identity of these leaders matter in terms of development policy, particularly with respect to the attribution of projects that are the bread and butter of CDD programs? Using a unique dataset stemming from an important CDD program in Senegal, this paper attempts to shed light on these two important questions. In particular, we show that the village of origin of democratically-elected leaders at the local level is a significant determinant of which villages get projects and which do not, and that leaders are chosen largely on the basis of geographical loyalties, party politics and various individual characteristics, though not on account of their ethnicity.

There is a widespread belief in the economics profession that ethnicity is the root of many evils in Africa, as crystallized in the influential paper by Easterly and Levine (1997).[1] But what about party politics? Contrary to economists, political scientists working on Africa have focused not only on ethnicity but on democratic politics as well.[2] Indeed, Smith (2000) notes that:

> *Perhaps the two most prominent issues of interest in political studies of Africa in the past decade have been ethnicity and democracy. The spectre of ethnic conflict so prominent in popular press accounts of Africa has been balanced to some extent by an academic interest in issues of democratization.*

One of the purposes of this paper is to provide an empirical assessment, at least for the Senegalese case, of what actually matters in terms of policy choices taken at the grassroots level. Moreover, given the recent interest in the empirical impact of leadership on economic growth at the cross-national level (Jones and Olken 2005), it would seem useful to carry out similar analyses at the local level.

This paper also contributes to a growing body of literature dealing with decentralized development. Key references include work by Bardhan and Mookherjee (2000, 2005,2006a, 2006b), Foster and Rosenzweig (2004), Besley and Burgess (2001, 2002) , and Besley and Coate (2003). In contrast to this corpus of work, which is essentially inspired by the Indian experience, our paper provides rare microeconometric evidence in an African context. In terms of its empirical strategy, our work follows in the footsteps of Besley, Pande, Rahman, and Rao (2004) on the allocation of public goods in India, although we go beyond the determinants of the allocation of funds and focus additionally on the determinants of leadership. As with Besley, Pande, Rahman, and Rao (2004), this paper can also be seen as a test of the Weingast, Shepsle, and Johnsen (1981) model of universalistic overspending *versus* agenda setting models in the tradition of Romer and Rosenthal (1978) or Baron (1993).

While the impact of political representation on the distribution of government spending has been extensively documented in the developed world (Atlas, Gilligan, Hendershott, and Zupan (1995), Lee (1998, 2000), Ansolabehere, Gerber, and Snyder (2002), Rodden (2002), Horiuchi and J. (2003)) and in some middle-income countries (Gibson, Calvo, and Falleti (2004)), we know of no evidence on this topic at the local level in Africa. Moreover, the additional value-added that we bring is that our data allow us to study the determinants of political leadership per se, and to disentangle the various characteristics that determine who is a democratically-elected leader and who is not.

[1] See also Alesina, Baqir, and Easterly (1999) on the US.

[2] Note, however, that political scientists are not immune to this criticism: Hyden (1994) refers to the electoral system as often being forgotten in analyses of policymaking in Africa. See Cowen and Laakso (1997) and Golder and Wantchekon (2004) for thorough overviews of electoral studies in Africa.

The structure of this paper is as follows. In section 2, we provide a concise summary of local politics in Senegal and the role played by sub-regional political institutions in terms of the allocation of CDD funds to individual villages. Next we show, for the case of one of the major CDD project in Senegal – the *Programme National d'Infrastructures Rurales* (PNIR) – that (i) village representation at the local government level and (ii) the identity (village origin) of leaders matter in terms of who gets funds and who does not. Having established that leadership is one of the main determinants of the allocation of funds, section 3 then turns to uncovering the determinants of leadership, with a particular focus on whether ethnic concerns are empirically important. Having demonstrated that *Conseil rural* presidencies and vice-presidencies are won on the basis of party politics, political experience, geographical loyalty, educational attainment and professional affiliation, but *not* on the basis of ethnicity, we then consider the determinants of *Comité de concertation et de gestion* (CCG) committee presidencies, since the CCG is the coopted body that identifies eligible village-level projects through a participative process and thus has a major agenda-setting role in terms of the attribution of CDD funds. Section 4 concludes by offering some thoughts on lines for further research on local democratic politics in Africa, and its interaction with decentralized development programs.

2 Local politics and community-driven development in Senegal

2.1 Political decentralization in Senegal

Political decentralization has been an ongoing process in Senegal since the early 1990s (Vengroff and Johnston 1987, 1989; Ndoye, Ibrahima and Philippe 1994), which came to full fruition with the 1996 local elections. At the local level, the key institution is constituted by the *Conseil rural*, a body whose members are elected by universal suffrage for a five year mandate and that operates at the level of the smallest administrative unit in Senegal, the *Communauté rurale* (henceforth, CR).[3] Each CR, of which there are 320 in the country, takes in 40 villages on average. The *Conseil rural* is composed of 20, 24, 28 or 32 members, depending upon whether the population of the associated CR is less than 5,000, between 5,000 and 10,000, between 10,000 and 15,000 or more than 15,000 inhabitants, respectively.[4] The median size of the *Conseil ruraux* considered in this paper is 32 members.

While Senegal has sometimes been dubbed a "semi-democracy" (Beck 1997), it is clear that the *Conseil rural* constitutes a vibrant expression of party politics at the local level. The 1996 local elections, as described by Vengroff and Ndiaye (1998), were fiercely contested and, despite some interference by the ruling Socialist Party of President Abdou Diouf, were largely seen as free and fair.

The *Conseil ruraux* have limited powers of taxation, with the lion's share of their resources coming from transfers from the central government.[5] At the local level, their main sources of revenues are the *taxe rurale* (a poll tax), as well as licenses, patentes, land and real estate taxes.[6] According to the Local Community Code (*Code des collectivités locales*), the *Conseil rural* is responsible for the allocation of all land in the CR (though traditional *Chefs de terre* often play an important role), and

[3] Article 290 of the Electoral Code. For a full description of the functioning of the *Conseil rural*, the reader is referred to Sénégal (1998).

[4] Article 285 of the Electoral Code.

[5] These transfers are essentially earmarked for investment purposes (as opposed to consumption expenditures), as codified in the administrative documents describing the *Fonds de dotation de la décentralisation* (Art. 58 of L. 96-07).

[6] Article 251 of the Local Community Code.

shoulders a share of responsabilities concerning environmental, educational, health, cultural, and urbanistic issues.

The key actors in the *Conseil rural* are its president and vice-presidents (of which there are often two), elected by a simple majority of members. The president is essentially in charge of all of the *Conseil rural*'s workings, including procedural matters and the timing of meetings. His responsibility for the *Conseil rural*'s budget (under the supervision of the *sous-préfet*) and his twin roles both as the representative of the CR and the state's representative at the local level confer undoubted agenda-setting power on the office. Decisions in the *Conseil rural* are taken by a simple majority of those representatives present at meetings, as long as a quorum of 50% of members present is satisfied. An indication of the explicit institutional wish, embodied in the *Conseil rural*, to run counter to traditional power structures in rural Senegal is that village chiefs can be neither president nor vice-president.[7] In some sense, this "negative reservation" policy (to paraphrase the Indian terminology) provides us with an interesting natural experiment in which individual preferences can be revealed in a manner that is legislatively divorced from choices that might be made on the basis of traditional social norms.

2.2 Political institutions created by CDD

A feature of CDD programs is that they often create an additional tier of local institutions geared towards allocating funds between different uses and different communities in the administrative units that fall under their purview. These institutions are also meant to increase the "voice" of groups viewed as being under-represented in local political institutions. In this respect, the first phase of the PNIR was no exception in that a functioning *Conseil de concertation et de gestion* (henceforth, CCG) was a *sine qua non* for villages in a PNIR-eligible CR to be able to access funds.[8]

Designed to ensure the representation of vulnerable/marginalized groups that might not make it onto the *Conseil rural* through the electoral process (the young, women, specific castes), through their cooptation by the *Conseil rural* president (who is also de jure the CCG president), the CCG was responsible for the participative identification of projects to be funded by the PNIR. Its composition was in part determined on the basis of a diagnostic process, designed to enhance the participation by the potential beneficiaries, and implemented by the *Conseil rural* with the assistance of the facilitator alluded to above.

The CCG approved the CR's annual investment plan, reviewed the implementation progress of microprojects, mobilized the contributions of the CR and the local communities, and ensured the transparency of procurement and financial management. The median size of the CCGs in our dataset is 27 members. Its main internal body was the *Bureau*, which comprised, in addition to the *Conseil rural* president, a secretary, an assistant secretary, and five commission presidents (with responsibilities for (i) local investment fund projects, (ii) rural roads, (iii) procurement, (iv) training and communication, and (v) income-generating activities, respectively). In terms of the allocation of PNIR projects the CCG played an essential role in that it received project proposals, determined whether the proposals respected the criteria for eligibility, and either accepted or rejected the proposals. When the CCG accepted a proposal, it was then included in the annual investment plan and

[7] Article 203 of the Local Community Code.

[8] A description of the functioning of the CCG is provided by PNIR (2001).

local development plans which were in turn transmitted to the *Conseil rura*l, which adopted them by a simple majority vote. These were then transmitted to the PNIR's *Bureaux régionaux de coordination* which were responsible for disbursements.

The upshot of administrative decentralization in Senegal in terms of CDD is that the identity of *Conseil rural* presidents and vice-presidents, as well as village representation both on the *Conseil rural* and on the corresponding CCG are likely to be key determinants of the allocation of PNIR funds among the different villages in a given CR. The outcome of the interaction of local political structures and the PNIR is therefore likely to be an essential ingredient in terms of the success or failure of CDD-based development in rural Senegal.

2.3 Who gets projects?

2.3.1 Theoretical model

While the main topic of this paper - what determines who gets to be a *Conseil rural* president or vice-president - is interesting in and of itself from the political economy perspective, the issue is also important from the operational standpoint in the context of CDD, where local political institutions, as shown above for the case of Senegal, play an important role in determining the pattern of attribution of development funds. If the identity of political leaders matters in terms of the attribution of these funds, then the analysis of the determinants of leadership becomes an essential factor in any analysis of decentralized development policy. Before doing so, it is therefore of some importance to consider whether leadership is a statistically significant determinant of the allocation of CDD funds.

In order to organize our thoughts and provide a theoretical basis for the first portion of our empirical work, we consider a simple adaptation of Dixit and Londregan (1998) to the *Conseil rural* context. We assume that the purpose of the Conseil rural president is to maximize his expected level of support within the *Conseil rural* by allocating (i) PNIR funds and (ii) seats on the CCG to various villages.

In conformity with the administrative process set up by the PNIR, we consider a sequential decisionmaking process in which the *Conseil rural* president first allocates seats on the CCG, and then proposes budgetary allocations. We will refer to the allocation of seats on the CCG as the period 1 decisionmaking problem, while the choice of budgetary allocations, given the distribution of seats on the CCG, will be referred to as the period 2 problem. Given the sequential nature of this process, we solve the model by backward induction.

