The theory of fiscal federalism provides several reasons to expect better public service delivery if government is decentralized. Demand for public services is expected to vary across jurisdictions, and local government officials are expected to match supply of public services with demand more effectively than if public services were centrally provided. Households are expected to have higher participation rates in elections and to vote for better reasons (the candidates’ experience, agenda or political affiliation, rather than bribery or the candidates’ race, religion etc.) at the local level, and to have better access to information about local affairs than about national politics. Finally, mobility across jurisdictions is expected to induce local governments to be more efficient. We review the decentralization process in Uganda and provide evidence on all these mechanisms. There turns out to be little support for the relevance of these hypotheses to Uganda.

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1. Introduction

The recent wave of democratic reform has brought in its wake the devolution of power from central to local governments across the world. Brazil, Chile, Mexico, Spain, the Philippines, India and Uganda are but a few examples from a long list of countries that have decentralized government power in the 1990s. The rationales for decentralization are, in fact, not altogether different from those for democratization. The two principal arguments for democratization are that it empowers people and is therefore good in its own right, and that the political discipline imposed by elections and other forms of political action leads to better governance. Similarly, decentralization is sometimes advocated on the grounds that it empowers sub-national communities and is therefore good on principle, and that the political disciplines on governments work more effectively at the local level. Whether political disciplines are actually more effective at the local level in Uganda is the subject of this paper.

Uganda experienced a tumultuous post-independence period, with power passing first to Milton Obote, then to Idi Amin, back to Obote and eventually to Yoweri Museveni and his National Resistance Movement (NRM). Idi Amin’s regime, among its other excesses, savaged the social sector by forcing the migration of many Asian doctors, pharmacists and teachers. Since Museveni’s takeover in 1986, Uganda has been something of a regional success in terms of stability and economic growth, but social indicators have shown lackluster performance.\(^1\) There is now, however, hope that the latter might improve with the devolution of health and education provision to the local level.

The theory of fiscal federalism and related arguments for decentralization suggest several reasons, or “federalist disciplines”, to expect this devolution of authority to lead to significant improvements in the delivery of health and education. But there are also theoretical reasons to be cautious about decentralization. These arguments relate to both productive and allocative efficiency. The productive efficiency argument states that local governments would produce the same goods at lower costs than the central government. The allocative efficiency argument, perhaps a more important argument for local

\(^1\) An exception may be combating HIV/AIDS where Uganda is a rare African success story.
government, states that local governments are likely to be better able to match goods to preferences.\(^2\)

For these arguments to be valid, several conditions must be met. First, power must *de facto* be devolved to the local level. Whether this is in fact the case is examined in section 3.

Secondly, demand for important public services must be diverse across jurisdictions, and if it is, citizens know which public services are in their best interest: it follows from this assumption that local governments best serve the public interest when they are responsive to households’ demands. (This is analogous to the way in which the assumption of consumer sovereignty underlies the neo-classical theories of market efficiency and welfare economics.) For example, in Uganda there is little demand for immunization (perhaps due to low education levels), despite the fact that it is likely to be cost-effective. The low level of demand for immunization might undermine the argument that improved allocative efficiency results from decentralization. In fact it may also undermine productive efficiency because citizens might not exert political pressure to improve the delivery of goods they do not demand. Section 4 addresses each of these concerns.

Thirdly, local officials must be aware of which services citizens demand, and they must actually provide funds for those services. Section 4 presents analysis of the responses to questions asked to households about their preferences, and to district and sub-county officials about their perceptions of household preferences, and about the amount of funding supplied to each of the services mentioned by households.

Finally, and perhaps most importantly, the validity of both of these arguments in practice depends on the type and extent of political disciplines being exercised on both the local and national government. It is argued that “local governments are closer to the people” than is the national government—i.e., citizens can more easily learn about the actions of local governments and are better able to respond to them by voting or other forms of political action, resulting in local governments being more responsive to the concerns of citizens than the national government. This argument has two important dimensions: first, citizens will be better informed about local government actions if the

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\(^2\) See, e.g., Oates’ classic work *Fiscal Federalism* (1972).
media, which is perhaps a relatively neutral, third-party source of information, provides citizens with news about these actions. Section 6 examines whether citizens use the media to learn about local government, or whether community leaders self-report on their actions. Secondly, citizens must use their knowledge about their government to penalize officials who do not respond to citizen concerns by voting against them or participating in other political action. Section 5 looks at this dimension of the argument. Theory suggests that if only one of these factors is inoperative on the local level—if either voter turnout and political action are weak or information available to citizens is poor—the expected political discipline will not be exerted.

Juxtaposed to hypotheses about the positive effects of federalist disciplines are concerns about elite capture of local governments. This notion, analyzed notably by Bardhan and Mookherjee (1998), is related to the possibility that elite individuals or groups will find means of dominating local politics, and therefore the rents that may be associated with access to government. In such situations, local citizens may be better off under the control of the national government, where there may be greater political competition and better information flows between government and citizens. Section 6 presents evidence on this alternate possibility.