Assume that the *Conseil rural* president from CR c can propose the allocation g_{vc} to village $v = 1,\ldots,V$ within CR $c = 1,\ldots,C$. The total allocation of funds within the CR must satisfy the budget constraint:

$$\sum_{v=1}^{v=V} g_{vc} = G_c \tag{1}$$

where G_c represents the total budget for PNIR projects within CR c. This corresponds to the functioning of the PNIR, as well as many other CDD programs, in which budgets are often fixed at the sub-regional level on a per capita basis. A *Conseil rural* representative from village v is assumed to

have preferences given by:

$$\begin{aligned} & U\left(g_{vc}, N_{vc}^{CCG}, N_{vc}^{CR}, x_{vc}, z_{vc}, \varepsilon_{vc}, \theta_{kc}\right) \\ = \quad & exp\{x_{vc}\alpha + z_{vc}\beta\}\left(\frac{1+N_{vc}^{CCG}}{1+N_{vc}^{CR}}\right)^{\delta} \frac{[\varepsilon_{vc}(1+g_{vc})]^{(1-\gamma)}}{1-\gamma} - \theta_{kc}, \gamma \in (0,1) \end{aligned} \tag{2}$$

where x_{vc} represents characteristics of village v, z_c represents characteristics of the *Conseil rural* president, while θ_{kc} represents the reservation level of utility of representative k, which depends, among other things, on his political ideology (which is independent of the level of expenditures in his village).

The term in $\left(\frac{1+N_{vc}^{CCG}}{1+N_{vc}^{CR}}\right)^{\delta}$ represents the impact on the utility of a representative of the distribution by the president of seats on the CCG, where N_{vc}^{CR} is the number of elected representatives sent by village v to the *Conseil rural*, and N_{vc}^{CCG} is the corresponding number of villagers named to the CCG by the president. Representatives from villages that are over-represented on the CCG ($N_{vc}^{CCG} > N_{vc}^{CR}$) are more likely to support the president, *ceteris paribus*, with the intensity of this effect being parameterized by $\delta > 0$. Conversely, representatives from villages that are under-represented on the CCG are less likely to support the president. In the Political Science literature, the "representativeness" of a polity is often measured using indices of *disproportionality* or *malapportionment* (the general problem being one of measuring *inequity*, as opposed to inequality). Disproportionality refers to the divergence between the number of votes (seats) in a polity attributed to a given political party or social group with respect to their relative importance in the population, whereas malapportionment refers to the same type of divergence, but based on geographical location (for example, Vermont and California both have two Senators, despite the important difference in their relative shares of the US population). Though it would be possible to specify this CCG over-representation effect in terms of some form of disproportionality or malapportionment index such as those proposed by Loosemore and Hanby (1971) or Rae (1971), the chosen parameterization allows for a simple closed-form solution to the two-stage optimization problem of the president.[9] We adopt an additive specification in terms of over-representation on the CCG in order to allow for situations in which a village is not represented, either on the *Conseil rural*, or on the CCG.

Returning to the specification of preferences given in (2) the parameter ε_{vc} allows for heterogeneity in the weighting by representatives of village and *Conseil rural* president characteristics, as well as malapportionment in the allocation of seats on the CCG, on the one hand, and obtaining funds, on the other. In terms of the Dixit and Londregan (1998) model, ε_{vc} would be interpreted as being a measure of the "core support" that the president enjoys in a given village. The parameter $1-\gamma$, for its part, represents the elasticity of a representative's utility with respect to obtaining funds. The additive specification in terms of funds (i.e. the $1-g_{vc}$ term) is chosen in order to allow for situations in which a representative might support a president even in the absence of funding for his village, if village characteristics warrant this or presidential attributes are particularly to his liking.

The basic intuition of this simple model is that the *Conseil rural* president can "buy" some degree of support by over-representing certain villages on the CCG, though this process is constrained by

[9] On the manner of measuring disproportionality or malapportionment, see also Rose (1984), Lijphart (1985), Gallagher (1991), Cox and Shugart (1991), Fry and McLean (1991), Monroe (1994) and Chiaramonte (1995). Pennisi (1998) provides a recent survey.

the ill-will generated in villages with large numbers of representatives on the *Conseil rural* and which are under-represented. The fundamental tradeoff captured by the model is therefore that between allocating PNIR funds, on the one hand, and allocating seats on the CCG, on the other. Representative k will support the president when:

$$U\left(g_{vc}, N_{vc}^{CCG}, N_{vc}^{CR}, x_{vc}, z_{vc}, \varepsilon_{vc}, \theta_{kc}\right) > 0 \tag{3}$$

The *Conseil rural* president is uncertain about the preferences of representatives but assumes that θ_{kc} is distributed in his CR c according to the uniform probability density function (pdf) with mean μ_c and defined over the interval $[\mu_c - \frac{1}{2dc}, \mu_c + \frac{1}{2dc}]$; $\frac{1}{2dc}$ is thus a measure of heterogeneity among representatives in a given CR in terms of their reservation utility (and therefore in terms of their ideology).

Given this functional assumption on the pdf of θ_{kc}, it is then easy to show that the probability that a representative in *Conseil rural c* supports the president's allocation of projects is given by:

$$\begin{aligned} & \Pr\left[U\left(g_{vc}, N_{vc}^{CCG}, N_{vc}^{CR}, x_{vc}, z_{vc}, \varepsilon_{vc}, \theta_{kc}\right) > 0\right] \\ = \quad & d_c \exp\{x_{vc}\alpha + z_c\beta\}\left(\frac{1+N_{vc}^{CCG}}{1+N_{vc}^{CR}}\right)^{\delta} \frac{[\varepsilon_{vc}(1+g_{vc})]^{(1-\gamma)}}{1-\gamma} - \mu_c \end{aligned} \tag{4}$$

For a given pattern $\left(N_{1c}^{CCG}, \ldots, N_{vc}^{CCG}, \ldots, N_{Vc}^{CCG}\right)$ of representatives on the CCG, it follows that the period 2 optimization problem for the president of *Conseil rural c* is given by:

$$\max_{\{g_{1c},\ldots,g_{vc},\ldots,g_{Vc}\}} \sum_{v} \Pr\left[U\left(g_{vc}, N_{vc}^{CCG}, N_{vc}^{CR}, x_{vc}, z_{vc}, \varepsilon_{vc}, \theta_{kc}\right) > 0\right] \quad s.t \quad \sum_{v=1}^{v=V} g_{vc} = G_c \tag{5}$$

Letting λ_c denote the Lagrange multiplier associated with the budget constraint, the FOCs for this problem are then given by:

$$\left(1+g_{vc}\right)^{\gamma} = \lambda_c^{-1} d_c \exp\{x_{vc}\alpha + z_c\beta\}\left(\frac{1+N_{vc}^{CCG}}{1+N_{vc}^{CR}}\right)^{\delta} \varepsilon_{vc}^{1-\gamma}, \quad v = 1, \ldots, V \tag{6}$$

Taking logarithms and adding a time dimension t yields the specification:

$$\ln\left(1+g_{vct}^{*}\right) = x_{vct}\zeta + \left[\ln\left(1+N_{vc}^{CCG}\right) - \ln\left(1+N_{vc}^{CR}\right)\right]\pi + \theta_{ct} + \eta_{vct} \tag{7}$$

where $\zeta = \gamma^{-1}\alpha$, $\pi = \gamma^{-1}\gamma$, $\theta_{ct} = \gamma^{-1}\left(z_{ct}\beta - \ln\lambda_{ct} + \ln d_{ct}\right)$ and $\eta_{vct} = \gamma^{-1}\left(1-\gamma\right)\ln\varepsilon_{vct}$

Substituting back into the president's objective function yields his initial, period 1, optimization problem in terms of the allocation of seats on the CCG:

$$\begin{aligned} & \max_{\{N_{1c}^{CCG},\ldots,N_{vc}^{CCG},\ldots,N_{Vc}^{CCG}\}} \Pr\left[U\left(g_{vc}, N_{vc}^{CCG}, N_{vc}^{CR}, x_{vc}, z_{vc}, \varepsilon_{vc}, \theta_{kc}\right) > 0\right] \\ & s.t. \quad \textstyle\sum_{v=1}^{v=V} N_{vc}^{CCG} = N_c^{CCG} \end{aligned} \tag{8}$$

where g_{vct}^{*} is given by 7. Solving for N_{vc}^{CCG} and substituting back into 7 yields an alternative specification given by:

$$\ln\left(1+g_{vct}^{*}\right) = x_{vct}\widetilde{\zeta} + \ln\left(1+N_{vc}^{CR}\right)\widetilde{\pi} + \widetilde{\theta}_{ct} + \widetilde{\eta}_{vct} \tag{9}$$

where

$$\begin{aligned}\widetilde{\zeta} &= (\gamma-\delta)^{-1}\alpha, \quad \widetilde{\pi} = -(\gamma-\delta)^{-1}\delta, \quad \widetilde{\eta}_{vct} = (\gamma-\delta)^{-1}(1-\gamma)\ln\varepsilon_{vct} \\ \widetilde{\theta}_{ct} &= (\gamma-\delta)^{-1}\left[\delta\ln\left(\frac{\delta}{\gamma(1-\gamma)}\right) + z_{ct}\beta - (1-\delta)\ln\lambda_{ct} - \delta\ln\varphi_c + \ln d_{ct}\right]\end{aligned}$$

and where φ_c is the Lagrange multiplier associated with (8).

Equation (7) is instructive in terms of the appropriate empirical specification. On the one hand, the evolution over time of the Lagrange multiplier associated with the CR budget constraint (λ_{ct}), the characteristics of the *Conseil rural* president (z_{ct}) and heterogeneity in the distribution of ideology across representatives in the CR, as parameterized by d_{ct}, are all accounted for by CR-period-specific effects θ_{ct}. In equation (9), $\widetilde{\theta}_{ct}$ also accounts for any variation in the severity of the constraint on the total number of CCG members. On the other hand, note that the village-CR-time effects represented by ε_{vct} are assumed in the error term η_{vct} (or $\widetilde{\eta}_{vct}$) of the specification. Though it is possible that some degree of correlation will persist between the explanatory variables x_{vct}, N_{vc}^{CR} (and N_{vc}^{CCG} in (7)) and this disturbance term, we can reduce the likelihood of this by including time-invariant village-specific effects alongside the CR-period-specific effects. Nevertheless, keeping this last point in mind, it is wise to exercise caution in drawing *causal* inference concerning the determinants of who gets projects and who does not on the basis of equation (7). Note that equation (9) is arguably less likely to be affected by endogeneity issues than (7) in that it excludes the number of villagers on the CCG, which is a choice variable available to the president. On the other hand, CCG membership is determined well before the allocation of projects, and can therefore be taken as being predetermined. In what follows, we shall present results that correspond both to (7) and to (9).

2.3.2 Data and econometric evidence

The data used in this section to study the allocation of PNIR funds stem in part from a unique set administrative databases from village panel databases collecting for a quasi-experimental impact evaluation of the PNIR over a period of two years (2003 - 2005). It covers 71 villages in which we conducted household surveys, most of these villages are observed over 5 periods, for a total of 341 observations. Here, we restrict the sample to eligible villages, i.e. only 193 observations of 52 villages. Of these 193 village-time periods, 22 boasted a *Conseil rural* president and 16 a *Conseil rural* vice-president.

As can be seen from Table 1, on average, a village-period in this sample sends 1.73 representatives to the *Conseil rural* ($std.$ = 3.14) and 2.01 members to the CCG ($std.$ = 3.67). Most villages in this subsample (75%) were not connected to the national electricity grid, whereas 51% benefited from a national literacy program. Mean village size was 1,180 inhabitants ($std.$ = 1,253).

In Table 2, we present simple tests of the difference in the unconditional means of village characteristics in the eligible group between these with completed project and these without. We observe that the number of *Conseil rural* vice-president is significantly important in the village with completed project than in non-completed villages, whereas there is no statistically difference in terms of *Conseil rural* president. In addition, most CCG commission presidents are from village with completed projects, and the difference compared to non-completed villages is statistically significant. There is a same pattern with the number of villagers on a *Conseil rural* and on CCG. This simple

Table 1: Descriptive Statistics

	mean	min	max	SD
Village has received a completed PNIR project	0.47	0	1	0.50
Villager is:				
Conseil rural/CCG president	0.11	0	1	0.31
Conseil rural vice-president	0.08	0	1	0.27
CCG commission president	0.10	0	1	0.30
Number of villagers:				
on *Conseil rural*	1.73	0	17	3.14
on *CCG*	2.01	0	23	3.67
Village characteristics:				
Population of village	1,180	135	8,516	1,253
Electricity in village	0.25	0	1	0.43
Literacy program in village	0.51	0	1	0.50

statistical descriptive analysis show that there is an important difference between villages with completed projects and those without in terms of the composition of the *Conseil rural* and the CGG, where the last decision for the allocation of PNIR is taken.

In order to test our theoretical prediction, we implement a linear probability model based on Equations (7) and (9). Our dependent variable is defined as:

$$y_{vct} = \begin{cases} 1 \text{ if } g_{vct} > 0, \\ 0 \text{ if } g_{vct} = 0, \end{cases} \tag{10}$$

It takes on the value 1 when the village receives a completed PNIR project and thus $g_{vct} > 0$, whereas it is equal to zero when the village has no PNIR project and therefore $g_{vct} = 0$. Of the 193 observations (village-periods) in our dataset, 92 benefited (30 villages) from a completed PNIR project, with the three main forms of infrastructure being potable water, a primary school, and a health center. The key elements of x_{vct} are two dummy variables that indicate whether a villager is *Conseil rural* president or vice-president. The matrix x_{vct} also includes dummy variables that indicate whether the village is connected to the national electricity grid and whether the village is the beneficiary of a national literacy program, as well as the logarithm of village population. Our linear probability model is:

$$y_{vct} = \alpha + x_{vct}^{'}\beta + \theta_{ct} + \eta_{vct} \tag{11}$$

where θ_{ct} and η_{vct} are defined in Equation (7); θ_{ct} allow to control for CR-specific effect and η_{vct} controls for village-CR-time effects.

The result of estimating Equation (11) based on Equations (7) and (9) are presented in Table 3. Two empirical results stand out in column (1). First, a villager being president of the *Conseil rural* significantly increases the likelihood of the village receiving a PNIR project. In quantitative terms, the *Conseil rural* presidency increases this likelihood by 20% and is highly significant ($p-$value = 0.011). Second, holding the *Conseil rural* vice-presidency does not significantly affect a village's likelihood of receiving a PNIR project.

In column (2) we add the number of villagers present on the *Conseil rural* ($\ln\left(1+N_{vc}^{CR}\right)$), which

Table 2: Test of equality of means and distribution of villages characteristics

	Mean (standard deviation)		H_0 : no difference	H_0 : equality of distributions	
	completed project		in means	Bartlett	Kolmogorov
variables	yes	no	[p−value]	[p−value]	[p−value]
Villager is:					
Conseil rural/CCG president	0.152 (0.361)	0.079 (0.271)	0.072 [0.112]	7.701 [0.006]	0.073 [0.944]
Conseil rural vice-president	0.141 (0.350)	0.029 (0.170)	0.111 [0.004]	46.250 [0.000]	0.586 [0.522]
CCG commission president	0.163 (0.371)	0.049 (0.218)	0.113 [0.009]	26.141 [0.000]	0.113 [0.500]
Log number of villagers on:					
CCG minus that on *Conseil rural*	0.089 (0.745)	−0.010 (0.421)	0.099 [0.250]	29.743 [0.000]	0.192 [0.040]
Conseil rural	0.768 (0.741)	0.559 (0.721)	0.208 [0.049]	0.072 [0.788]	0.187 [0.048]
CCG	0.857 (0.859)	0.549 (0.742)	0.307 [0.008]	2.000 [0.157]	0.174 [0.081]
Log village population	6.897 (0.710)	6.577 (0.856)	0.319 [0.005]	3.283 [0.070]	0.266 [0.001]

Testing the null that the distributions of the variables are identical between villages in CRs that have completed project and non-completed project. Tests of the equality of means, Bartlett and Kolmogorov-Smirnov tests of the equality of the distributions.

Table 3: The determinants of which villages receive a PNIR project .

Dependent variable	Village has received a completed PNIR Project				
Villager is:	(1)	(2)	(3)	(4)	(5)
Conseil rural/CCG president	0.205 (0.08)	0.361 (0.11)	0.345 (0.13)	0.207 (0.06)	0.289 (0.08)
Conseil rural vice-president	−0.037 (0.08)	−0.076 (0.08)	−0.056 (0.12)	−0.058 (0.08)	−0.076 (0.08)
CCG commission president				−0.106 (0.09)	−0.074 (0.08)
Log number of villagers on:					
CCG minus that on *Conseil rural*				0.135 (0.05)	
Conseil rural		−0.124 (0.05)	−0.120 (0.08)		−0.168 (0.06)
CCG					0.103 (0.04)
Log village population	−0.099 (0.03)	−0.084 (0.03)	−0.061 (0.03)	−0.093 (0.03)	−0.087 (0.03)
CR-period specific effects included	yes	yes	yes	yes	yes
Village-specific RE included	no	no	yes	no	no
Hausman test [p−value]			0.700 [0.999]		
Number of observations	193	193	193	193	193
Number of villages	52	52	52	52	52
σ	0.217	0.210	0.144	0.208	0.207
$\overline{R}^2$	0.810	0.823	0.903	0.826	0.828

Linear probability model; 5 periods, 22 communautés rurales, 52 villages, 104 Communautés rurales-time periods, 193 observations (92 observations correspond to villages that received a PNIR project; Huber-White standard errors in parentheses below coefficients); dummy variables for connection to the national electricity grid and presence of a literacy program included in all specifications.

corresponds to the theoretical specification given by equation (9). The coefficient associated with holding the presidency increased to 0.361, while that associated with the number of villagers present on the *Conseil rural*, $\widetilde{\pi}$ is equal to -0.124 ($p-$value = 0.026) and is *negative* as predicted by our theoretical model (since $\widetilde{\pi} = -\left(\gamma - \delta\right)^{-1}, \delta < 0$). In column (3) we include time-invariant village random effects in order to control, in a nested fashion, for at least a portion of $\widetilde{\eta}_{vct}$: their orthogonality with respect to the explanatory variables is not rejected by the appropriate Hausman test. None of the essential results reported in column (2) are significantly affected.

In column (4) we estimate the model given by (7) in which we include $\ln\left(1+N_{vc}^{CCG}\right)-\ln\left(1+N_{vc}^{CR}\right)$ instead of $\ln\left(1+N_{vc}^{CR}\right)$. We also include a dummy variable that is equal to one when a villager is a CCG commission president. Two results are worth noting. First, as with *Conseil rural* vice-presidencies, CCG commission presidencies do not affect the likelihood of a village receiving a PNIR project. Second, and in conformity with the theoretical model presented in (7), the likelihood of obtaining a PNIR project is an increasing function of $\ln\left(1+N_{vc}^{CCG}\right)-\ln\left(1+N_{vc}^{CR}\right)$. In column (5) we relax the restriction (which is rejected with a $p-$value of 0.112) that the coefficients associated with $\ln\left(1+N_{vc}^{CCG}\right)$ and $\ln\left(1+N_{vc}^{CR}\right)$ sum to zero, yielding a slightly less restrictive version of (7). As suggested by our theoretical model, the coefficient associated with $\ln\left(1+N_{vc}^{CCG}\right)$ is positive and statistically significant, whereas that associated with $\ln\left(1+N_{vc}^{CR}\right)$ is negative and also statistically significant. The negative coefficient associated with $\ln\left(1+N_{vc}^{CR}\right)$ in columns (2), (3), (5) and (6) (and the positive coefficient associated with $\ln\left(1+N_{vc}^{CCG}\right)-\ln\left(1+N_{vc}^{CR}\right)$ in column (4)) provides compelling evidence that malapportionment between seats on the *Conseil rural* and on the CCG is an important component of the preferences of representatives. In contrast, the positive coefficient associated with $1+N_{vc}^{CCG}$ is compatible with a model in which the feasible set from which the vector $\left(g_{1c},\ldots,g_{vc},\ldots,g_{Vc}\right)$ is drawn is determined by the allocation of CCG seats. This would be the case, for example, in a bargaining model of bicameral legislatures in which the malapportioned house (the CCG here) has proposal power, such as that recently proposed by Ansolabehere, Snyder, and Ting (2003).[10] In both cases, agenda setting would appear to provide the most reasonable theoretical framework within which to interpret our econometric results.

A final remark on our findings involves the impact of village population on the likelihood of obtaining a PNIR project. Contrary to what one might imagine, but in conformity with the negative coefficient associated with village representation on the *Conseil rural*, the probability of obtaining a PNIR project is a significantly *decreasing* function of village population. A potential explanation for this result might be that the CCG malapportionment effect in (2) takes a slightly more complex, composite, form given by:

$$\left(\frac{1+N_{vc}^{CCG}}{1+N_{vc}^{CR}}\right)^{\delta}\left[\frac{1+\left(N_{vc}^{CCG}/\sum_{v}N_{vc}^{CCG}\right)}{1+\left(P_{vc}/\sum_{v}P_{vc}\right)}\right]^{\xi}$$

where P_{vc} represents the population of village v. In this context, representatives will be more (less) likely to support the president not only when their village is over (under)- represented on the CCG with respect to its representation on the *Conseil rural*, but also when it is over (under)-represented on the CCG with respect to its population.

The jist of these empirical results is (i) that the pattern of allocation of PNIR funds is consistent

[10] See, in particular, their Proposition 4. If proposal power were vested in the *Conseil rural* (which is not the case here) then their model would predict no impact of CCG representation on the likelihood of obtaining a PNIR project.

with an agenda-setting model in which the preferences of *Conseil rural* representatives are a function of the malapportionment in the "bicameral" structure established by CDD and (ii) that the identity of leaders - in this case the village of origin of the *Conseil rura*l president - is one of the key determinants of whether a village receives a PNIR project or not. In quantitative terms, holding the presidency increases the likelihood of a village receiving a completed project by between 20 and 36%, depending upon the specification, and these marginal effects are always estimated quite precisely.

3 Who gets elected president of the *Conseil rural*?

3.1 Observables characteristics

Having established, in the Senegalese case, that leadership is one of the most important determinants of which villages receive CDD projects and which do not, we now turn to understanding the determinants of leadership *per se*. There are at least five observable dimensions along which candidates for the presidency may appeal to members of the *Conseil rural*. The first is their political party. Though there is a plethora of political parties in our sample, there are four that are empirically relevant: the *Parti Démocratique Sénégalais* (PDS) of President Wade, the *Parti Socialiste* (PS) of former president Abdou Diouf, the *Alliance des Forces de Progrès* (AFP) and the *Union pour le Renouveau Démocratique* (URD).[11] Political experience, as measured for example by one's tenure on the *Conseil rural*, is likely to be an important factor that could increase the likelihood of election of incumbent members to the presidency.