Another important presumptive source for improved productive and (especially) allocative efficiency is mobility, which is addressed in Section 7. The Tiebout (1956) argument for local government states that people can move to the jurisdictions which supply the mix of public goods they prefer, resulting in a first-order effect on improving allocative efficiency. Additionally, if local governments are reluctant to lose their citizens, or desire to attract citizens from elsewhere, then mobility may exert discipline on local government. This may generate more productive efficiency at the local level than at the undisciplined national level (Tiebout, Inman and Rubinfeld 1996b, Oates and Schwab 1988). This argument, which has been stated with careful qualifications by these authors, may not apply to the mobility of citizens in Uganda or other developing countries, where citizens may well represent a more important drain on expenditures than a source of revenue. Local governments may thus not be too keen on immigration or
averse to emigration. And even if local governments were responsive to migration, citizens may simply not be mobile enough for migration to exert an important discipline on local governments.\textsuperscript{4}

It is important to acknowledge what this paper does not do. It does not provide an impact analysis of decentralization. Such a study would probably require a cross-country dynamic data set, with dates of decentralization, and before and after data on outcome variables. Even if such a data set were available, identifying the impact of decentralization would be a challenging econometric problem because the effects of decentralization may not be immediately apparent- and if long time lags are allowed, other policy changes would interfere with a clear demonstration. Identifying the impact of decentralization may be especially problematic because decentralization programs are often a part of a broader reform strategy. The approach taken here is rather to examine whether there is evidence of the presumptive reasons for expecting better local provision of public goods.

The paper proceeds as follows. The data is described in Section 2. The legal and administrative framework of decentralized government in Uganda is described in Section 3. As described above, sections 4 through 8 address whether the conditions that must be met in order for the common arguments in favor of decentralization to be valid are in fact met. Section 4 provides an assessment of whether there are in fact significant differences across sub-national units with respect to the demand for public service delivery, and whether local officials are aware of—and whether their actions reflect—such differences. Section 5 presents evidence on voting patterns and political action at the local and national levels. Evidence on the use of media and other sources of information on politics is examined in Section 6. Section 7 focuses on the issue of mobility of citizens. In Section 8, we go beyond looking at whether or not the prerequisites for the theoretical arguments are met, and attempt to analyze the impact of the various political disciplines on socio-economic outcomes. Conclusions are summarized in Section 9.

\textsuperscript{3} Four articles in the Journal of Economic Perspectives issue of Fall 1997 contain an excellent discussion of the Tiebout hypothesis and its empirical relevance (Inman and Rubinfeld, Donahue, Musgrave, Qian and Weingast).

\textsuperscript{4} Other arguments have recently been cited for decentralization, e.g., Weingast’s (1995) theory of market-preserving federalism, but it does not seem to be too relevant to the delivery of health and education in
2. Data

To examine the extent of Uganda’s devolution, the sources of political disciplines on local government and the consequences of these political disciplines, surveys of eight different groups were undertaken: households, district health officials, district education officials, sub-county health officials, sub-county education officials/chiefs, health facilities, and primary school principals. A test of primary school pupils was also administered. The surveys were conducted in Spring 2000.

Data were collected from 75 sub-counties, chosen randomly from 10 quasi-randomly selected districts. In each sub-county 15 households were chosen from 4 randomly selected villages. Either a primary school principal or a health facility worker was interviewed in each of these villages, thereby allowing facilities and schools to be matched to households. In each sub-county, the survey team tried to survey the sub-county chief and the education officer with the education instrument, and the health inspector and sub-county health chief with the health instrument. If any of these officers was not available, the survey team tried to interview another person at the relevant office. Two health and two education officers were also interviewed in each district. The topics covered in the surveys and the number of observations are shown in Table 1. There were some missing observations in most of these surveys.

The primary instrument was the household survey, and many of the results are derived from this survey. The survey covers basic demographic information, information on health knowledge and usage (with a focus on immunization and malaria control), primary education, preferences, voting patterns, political action, media exposure and mobility.

The public official surveys also asked questions about their knowledge of citizen’s preferences, and numerous questions about public sector management—hiring, firing, promotions, performance evaluations, funding, purchases, etc.—which are presented in Azfar et al. (2001).

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Uganda. In any event, available data does not permit assessment of the relevance of this interesting theory to Uganda.