The second dimension is ethnicity: as noted above, ethnicity has been identified by many researchers as the essential individual characteristic in modern African societies. In Senegal, however, there is a widespread belief that ethnicity is not as important as in many other African countries, though the rebellion in Casamance (and the conflict between the local Diola ethnic group and Wolof "colonizers") can in part be attributed to ethnic tensions. Senegal is also particular in that, apart from French, Wolof has become the *lingua franca* (on Wolofisation in Senegal see O'Brien (1998)).

Human capital is a third dimension through which candidates can differentiate themselves. This is in part due to the important degree of social differentiation in Senegal that is based on educational attainment (Patterson 1998), though this simplistic linear picture is complicated by the relative importance of the Islamic movement in general and Islamic education in particular (Villalon 1995). Pure age effects are also likely to be a prominent determinant of an individual being categorized as "presidentiable". This last characteristic is even embodied in Article 203 of the Local Community Code which determines the procedure to be followed during the election of the *Conseil rural* president: if one reaches a third vote, because no candidate has obtained an absolute majority during the first two votes, in which case a plurality determines the winner, and if that third or any subsequent votes are tied, it is the oldest candidate who is declared the winner. Other procedural specificities confirm the importance of age: the meeting of the *Conseil rural* in which the president is elected is presided over by the *Conseil rural*'s oldest member.

[11] Note that, in his analysis of the 1996 local elections, using a nationally-representative sample,Vengroff and Ndiaye (1998) identify the PDS and the PS as being in the "big four", whereas two parties, the *Ligue Démocratique* (LD) and the And *Jëf-Parti Africain pour la Démocratie et le Socialisme* (AJ) are not in our list. There are two reasons for this difference. First, as noted earlier, our sample is not representative of Senegal as a whole, but rather of poor rural communities. Second, given that our data correspond to the 2003-5 period, things have evolved since their work.

Professional affiliation, based in part on traditional cleavages between various castes (warriors, *griots*, slaves), but more concretely on differences between peasants, merchants, artisans or civil servants, is a fourth dimension of a candidate that might also be hypothesized to play some role in determining whether he is worthy of, or sufficiently representative for, the *Conseil rural* presidency.

Finally, geographical loyalties, based on one's village of origin, are likely, as everywhere else in the world, to play a leading role in the selection of the *Conseil rural* president. In what follows, we shall contrast the role played by those factors that determine who is president from those that determine the vice-presidency.

3.2 How different are *Conseil rural* presidents and vice-presidents from the average member?

Tables 7 and 8 present descriptive statistics on the members of the *Conseil rural*, and contrast the characteristics of the 1,080 members at large with those of the 42 presidents and 71 vice-presidents (in many, though not in all, *Conseil ruraux* there are two vice-presidents). The $p-$values from simple t-tests of the equality, for a given characteristic, between members overall and presidents and vice-presidents, respectively, are also presented.

Conseil rural presidents and vice-presidents are similar to their members in terms of mean age - 48 years, with almost identical standard deviations. In contrast, no women are presidents, and only 2.8% of vice-presidents are women, compared with 9% of all representatives. Almost more than one-third of members have no schooling, and the proportion of individuals with no schooling who are presidents and vice-presidents is significantly lower. Concomitantly, presidents and vice-presidents are significantly more likely to have attained secondary education, with presidents being much more likely to have some higher (post-secondary) education. In contrast, presidents are significantly less likely than *Conseil rural* members to have attended Koranic school.

More than three-quarters of members belong to the ethnic majority on the *Conseil rural*, and this proportion is not statistically different for presidents and vice-presidents. In contrast, while 68.7% of members at large belong to the majority political party on the *Conseil rural*, 92.8% of presidents do, and this difference is highly significant; vice-presidents, for their part, have roughly the same probability of being a member of the political majority as the average member. The political experience of members and presidents is roughly similar 1.4 terms on the *Conseil rural* - while the experience of vice-presidents is 0.27 times greater than that of the average member, with the difference being highly significant. On average, members and vice-presidents both belong to village delegations of slightly more than 5 representatives, with presidents stemming from significantly larger delegations of over 7 members.

Peasants account for over 50% of all members, and are grossly under-represented in terms of *Conseil rural* presidents - 26%, with the difference being highly significant; the proportion of vice-presidents who are peasants is roughly in line with the overall average. Private (14.2%) and public sector (16.6%) employees are over-represented among presidents (the corresponding proportions for average members are 3.7% and 5.4%, respectively), while public sector employees are over-represented among vice-presidents. Individuals whose livelihood is based on livestock - herders for the most part - account for roughly 10% of members, and the same proportion of presidents, with the proportion being significantly lower for vice-presidents.

Breaking political affiliation down by specific party (in the upper portion of Table 8) reveals the dominant role played by the PDS, with 55.7% being members of that party. The proportion of presidents and vice-presidents who belong to the PDS is not significantly different from the average for all representatives. In contrast, PS party members, who represent 16.7% of all representatives, are significantly more likely to be vice-presidents, of whom they account for 25.3%, while, at the 10% significance level, PIT party members are over-represented as presidents, while URD party members are under-represented as vice-presidents. In terms of ethnic origin, on the other hand, there is almost no statistically significant difference between the proportions of each ethnic group overall and presidents or vice-presidents, though the very small Soninké/Sarakholé and Mandjag ethnic minorities claim one *Conseil rural* presidency each and are therefore technically over-represented.

The picture that emerges from these descriptive statistics and univariate comparisons is that: (i) the average *Conseil rural* member is a 48 year old Wolof peasant who belongs to the PDS party, with either no schooling or Koranic school, who belongs to the ethnic majority (whether the latter is Wolof or is not), who belongs to a village delegation of 5 members, and half of whom have already served one term; (ii) in contrast, *Conseil rural* presidents and vice-presidents are significantly better educated, and are more likely to be wage-earning employees (of the public sector, in particular); the distinguishing features of vice-presidents, with respect to presidents, is that the former are more likely to be peasants, have significantly more political experience, are more likely to be PS party members, and stem from average-sized village delegations, whereas presidents have a significantly larger village power base in the *Conseil rural.* Geographical and partisan political support are key for *Conseil rural* presidents, whereas political experience and belonging to the opposition at the national level (the PS) is the key distinguishing feature of vice-presidents, who are closer to the average *Conseil rural* member than are presidents. No ethnic group appears to be significantly over-represented, with respect to the average member, among presidents or vice-presidents.

3.3 The making of a *Conseil rural* (vice-) president

We now turn to identifying those characteristics that determine whether a member is a president or a vice-president in a multivariate framework, while controlling for unobserved *Conseil rural* - or village-specific heterogeneity. An intuitively appealing theoretical basis for the empirical work that follows is provided by a simple model of multidimensional voting.

We assume that the preferences of *Conseil rural* members, when it comes to choosing a president, are linear, and that they can be represented by:

$$U(\alpha, x) = \alpha.x \tag{12}$$

with $x = \left(x_1, \ldots, x_j, \ldots, x_N\right) \in X$, and where $X \subset \mathbb{R}^N$ is the set of characteristics of a given candidate for the presidency. In our case $N = 6$, with x being composed of (i) educational attainment, (ii) ethnicity, (iii) geographic (village) origin, (iv) political affiliation and experience, (v) professional activity and (vi) unobservables. The vector $\alpha \in \mathbb{R}^N$ represents the preferences of a representative. According to (12), each representative is assumed to evaluate a candidate for the *Conseil rural* presidency as a weighted sum of the candidate's position along each dimension. The *mean representative* is defined

by:

$$\overline{\alpha} = \left(\overline{\alpha}_1, \ldots, \overline{\alpha}_j, \ldots, \overline{\alpha}_N\right) \quad \overline{\alpha}_j = \int_{\alpha \in \mathbb{R}^N} \alpha_j f(\alpha)\, d\alpha \tag{13}$$

where $f(\alpha)$ is the pdf according to which α is distributed across the population of *Conseil rural* members.[12] We assume that $f(\alpha)$ is $\rho-$concave as defined in the version of the Prékopa-Borell Theorem presented in Caplin and Nalebuff (1991). The mean representative's most preferred presidential candidate is denoted by:

$$\overline{x} = \underset{\{x\}}{\arg\max} \quad \overline{\alpha}.x \tag{14}$$

By Theorem 1 in Caplin and Nalebuff (1991) a candidate with characteristics given by $\overline{x}$ will win a vote where the winning majority is given by:

$$1 - \left(\frac{N + 1/\rho}{N + 1 + 1/\rho}\right)^{N+1/\rho} \tag{15}$$

which is approximately equal, for $N = 6$ and $\rho \longrightarrow \infty$, to 60%. Though this is higher than the 50% rule that holds in practice, it is likely that the theoretical foundation for our results is not a bad approximation of what takes place in the electoral arena that is constituted by the *Conseil rural*. Moreover, the theoretical model provides an extremely simple framework within which to interpret what matters in terms of election to the *Conseil rural* presidency or vice-presidency.

Our purpose in what follows is to uncover the values of $\left(\overline{\alpha}_1, \ldots, \overline{\alpha}_j, \ldots, \overline{\alpha}_N\right)$ by estimating a linear probability model over all representatives in our sample in which the dependent variable is equal to 1 when the representative in question is elected *Conseil rural* president and 0 otherwise, and where the explanatory variables are given by the representatives' observable characteristics, which correspond to the vector $\left(x_1, \ldots, x_j, \ldots, x_{N-1}\right)$. Unobservable characteristics x_N of the representative will be subsumed in the error term of the model. Our basic empirical specification is a direct consequence of combining (12) and (13) and is given by :

$$y_{ic} = \overline{\alpha} x_{ic} + \lambda_c + \varepsilon_{ic} \tag{16}$$

where $i = 1, \ldots, I$ indexes individual representatives and $c = 1, \ldots, C$ indexes *Conseil ruraux*; λ_c is a *Conseil rural*-specific effect and ε_{ic} is a disturbance term that accounts for the unobservable component of x and which is assumed to satisfy the usual hypotheses; in particular, for our estimates to be consistent, we must assume that a representative's unobservable characteristics are orthogonal with respect to those that are observable and included in (16). Though this is a matter of econometric faith, our inclusion of a broad spectrum of individual characteristics in x_{ic}, as well as the *Conseil rural* effects λ_c, heightens our confidence in the consistency of our estimates. An alternative specification replaces the Conseil rural index with a village-level index, where (as before) $v = 1, \ldots, V$ denotes the representative's village of origin. The dependent variable is:

$$y_{ic} = \begin{cases} 1 & \text{when representative i is } \textit{Conseil rural} \text{ president of CR } c \\ 0 & \text{otherwise} \end{cases} \tag{17}$$

[12] Note that the usual Median Voter Theorem due to Black (1948) cannot be applied once candidates differ in more than one dimension.

Tables 9 and 10 presents the results of a linear-probability estimation of (16) for the *Conseil rural* president and the vice-president respectively. The column 1 of both tables is pooling. In column 2 we control for *Conseil rural* specific effects λ_c, and in column 3, we control for village of origin effects λ_v. According to the Hausman specification test, our preferable results are when we control for village of origin effects (column 3).

On the basis of our simple theoretical model, the parameters $\overline{\alpha}$ estimated by our linear probability specification correspond to the mean preferences of representatives. Though we cannot interpret individual coefficients in absolute terms, since a voter's preferences are, of course, only determined up to a monotonically increasing transformation, we can intepret them in relative terms. For example, if the coefficient associated with characteristic j is statistically significant whereas the coefficient associated with characteristic k is not, we can infer that the mean representative cares about characteristic j while placing very little weight on characteristic k.

The results confirm and sharpen a number of regularities that were already apparent in the context of the descriptive statistics. First, controlling for other characteristics, older representatives are more likely to be *Conseil rural* presidents: a one percent increase in age increases one's likelihood of being *Conseil rural* president by between 10.9%, when we control for village of origin specific effects (column 3 of Table 9). Age does not affect the probability of being a vice-president (Table 10).

Second, as one would expect from the descriptive statistics, being a woman significantly reduces one's chance of being either a president or a vice-president. Third, educational attainment increases a member's probability of being a president or a vice-president. For example, possessing post-secondary education increases one's probability of being a president by almost 16% when one controls for village of origin specific effects, with respect to the "no education" baseline category. For vice-presidents, it is secondary education that plays this role (9.6%), although its quantitative effect is smaller. Individuals who are literate in a "national language" are slightly more likely to become vice-presidents. Koranic schooling is not associated with any significant effects in terms of becoming president or vice-president.

Fourth, ethnicity would appear to play no role in determining whether a member becomes a *Conseil rural* president. Belonging to the ethnic majority on the *Conseil rural* is not a statistically significant determinant of presidencies. The same is true of vice-presidencies. Fifth, professional affinities play an important role in determining presidencies (this is not the case for vice-presidencies), with the "member of the largest professional group" dummy being largely significant and the principal activity dummies being jointly significant when one accounts for village specific effects.

Sixth, political factors appear to be of paramount importance in determining both presidencies and vice-presidencies, as the "member of the majority political party" dummy is significant for both offices, while our measure of political experience is a significant determinant of vice-presidencies. As appeared in the descriptive statistics, vice-presidents appear to be chosen largely on the basis of their previous terms on the *Conseil rural*.

Finally, as was apparent in the descriptive statistics, geographical loyalties are an important determinant of presidencies (column 1), while they have no impact on the probability of a member becoming vice-president. The difference in the size of village delegations between presidents and the average member (2 members) accounts for roughly a one percent difference in the likelihood of being *Conseil rural* president (Column 1 of Table 9).

As was already apparent in the context of the descriptive statistics, it is therefore obvious that ethnicity plays almost no role in determining who becomes *Conseil rural* president or vice-president, while party politics, geographical loyalties and, to a lesser extent, professional affinities, are the key determinants, alongside age, political experience (for vice-presidents) and educational attainment.

3.4 Are political parties just a veil for regional or ethnic cleavages?

While the results presented so far suggest that ethnic issues are not a significant factor in determining who becomes *Conseil rural* president or vice-president, it may be that we are missing something and that our results hide cleavages along regional or ethnic lines. In other words, perhaps the relative importance of party politics in determining presidencies and vice-presidencies is only a screen behind which ethnic concerns are lurking.

Our focus is on the four big political parties in our sample (PDS, PS, AFP and URD), which account for 90% of the representatives. At the CR level of disaggregation, the PDS is present in 41 out of a total of 42 *Conseil ruraux*, the PS is present in 35, with the AFP and the URD holding seats in 26 and 12 *Conseil ruraux*, respectively. A first, extremely crude measure of the geographical concentration of political parties is given by the relative importance of the CR that accounts for the largest number of a given party's representatives. For the PDS, the *Communauté rurale* of Keur Samba Kane (Djiourbel region) accounts for the largest contingent of its representatives, and this represents a mere 4.49% of the total. For the PS, the corresponding CR is Thilmaka (Thiès region), which accounts for 11.60% of all PS members. For the AFP, Lour Escale (Kolda region in Casamance) accounts for 18.60% of its members in our sample. Finally, for the URD, the most important CR is Déali (Louga region) which accounts for 29.85% of the party's representatives in our sample. These figures are a first indication that the AFP and URD are more concentrated regionally than are the PDS and the PS.

A second, synthetic, measure of the geographical concentration of political parties is given by a Herfindahl (1950) index computed on the basis of the relative importance of each CR as a share of a party's total stock of representatives. It is defined as follow:

$$H_p = \sum_i^n \left(\frac{p_i}{\sum_i^n p_i} \right)^2$$

where n equal the number of *Conseil rural* (i.e. 42) and p_i is the number of representatives from party p in the *Conseil ruraux* i .

If all of a party's representatives were concentrated in a single CR, the index would equal 100%, whereas an evenly distributed stock of representatives over the 42 CRs of our sample would yield an empirical minimum value of $42 \times \left(\frac{1}{42}\right)^2 \times 100 \approx 2.38\%$. The PDS is the most evenly distributed political party in our sample with a CR Herfindahl of 3.04% (close to the minimum), followed by the PS with 4.83%. The AFP and URD are more locally concentrated with CR Herfindahls of 7.55% and 12.71%, respectively.

If we move to a higher level of aggregation – the regional, rather than the CR level – the differences between the first two parties and the latter two are even more apparent. As shown by the statistics presented in Table 4, the AFP is extremely powerful in the Kaolack region, where it accounts for 61 representatives out of a total of 119, compared with the AFP's total stock 129 representatives in our dataset. Similarly, the URD is mainly present in the Louga region, where it accounts for 59 out of 131

Table 4: The four major political parties in poor regions of rural Senegal

	Political Party				Total
	PDS	PS	AFP	URD	
Region:					
Diourbel	114	11	10	0	135
Fatick	34	12	13	1	60
Kolda	47	12	16	1	76
Kaolack	36	22	61	0	119
Louga	32	39	1	59	131
Saint-Louis	110	13	9	5	137
Tambacounda	84	18	14	0	116
Thiès	106	49	4	1	160
Ziguinchor	39	5	1	0	45
Total	602	181	129	67	979

representatives: this region accounts for 88.05% of the URD representatives in our sample.

If we compute Herfindahl indices at the regional level (the empirical minimum for our dataset would be an Herfindahl of $\frac{100}{9} \approx 11.11\%$, the least regionally concentrated party is the PDS, with a regional Herfindahl of 13.21%, followed by the PS with 16.13%, and the AFP with 28.09%. The URD, for its part, comes in at 78.75%, thereby confirming the regional nature of this political grouping.

Tables 11 and 12 present breakdowns of party membership as a function of profession and ethnic group. These data are then combined with personal characteristics in a multivariate framework in Tables 13, 14 and 15, where we consider the determinants of membership in the four main parties of our sample, for the four main ethnic groups (Wolof/Lébou, Pular, Serèr, Manding/Socé) in a multinomial logit (MNL) framework.[13]

Let y be the dependent variable with J nominal outcomes (here four political parties). The categories are numbered 1 through J, but are not assumed to be ordered. Let $\Pr\left(y = m|x\right)$ be the probability of observing outcome m given X, a vector of covariates. Then, formally, the MNL probability model can be written as[14]:

$$\Pr\left(y_i = m|X_i\right) = \frac{\exp\left(X_i\beta_{m|b}\right)}{\sum_{j=1}^{J}\exp X_i\beta_{j|b}} \tag{18}$$

where b is the base category, which is also referred to as the comparison group.

The MNL can also be expressed in terms of the odds[15]. The odds of outcome m versus outcome b given X, indicated by $\Omega_{m|b}(X)$ equal:

$$\Omega_{m|b}(X) = \frac{\Pr\left(y_i = m|X_i\right)}{\Pr\left(y_i = b|X_i\right)} = \frac{\exp\left(X_i\beta_{m|b}\right)}{\exp\left(X_i\beta_{b|b}\right)} = \exp\left(X_i\left[\beta_{m|b} - \beta_{b|b}\right]\right) \tag{19}$$

Since $\beta_{b|b} = 1$, taking logs shows that the MNL is linear in the logit:

$$\ln\Omega_{m|b}(X) = X_i\left(\beta_{m|b}\right) \tag{20}$$

[13]The Manding/Socé dummy drops out of the estimations presented in Tables 13, 14 and 15, due to the tiny number of representatives from these ethnic groups.

[14]For a good introduction to the MNL see Long (1997), and Long and Freese (2006).

[15]The odds indicate how often something ($y = 1$) happens relative to how often it does not happen ($y = 0$), and range from 0 when $\Pr\left(y = 1|X\right) = 0$ to ∞ when $\Pr\left(y = 1|X\right) = 1$.

The coefficient $\beta_{m|b}$, is the effect of X on the logit of outcome m versus base category outcome b. The excluded political party that constitutes the reference group is the PDS. Before, starting the interpretation of the results, we present tests in order to ensure the robustness of our findings.

Firstly, we implement the Independence of Irrelevant Alternatives (IIA) which is an important restrictive. McFadden (1973) suggested that IIA implies that the multinomial should only be used in cases where the outcome categories "can plausibly be assumed to be distinct and weighted independently in the eyes of each decision maker." Similarly, Amemiya (1981) suggests that the MNL works well when the alternatives are dissilar. Care in specifying the model to involve distinct outcomes that are not substitutes for one another seems to be reasonable. Therefore, Hausman and McFadden (1984) proposed a Hausman-type[16] test of IIA property which is presented in Table 5. Although non of the tests reject H_0 that IIA holds, the results differ considerably, depending on the outcome considered. However, one statistic is negative. According to Hausman and McFadden (1984), this is very common, and it is an evidence that IIA has not been violated.

Secondly in Table 13, 14 and 15, we implement the Likelihood Ratio (LR)[17] specification test which suggest that the MNL of the the determinants of membership in the four main parties is not misspecified. In Table 14 we control for CR-specific effects using the Mundlak (1978) procedure (see e.g. Wooldridge (2002) pp 290-291), whereas Table 15 do the same but controlling for village of origin effects. The interpretation will be based on the odds ratio as well as on the raw coefficients sign too.

Several aspects of the results are worth noting. First, the simple multinomial logit results (Table 13) indicate that PS members are significantly older than their PDS counterparts, whom are older than URD members, whereas there is no age difference for AFP members. The odds of PS members relative to PDS members are 3.325 times greater for the older persons than for for the young. However, for URD members relative to PDS members, they are 0.182 times less for the older persons than for the young ones. The significant age difference for PS and URD members disappears once village of origin specific effects are controlled for (Table 15) .

Second, the URD appears to be the only party that is significantly more feminine than the PDS, and this is also the case when village of origin specific effects are controlled for. The odds ratio confirm this situation with a high value in term of preferences(Tables 13 and 15). Third, individuals who completed Koranic schooling or are literate in a "national language" are more likely to be AFP or URD members than they are to be PDS members, though this effect disappears once CR or village of origin specific effects are allowed for. In almost all specifications, education does not have any effect on political affiliation that varies with respect to the PDS baseline. Only individuals with higher education are more likely to be members of the URD than of the PDS when we control for village of origin specific effects.

Fourth, ethnicity only plays a role in terms of membership of the URD: in the simple multinomial logit results and with the CR specific effects results, members of the Pular ethnic group are more

[16]For the MNL, the maximum-likelihood estimator is consistent and efficient if the model is correctly specified. A consistent but inefficient estimator is obtained by estimating the model on a restricted set of outcomes (Ben-Akiva and Lerman 1985). If other alternatives are irrelevant in computing the odds for two outcomes, then omitting those alternatives should not affect the estimates of the parameters that affect the two outcomes.

[17]This test can be thought of as a comparison between the estimates obtained after the constraints (excluding variable x_k) implied by the hypothesis have been imposed to the estimates obtained without the constraints. The LR test assesses the constraint by comparing the log likelihood of the unconstrained model, $\ln L(\hat{\beta}_U)$, to the likelihood of the constrained model, $\ln L(\hat{\beta}_C)$. If the constraint significantly reduces the likelihood, then the null hypothesis that all the coefficient associated with x_k are simultaneously equal to 0 is rejected.

likely to be members of the URD, whereas they are less likely to be AFP members once village of origin effects are included. Note that there are no other significant differences in the results concerning ethnicity between the raw multinomial logit results and those which control for CR or village of origin effects: the village of origin effects are thus not obscuring the presence of any significant ethnic concerns, as one might be led to believe.

Finally, belonging to the "other" professional category increases the likelihood of being a member of the URD, as does being in the construction or livestock sectors. However, professional categories like public sector, artisan, "none", and transport are less likely to be member of the URD. Being in "trade" also increases the likelihood of one being in the AFP or the URD. Other professional categories appear to have no impact on the party to which one belongs.

The upshot is that, apart from a relatively mild (negative) effect of being Serèr (controlling for village of origin) on the likelihood of being a URD member, ethnicity plays no role in determining political allegiance. Though the AFP and URD political parties do display a relatively high degree of regional concentration, this does not appear to be particularly correlated with ethnicity. Political parties therefore do not appear to be a veil for ethnic fractionalization in the Senegalese context, and those factors that determine *Conseil rural* presidencies and vice-presidencies can safely be said not to include ethnic allegiance.

3.5 From the *Conseil rural* to the CCG

So far, we have focused our attention on the determinants of Conseil rural presidencies and vice-presidencies. However, as mentioned in section 2, the *Conseil rural* is not the only body that has decisionmaking and agenda-setting power concerning the identification and attribution of micro-projects. Indeed, as we showed earlier, the size of village representation on the CCG also increases the likelihood of receiving PNIR funds (see Table 3). The question we now pose is the following: does the CCG actually play the role that it is supposed to according to CDD rethoric, in terms of ensuring the voice of disenfranchised groups in CR-level institutions? Or is the CCG simply a toothless offshoot of the *Conseil rural*, which essentially reinforces the importance of those factors that already determine *Conseil rural* presidencies and vice-presidencies?

One simple manner of comparing the representativity of the *Conseil ruraux* versus that of the CCGs is to compute the effective number of villages, parties, ethnic groups, and professions represented in each body. The *effective number* of parties, for example, is simply the inverse of the corresponding Herfindahl index (expressed in absolute, not percentage, terms). These numbers are presented in Table 6, for those cases where both institutions exist. On average, there are two effective parties, two ethnic groups, three professions and between eight and nine villages. The only variable where the CCG can be deemed to be significantly more representative than the *Conseil rural* is professional affiliation. The result that the effective number of professional categories is greater on CCGs than on the *Conseil ruraux* provides some evidence in favor of the hypothesis that the coopted nature of CCGs allows them to redress the vagaries of the results from the ballot box. It does not, however, demonstrate that *Conseil rural* presidents systematically attempt to redress the balance of power that results from the electoral process.

In order to study this phenomenon more clearly, Table 16 considers the determinants of who becomes a CCG commission president, which provides evidence on the outcome of the interaction

between the preferences of the president of the *Conseil rural* (and thus the president of the CCG) and the wish for additional voice for under-represented groups that underlies the formation of the CCG. Though CCG commission presidencies do not directly affect the allocation of PNIR funds (as we demonstrated empirically in part 2), the interaction between the two tiers of leadership established by CDD "bicameralism" is of independent interest, and might indirectly affect the attribution of PNIR projects if CCG commission presidencies affect the set of feasible projects among which the president chooses.[18] We present different specifications in terms of the power of the ethnic group, political party, village or profession to which each representative belongs.

The most commonly used indices of political power are those developed by Shapley and Shubik (1954) and Banzhaf (1965).[19] Based on the concept of the value of an $n-$person cooperative weighted voting game, power indices, which are sometimes referred to as *semivalues* (Dubey, Neyman, and Weber 1981), measure a given group's a priori possibilities of influencing the outcome of a vote in the *Conseil rural*. The Shapley-Shubik index, for example, represents the expected number of times a set of representatives (belonging to a given ethnic group, village, political party or profession) will be in a *pivotal* position, where being pivotal means that one's defection from a winning coalition would turn it into a losing one, and assumes that all permutations (i.e. vote sequences) are equally probable. The Banzhaf index, on the other hand, assumes that all coalitions are equiprobable. Here we use the Penrose version of this measure, also known as the Absolute Banzhaf index.

In addition to the individual characteristics included in our analysis of Conseil rural presidencies and vice-presidencies, we include variables describing the similarity between a given member of the CCG and the *Conseil rural* president (in terms of ethnic group, political party, professional category and village of origin). Three results are worth noting.

First, age and gender are not significant determinants of CCG commission presidencies, whereas primary education is. The absence of a significant negative gender effect, in contrast to the *Conseil rural* results (where women were found to be significantly less likely to be *Conseil rural* presidents), indicates, at least, that there is no gender-bias in terms of the allocation of CCG commission presidencies.

Second, and contrary to the results concerning *Conseil rural* presidencies and vice-presidencies, the various measures of political power considered earlier (whether dummy variables or power indices) do *not* significantly affect the probability of obtaining a CCG commission presidency, with the notable exception of the political weight of the village. Indeed, the coefficient associated with village political power, as measured by its Shapley- Shubik index in terms of CCG representatives, is *negative* and statistically significant at usual levels of confidence. This result is robust to changes in the measure of village political power using, for example, two different Coleman indices or simply the number of representatives, and it is only with the Penrose index (as shown in the first column of the Table 16) that the effect is statistically insignificant. The finding implies that villages with more representatives on the CCG are systematically less likely to have one of their representatives become a CCG commission president, in contrast to the *Conseil rural*, where belonging to a powerful village

[18] In order to study this phenomenon clearly one would need information on the set of potential projects from which those actually implemented were chosen. Though we do have some information on rejected projects, it is not, unfortunately, sufficiently detailed or complete for us to be able to study this process econometrically.

[19] Note that our specification in which the power of a village is simply given by the number of representatives that it sends to the *Conseil rural* is compatible, in a unicameral setting, with the model of legislative bargaining proposed by Snyder, Ting, and Ansolabehere (2005), who question the power index approach.

delegation increased the likelihood of obtaining the presidency. What this means is that the political process within the CCG results in what appears to be a conscious effort to reequilibrate the geographical concentration of power that is the outcome of the choice of the *Conseil rural* president.

Third, despite the negative impact of village power on the likelihood of obtaining a CCG commission presidency, hailing from the same village as the *Conseil rural* president, increases this likelihood, while belonging to the same professional group reduces it. The importance of being from the same village as the *Conseil rural* president highlights the power wielded by the holder of this office and confirms the importance of geographical loyalties. The last result probably stems from an attempt to reequilibrate the relative under-representation of peasants in terms of *Conseil rural* vice-presidencies, with the CCG commission presidencies constituting the consolation prizes.

In summary, our empirical findings concerning the CCG reinforce the view that ethnicity does not matter in terms of local political institutions in Senegal, whereas geographical loyalties are paramount. Concomitantly, the differences between those factors that determine *Conseil rural* presidencies and those that determine CCG commission presidencies reveal an interesting and subtle process by which the weight of village loyalties is tempered in favor of broader geographical and professional representativity.

4 Concluding remarks

In this paper we have showed that democratic leadership is not a vacuous concept in Senegal, and it leads directly to political power that affects the decentralized allocation of resources in the context of CDD. As such, our results are in tune with recent empirical work based on cross-country evidence by Brambor, Roberts Clark, and Golder (2006), who argue that electoral systems are no different in Africa than elsewhere in the world, contrary to the competing notion of African exceptionalism promoted, for example, by Mozaffar and Scarritt (2003). A village that holds the *Conseil rural* presidency significantly increases its likelihood of receiving a CDD project. Given that leadership is not the product of ethnic concerns, it follows that the allocation of CDD funds in Senegal is largely driven by the competitive party (pork-barrel) politics and the usual workings of geographic loyalties. In Senegal, as elsewhere, the old adage holds: all politics is local – and so are the mechanisms by which the spoils of CDD are divided.

Second we have considered the interaction between local politics and CDD operations in Senegal. In our opinion, there are two findings that are particularly interesting. First, political leadership at the local level in Senegal is essentially a function of party politics and geographic loyalties, as well as personal characteristics such as educational attainment, but is not based on ethnicity. Moreover, party politics are not a veil behind which ethnic issues are hiding. In light of the focus of much of the economics literature dealing with Africa on the problems induced by ethnic conflict, this is comforting, and calls for a closer look at the role played by political institutions and party politics. There are also subtle interactions between local political institutions (the *Conseil rural*) and those created specifically by CDD (the CCG), which reveal an attempt to increase the representation of groups that may be somewhat left out in the competitive political arena. The participative rhetoric of CDD is therefore not all rhetoric, at least in Senegal, and actually does translate into facts on the ground.

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Table 5: Hausman test of IIA

Omitted	χ^2	df	$Pr > \chi^2$	Evidence
PDS	16.345	33	0.993	for H_0
PS	0.000	5	1.000	for H_0
AFP	−1.441	34	−−	for H_0
URD	0.000	1	1.000	for H_0

H_0: Odds (Outcome-J vs Outcome-K) are independent of other alternatives.

Table 6: Effective number of parties, villages, ethnic groups and professions for the Conseil rural and the corresponding CCG.

	Conseil rural	*CCG*	$p-$value of difference
Political parties	2.10 (0.75)	2.26 (1.12)	0.493
Villages	8.43 (5.43)	8.90 (4.88)	0.614
Ethnic groups	1.70 (0.72)	1.77 (0.66)	0.582
Professions	2.60 (1.16)	3.30 (1.22)	0.024

Standard deviations in parentheses

Table 7: Characteristics of members, presidents and vice-presidents

	All members	Presidents	$p-$value of difference with members	Vice -presidents	$p-$value of difference with members
Age	47.90 (10.89)	48.11 (10.24)	0.898	47.71 (10.54)	0.879
Female	0.090 (0.287)			0.028 (0.160)	0.057
No schooling	0.334 (0.471)	0.190 (0.397)	0.044	0.183 (0.389)	0.005
Primary education	0.167 (0.373)	0.119 (0.327)	0.390	0.225 (0.420)	0.177
Secondary education	0.182 (0.386)	0.309 (0.467)	0.029	0.309 (0.465)	0.004
Higher education	0.046 (0.210)	0.190 (0.397)	0.000	0.042 (0.202)	0.867
Literate in "national language"	0.090 (0.287)	0.095 (0.297)	0.917	0.098 (0.300)	0.811
Koranic schooling	0.178 (0.383)	0.095 (0.002)	0.150	0.140 (0.350)	0.389
Member of ethnic majority	0.767 (0.422)	0.785 (0.415)	0.776	0.802 (0.400)	0.467
Member of largest professional grp.	0.828 (0.376)	0.785 (0.415)	0.451	0.774 (0.420)	0.211
Member of majority political party	0.687 (0.463)	0.928 (0.260)	0.000	0.760 (0.429)	0.172
Number of terms on *Conseil rural*	1.401 (0.857)	1.476 (0.772)	0.566	1.676 (0.982)	0.005
Number of members from rep.'s vilg.	5.327 (5.433)	7.095 (5.681)	0.031	5.647 (5.477)	0.607
Peasant	0.5037 (0.500)	0.2619 (0.445)	0.001	0.4647 (0.502)	0.497
Trade	0.1314 (0.338)	0.0952 (0.297)	0.478	0.1549 (0.364)	0.545
Livestock	0.1018 (0.302)	0.0952 (0.297)	0.885	0.0563 (0.232)	0.189
Other	0.0879 (0.283)	0.1904 (0.397)	0.016	0.1126 (0.318)	0.447
Public sector employee	0.0546 (0.227)	0.1666 (0.377)	0.001	0.1267 (0.335)	0.005
Private sector employee	0.0370 (0.188)	0.1428 (0.354)	0.000	0.0422 (0.202)	0.809
None	0.0212 (0.144)				
Artisan	0.0222 (0.147)				
Construction	0.0129 (0.113)			0.0140 (0.118)	0.931
Transportation sector	0.0092 (0.095)	0.0476 (0.215)	0.008	0.0281 (0.166)	0.085
Fisherman	0.0083 (0.090)				
Mechanic	0.0046 (0.067)				
Blacksmith	0.0018 (0.043)				
Cobbler	0.0009 (0.030)				
Carpenter	0.0009 (0.030)				

Standard deviations in parentheses; 42 Conseils ruraux and Conseil rural presidents, 78 vice-presidents and 1,080 representatives from a total of 537 villages.

Table 8: Political affiliation and ethnic group

	All members	Presidents	$p-$value of difference with members	Vice -presidents	$p-$value of difference with members
Political affiliation:					
PDS	0.5574	0.5476	0.896	0.6056	0.397
PS	0.1675	0.1666	0.986	0.2535	0.045
AFP	0.1194	0.1190	0.993	0.0704	0.187
URD	0.0620	0.0714	0.797	0.0140	0.083
LD/MPT	0.0250	0.0238	0.959		
Independent	0.0185	0.0476	0.153	0.0140	0.774
AJ/PADS	0.0175			0.0140	0.816
ADN	0.0111			0.0281	0.156
PIT	0.0055	0.0238	0.104		
CDP/GARAB-GI	0.0046				
APJ/JËF-JËL	0.0037				
PLS	0.0027				
RND	0.0009				
PARENA	0.0018				
PRC	0.0009				
PH	0.0009				
Ethnic group:					
Wolof/Lébou	0.4814	0.4285	0.484	0.4507	0.591
Pular	0.2518	0.2619	0.878	0.2394	0.803
Serèr	0.1148	0.0952	0.685	0.1126	0.953
Manding/Socé	0.0537	0.0714	0.603	0.0704	0.518
Diola	0.0287	0.0476	0.454	0.0563	0.149
Soninké/Sarakholé	0.0027	0.0238	0.008	0.0140	0.061
Mandjag	0.0037	0.0238	0.028	0.0140	0.136
Balante	0.0018				
Other Senegalese ethnic group	0.0601	0.0476	0.727	0.0422	0.511
Other Senegalese	0.0009				

42 Conseils ruraux and Conseil rural presidents, 71 vice-presidents and 1,080 representatives from a total of 537 villages.

Table 9: The making of a Conseil rural president

Dependent variable			*Conseil rural* president
Estimator	OLS	*Conseil* rural FE	Village of origin FE
Personal characteristics:	(1)	(2)	(3)
Log age	0.0416 (0.028)	0.0659 (0.028)	0.1092 (0.040)
Female	−0.0398 (0.009)	−0.0448 (0.009)	−0.0688 (0.017)
Educational attainment (excluded category: no schooling):			
Primary education	0.0020 (0.016)	0.0059 (0.017)	0.0010 (0.030)
Secondary education	0.0403 (0.021)	0.0467 (0.022)	0.0240 (0.033)
Higher education	0,0966 (0.047)	0,1229 (0.048)	0,1528 (0.069)
Literate in "national language"	0.0272 (0.022)	0.0302 (0.025)	0.0232 (0.048)
Koranic schooling	−0.0001 (0.012)	−0.0096 (0.018)	−0.0603 (0.045)
Ethnicity:			
Member of ethnic majority	0.0089 (0.012)	0.0023 (0.014)	−0.0127 (0.028)
Profession:			
Member of largest professional group	0.0303 (0.019)	0.0303 (0.019)	0.0424 (0.021)
Politics and political experience:			
Member of majority political party	0.0606 (0.008)	0.0673 (0.008)	0.0866 (0.018)
Number of terms on *Conseil rural*	0.0047 (0.006)	0.0022 (0.006)	0.0021 (0.012)
Geographical loyalty:			
Number of members from representative's village	0.0023 (0.001)	0.0038 (0.001)	
Joint significance of:			
Ethnic group dummies: $p-$value	0.251	0.454	0.056
Profession dummies: $p-$value	0.000	0.000	0.011
Political affiliation dummies: $p-$value	0.002	0.001	1.008
Hausman test [$p-$value]		8.477 [0.999]	408.539 [0.000]
σ	0.188	0.188	0.219
ρ		0.407	0.296
R^2	0.051	0.061	0.099

Linear probability model: dependent variable equals 1 when member is president, zero otherwise (standard errors in parentheses, clustered at Conseil-rural level); 42 Conseils ruraux and Conseil rural presidents, 1,080 representatives from a total of 537 villages; for joint significance tests, excluded ethnic group is "Wolof/Lébou", excluded political party is "PDS" and excluded profession is "peasant".

Table 10: The making of a Conseil rural vice- president

Dependent variable			*Conseil rural* vice-president
Estimator	OLS	*Conseil* rural FE	Village of origin FE
Personal characteristics:	(1)	(2)	(3)
Log age	−0.0039	0.0184	0.0314
	(0.035)	(0.035)	(0.046)
Female	−0.0468	−0.0490	−0.0364
	(0.016)	(0.016)	(0.022)
Educational attainment (excluded category: no schooling):			
Primary education	0.0479	0.0651	0.0221
	(0.025)	(0.028)	(0.046)
Secondary education	0.0719	0.0975	0.0961
	(0.028)	(0.034)	(0.054)
Higher education	−0.0211	−0.0006	−0.0237
	(0.037)	(0.039)	(0.046)
Literate in "national language"	0.0331	0.0568	0.0685
	(0.026)	(0.031)	(0.058)
Koranic schooling	0.0203	0.0239	0.0167
	(0.023)	(0.029)	(0.053)
Ethnicity:			
Member of ethnic majority	0.0260	0.0181	0.0316
	(0.016)	(0.018)	(0.034)
Profession:			
Member of largest professional group	−0.0261	−0.0329	−0.0303
	(0.024)	(0.025)	(0.028)
Politics and political experience:			
Member of majority political party	0.0350	0.0489	0.0522
	(0.012)	(0.013)	(0.023)
Number of terms on *Conseil rural*	0.0237	0.0209	0.0285
	(0.009)	(0.010)	(0.013)
Geographical loyalty:			
Number of members from representative's village	−0.0010	−0.0010	
	(0.002)	(0.002)	
Joint significance of:			
Ethnic group dummies: $p-$value	0.000	0.003	0.000
Profession dummies: $p-$value	0.000	0.000	0.000
Political affiliation dummies: $p-$value	0.006	0.000	0.000
Hausman test		33.54	188.338
[$p-$value]		[0.964]	[0.000]
σ	0.2457	0.1231	0.4239
ρ		0.2463	0.2554
R^2	0.062	0.069	0.060

Linear probability model: dependent variable equals 1 when member is vice-president, zero otherwise (standard errors in parentheses, clustered at Conseil-rural level); 42 Conseils ruraux and Conseil rural presidents, 1,080 representatives from a total of 537 villages; for joint significance tests, excluded ethnic group is "Wolof/Lébou", excluded political party is "PDS" and excluded profession is "peasant".

Table 11: Major political parties by profession

	Political Party				Total
	PDS	PS	AFP	URD	
Profession:					
Peasant	347	95	59	8	509
Trade	70	31	24	6	131
Livestock	30	25	10	41	106
Other	45	11	16	8	80
Public sector employee	35	4	10	0	49
Private sector employee	18	5	3	2	28
Artisan	12	4	3	0	19
None	16	2	2	0	20
Contruction	7	2	0	1	10
Transportation sector	7	2	1	0	10
Fisherman	8	0	0	0	8
Mechanic	5	0	0	0	5
Total	600	181	128	66	975

Table 12: Political affiliation of Conseil rural representatives by ethnic group.

	Ethnic group									Total
	Wolof /Lébou	Pular	Serèr	Manding /Socé	Diola	Soninké /Sarakholé	Mandjag	Balante	Other	
Political affiliation:										
PDS	307	128	75	29	21		2	1	39	602
PS	92	44	17	17	3	1	1		6	181
AFP	64	29	18	7		1			10	129
URD	13	52	1						1	67
LD/MPT	15	6	3	1				1	1	27
Independent	14	1	2		3					20
AJ/PADS	2	2	7	1	4				3	19
ADN	6	3					1		2	12
PIT				3					3	6
CDP/GARAB-GI	4	1								5
APJ/JËF-JËL		4								4
PLS	2					1				3
RND			1							1
PARENA		2								2
PRC	1									1
PH									1	1
Total	520	272	124	58	31	3	4	2	66	1,080

Table 13: Multinomial logit estimations of the determinants of membership in the four big parties (PDS, PS, AFP, URD)

	Multinomial logit					
	PS	AFP	URD	PS	AFP	URD
	raw coeffcient			odds ratio = $\frac{\Omega_{m\|b}(X,x_k+\delta)}{\Omega_{m\|b}(X,x_k)}$		
Personal characteristics:						
Log age	1.201	−0.502	−1.703	3.325	0.605	0.182
	(0.533)	(0.454)	(0.710)			
Female	0.037	0.004	1.105	1.037	0.995	3.019
	(0.330)	(0.355)	(0.351)			
Educational attainment (excluded category: no schooling):						
Prim. educ.	0.444	0.528	−0.392	1.559	1.695	0.675
	(0.284)	(0.378)	(0.916)			
Sec. educ.	0.145	0.353	−1.194	1.156	1.423	0.302
	(0.318)	(0.416)	(0.799)			
Higher educ.	−0.532	0.478	0.268	0.587	1.612	1.308
	(0.622)	(0.641)	(1.125)			
Lit. "natl. lan."	0.552	1.333	0.042	1.737	3.792	1.043
	(0.337)	(0.356)	(0.625)			
Koranic sch.	0.212	1.168	1.059	1.236	3.216	2.885
	(0.255)	(0.330)	(0.404)			
Ethnicity (excluded ethnic group: Wolof/Lébou):						
Pular	−0.120	0.136	1.571	0.886	1.145	4.814
	(0.275)	(0.342)	(0.552)			
Serèr	−0.192	0.234	−0.948	0.824	1.264	0.387
	(0.311)	(0.364)	(1.209)			
Profession (excluded profession: peasant):						
Trade	0.576	0.660	0.815	1.779	1.935	2.261
	(0.331)	(0.325)	(0.479)			
Livestock	1.310	0.771	2.995	3.708	2.162	19.992
	(0.346)	(0.431)	(0.546)			
Other	0.082	0.795	2.035	1.085	2.215	7.654
	(0.408)	(0.365)	(0.661)			
Pub. sec. emp.	−0.464	0.622	−33.752	0.628	1.863	0.000
	(0.483)	(0.435)	(0.722)			
Priv. sec. emp.	0.239	0.079	1.281	1.271	1.082	3.601
	(0.487)	(0.923)	(0.761)			
Artisan	0.444	0.195	−33.934	1.560	1.216	0.000
	(0.594)	(0.730)	(0.785)			
None	−0.598	0.012	−34.367	0.549	1.012	0.000
	(0.700)	(0.881)	(0.824)			
Transp. sec.	−0.047	−0.178	−32.941	0.954	0.836	0.000
	(0.875)	(0.825)	(0.667)			
Construction	0.089	−35.122	2.493	1.093	0.000	12.099
	(0.808)	(0.462)	(1.024)			
Number of observations	979					
Log-likelihood value	−911.973					
LR test $p-$value	0.000					
BIC	−4525.435					
McFadens Adj$-R^2$	0.068					

We use members of the four largest ethnic groups (Wolof/Lébou, Pular, Serèr, Manding/Socé); excluded party is PDS (standard errors in parentheses clustered at village level); 979 representatives from 508 villages in 41 Conseils ruraux.

Table 14: Multinomial logit estimations of the determinants of membership in the four big parties (PDS, PS, AFP, URD), CRs FE

	Multinomial logit *CR* FE					
	PS	AFP	URD	PS	AFP	URD
	raw coeffcient			odds ratio = $\frac{\Omega_{m\|b}(X,x_k+\delta)}{\Omega_{m\|b}(X,x_k)}$		
Personal characteristics:						
Log age	1.365	−0.209	−1.871	3.917	0.811	0.154
	(0.572)	(0.665)	(1.089)			
Female	0.226	0.320	0.934	1.254	1.378	2.547
	(0.410)	(0.541)	(0.991)			
Educational attainment (excluded category: no schooling):						
Prim. educ.	0.475	0.323	0.177	1.609	1.382	1.194
	(0.360)	(0.408)	(0.611)			
Sec. educ.	0.289	0.355	−0.933	1.335	1.426	0.393
	(0.428)	(0.478)	(1.055)			
Higher educ.	−0.726	0.994	0.927	0.483	2.703	2.526
	(0.891)	(0.562)	(1.312)			
Lit. "natl. lan."	0.612	0.647	0.112	1.844	1.910	1.118
	(0.435)	(0.521)	(0.649)			
Koranic sch.	−0.102	0.662	−0.000	0.902	1.939	0.999
	(0.345)	(0.447)	(0.683)			
Ethnicity (excluded ethnic group: Wolof/Lébou):						
Pular	−0.332	−0.584	1.414	0.717	0.557	4.113
	(0.365)	(0.390)	(0.724)			
Serèr	−0.140	0.156	−0.399	0.868	1.169	0.670
	(0.588)	(0.642)	(1.073)			
Profession (excluded profession: peasant):						
Trade	−0.205	−0.423	−0.056	0.813	0.654	0.945
	(0.389)	(0.404)	(1.105)			
Livestock	0.688	1.319	1.207	1.991	3.742	3.346
	(0.549)	(0.527)	(0.949)			
Other	0.290	0.904	0.575	1.337	2.471	1.777
	(0.524)	(0.514)	(1.074)			
Pub. sec. emp.	−0.162	1.246	−39.513	0.849	3.478	0.000
	(0.793)	(0.491)	(0.711)			
Priv. sec. emp.	0.631	0.256	0.675	1.880	1.292	1.964
	(0.785)	(0.824)	(0.997)			
Artisan	0.382	−0.669	−38.970	1.465	0.512	0.000
	(0.662)	(0.788)	(0.864)			
None	0.147	−0.596	−32.525	1.159	0.550	0.000
	(0.802)	(0.650)	(1.906)			
Transp. sec.	0.385	0.359	−41.064	1.469	1.432	0.000
	(0.833)	(1.152)	(0.701)			
Construction	−0.495	−41.861	0.931	0.609	0.000	2.537
	(1.055)	(0.744)	(1.077)			
Number of observations	979					
Log-likelihood value	−577.631					
LR test $p-$value	0.000					
BIC	−4760.268					
McFadens Adj$-R^2$	0.329					

We use members of the four largest ethnic groups (Wolof/Lébou, Pular, Serèr, Manding/Socé); excluded party is PDS (standard errors in parentheses clustered at village level); 979 representatives from 508 villages in 41 Conseils ruraux.

Table 15: Multinomial logit estimations of the determinants of membership in the four big parties (PDS, PS, AFP, URD), Village FE

	Multinomial logit village FE					
	PS	AFP	URD	PS	AFP	URD
	raw coeffcient			odds ratio = $\frac{\Omega_{m\|b}(X,x_k+\delta)}{\Omega_{m\|b}(X,x_k)}$		
Personal characteristics:						
Log age	1.528	0.352	−0.203	4.612	1.422	0.816
	(0.925)	(1.378)	(1.990)			
Female	0.292	−0.454	5.554	1.340	0.634	258.435
	(0.617)	(0.945)	(1.519)			
Educational attainment (excluded category: no schooling):						
Prim. educ.	0.469	0.298	0.453	1.599	1.347	1.574
	(0.684)	(0.782)	(1.539)			
Sec. educ.	−0.173	0.043	−2.068	0.840	1.044	0.126
	(0.915)	(1.081)	(1.507)			
Higher educ.	0.272	1.632	10.725	1.313	5.116	4.55
	(1.337)	(1.104)	(2.746)			
Lit. "natl. lan."	−0.306	1.427	−1.151	0.736	4.167	0.316
	(0.819)	(0.975)	(1.723)			
Koranic sch.	0.185	1.666	−1.723	1.203	5.292	0.178
	(0.793)	(1.150)	(1.701)			
Ethnicity (excluded ethnic group: Wolof/Lébou):						
Pular	−0.961	−2.182	0.818	0.382	0.112	2.266
	(0.667)	(0.868)	(1.748)			
Serèr	−2.276	−2.231	−5.343	0.102	0.107	0.004
	(2.590)	(2.524)	(3.283)			
Profession (excluded profession: peasant):						
Trade	−0.482	−0.453	−0.533	0.617	0.635	0.586
	(0.787)	(0.816)	(2.517)			
Livestock	−0.228	2.392	4.532	0.795	10.938	92.984
	(1.472)	(1.482)	(1.638)			
Other	1.178	2.635	5.779	3.251	13.956	323.590
	(1.167)	(1.072)	(1.559)			
Pub. sec. emp.	0.878	1.863	−32.370	2.406	6.445	0.000
	(1.133)	(0.761)	(1.557)			
Priv. sec. emp.	0.904	0.665	−0.059	2.469	1.946	0.941
	(0.956)	(1.069)	(1.602)			
Artisan	2.238	−0.145	5.537	9.382	0.864	254.160
	(2.160)	(2.405)	(2.973)			
None	−0.909	0.673	1.977	0.402	1.962	7.223
	(1.170)	(0.674)	(2.296)			
Transp. sec.	2.481	−3.010	−30.293	11.956	0.049	0.000
	(1.275)	(1.406)	(1.745)			
Construction	−4.200	−39.607	−5.523	0.015	0.000	0.004
	(1.240)	(1.551)	(2.656)			
Number of observations	979					
Log-likelihood value	−288.299					
LR test $p-$value	0.000					
BIC	−5338.932					
McFadens Adj$-R^2$	0.607					

We use members of the four largest ethnic groups (Wolof/Lébou, Pular, Serèr, Manding/Socé); excluded party is PDS (standard errors in parentheses clustered at village level); 979 representatives from 508 villages in 41 Conseils ruraux.

Table 16: The making of a CCG commission president

Dependent variable	Representative is *CCG* commission president			
Estimator	*CCG* FE	Village of origin FE	*CCG* FE	Village of origin FE
Personal characteristics:				
Log age	0.023 (0.035)	0.060 (0.059)	0.022 (0.035)	0.059 (0.057)
Female	−0.019 (0.027)	−0.037 (0.041)	−0.018 (0.027)	−0.038 (0.041)
Educational attainment (excluded category: no schooling):				
Primary education	0.050 (0.028)	0.077 (0.046)	0.050 (0.028)	0.077 (0.046)
Secondary education	0.090 (0.031)	0.077 (0.048)	0.093 (0.030)	0.077 (0.048)
Higher education	0.095 (0.044)	0.123 (0.070)	0.105 (0.044)	0.123 (0.070)
Literate in "national language"	0.018 (0.029)	0.045 (0.053)	0.019 (0.029)	0.044 (0.053)
Koranic schooling	0.000 (0.032)	0.057 (0.057)	0.002 (0.032)	0.057 (0.057)
Ethnicity:				
Penrose index of ethnic group	0.010 (0.030)	−0.042 (0.064)		
Shapley-Shubik index of ethnic group			0.008 (0.030)	−0.036 (0.063)
Profession:				
Penrose index of profession	0.029 (0.032)	0.069 (0.054)		
Shapley-Shubik index of profession			0.031 (0.033)	0.071 (0.055)
Politics:				
Penrose index of political party	−0.003 (0.057)	−0.089 (0.095)		
Shapley-Shubik index of political party			0.003 (0.058)	−0.070 (0.096)
Geographical loyalty:				
Penrose index of village	−0.049 (0.035)			
Shapley-Shubik index of village			−0.096 (0.038)	
Alignment with president's characteristics:				
Same village	0.106 (0.032)		0.121 (0.030)	
Same ethnic group	−0.025 (0.029)	−0.054 (0.060)	−0.026 (0.029)	−0.056 (0.059)
Same political party	0.006 (0.045)	0.069 (0.075)	0.000 (0.045)	0.055 (0.074)
Same profession	−0.059 (0.024)	−0.063 (0.038)	−0.061 (0.024)	−0.062 (0.038)
Joint significance of:				
Ethnic group dummies: $p-$value	0.342	0.236	0.334	0.252
Profession dummies: $p-$value	0.725	0.715	0.794	0.697
Political affiliation dummies: $p-$value	0.366	0.279	0.479	0.150
σ	0.199	0.218	0.199	0.218
ρ	0.254	0.353	0.253	0.354
R^2	0.104	0.121	0.104	0.120

Linear probability model: dependent variable equals 1 when member is vice-president of CCG, zero otherwise (standard errors in parentheses); 30 CCGs (and CCG vice-presidents) and 697 representatives from a total of 314 villages; for joint significance tests, excluded ethnic group is "Wolof/Lébou", excluded political party is "PDS" and excluded profession is "peasant".