5 Some districts were taken out of the data pool before the sample was randomly selected, because they could not be surveyed for safety reasons. Thus our sample might be biased towards better run districts with more exacting political disciplines. Since most of our results are negative, it is possible they would be even stronger if we had data on a random sample of districts.
3. Structure of Decentralization in Uganda (as of Fall 2000)\textsuperscript{6}

3.1 The Gradual Devolution of Responsibilities.

President Museveni’s NRM government has been devolving power by stages to local governments for several years (see Box 1). Local “Resistance Councils” were created in 1988 by NRM government. In 1993 the government decentralized many of its functions to the district level. The 1995 Constitution provides a general framework for decentralization. It provides for District Councils to be elected every four years, and for an executive (District Chair) who is directly elected and a member of the Council.

The 1997 Local Governments Act spells out the constitutional framework in more detail. There are five levels of local government: village, parish, sub-county, county and district. Of these, only the district and sub-county levels have both political authority and significant resources—hence, the 45 districts and the 800 sub-counties are the focus of this research. Local governments are said to have “autonomy,” i.e., legislative and executive authority within their listed areas of jurisdiction. The District Council list includes primary and secondary education, a range of primary health services (including certain hospitals and health centers, maternal-child health, communicable disease and vector control, and health education), and basic services in the areas of water provision, roads, planning, and licensing. A number of the listed areas, including primary education, community-based health services, hygiene, and low-level health units, are to be devolved by the district to lower-level councils.

Two (potentially) important checks are provided between levels in the governmental hierarchy: first, lower-level enactments must be forwarded for constitutional review to higher levels, and second, lower level governments are charged with monitoring the performance of higher-level public officials working in their areas, as well as the provision of services and implementation of projects by higher-level governments. The law also defines exacting standards and procedural requirements for

\textsuperscript{6} This section was written soon after the data were collected in Summer 2000 and has been minimally revised since.
the convening of ministerial commissions of inquiry and for the takeover of local administrations by the President.

The division of powers under the Local Governments Act is not crystal clear. The district and sub-county levels each have a popularly elected Chair, designated as the “political head” of the relevant jurisdiction. Each Chair governs in cooperation with an Executive Committee made up of Council members, which initiates local policies for Council approval and oversees policy implementation. Each district and sub-county also has an administrative Chief who monitors local (and lower) government department activities and delivery of services. The Chiefs are appointed by the District Service Commission (the civil service body for the district) and report to their Local Councils. Additionally, the President appoints Resident District Commissioners (RDCs) to represent central government interests, monitor governmental activities, and provide advice to each district. The RDC must be a “Senior Civil Servant,” and her/his duties also include invoking central oversight agencies where investigations appear needed. The balance of power between the District Chair and the RDC is especially unclear on paper, and could create conflict.

**Box 1: Uganda’s Decentralization Timeline**

- 1986: The NRM takes power, with a commitment to decentralization
- 1993: The Decentralization Act formalizes the Resistance Councils, and makes primary health and education the responsibility of the districts.
- 1993-7: Phased decentralization of recurrent budgets. In 1993, the initial 13 districts start a two-phase decentralization (votes, then block grants are transferred to district recurrent budgets). In the 1996/7 fiscal year, the process is complete for all districts.
- 1997: The new structure is spelled out the Local Governments Act (LGA), along with transfer formulae, and the districts become the employers of local civil servants
- 1997: Introduction of the Universal Primary Education (UPE) program.

3.2. Local Resources and Administration

Behind the Ugandan decentralization program lay an expectation that the reform would help improve accountability by moving resources and responsibilities to local governments more amenable to public monitoring and control. This, of course, depends
on specific financial management and oversight arrangements as well as the general structure of decentralized government. In the past, central ministries essentially decided on funding allocations for district-level services, and the Ministry of Finance, Planning and Economic Development (MFPED) routed funds through the relevant line ministries. Now, the districts are given budget ceilings within which to operate and the MFPED directly transmits grant funds to district administrators, thus removing one link in the chain (Lubanga 1998). However, the bulk of funds are allocated to the district in the form of conditional grants.

Local government revenue sources are defined in the law to include the graduated (head) tax, property tax, and a list of licenses and fees. The two most important sources of revenue are the graduated tax and grants from the central government. Local governments have some discretion in setting tax rates. Local governments may adopt additional taxes, but only with the approval of the Ministry of Local Government. This essentially limits local governments to minor variations from the list, since the law provides no standard by which the Minister approves or disapproves of proposed new revenue sources. The sub-county level acts as the primary local tax collector, remitting 35% of collections to the district level (50% in urban areas), and passing on smaller shares to lower-level governments. District governments are supposed to distribute 30% of revenues raised in the district to lower levels of government according to a formula based on child mortality, the number of school-age children, population and area. The central government gives three main kinds of grants to local governments: unconditional grants, conditional grants and equalization grants—the last directed to those localities lagging behind in some kind of public service provision. These policies raise the concerns of Persson and Tabellini (1996) about risk-sharing versus incentives facing local governments. Indeed, some authors have raised concerns about the perverse incentives created by these equalization grants, and the child mortality component of the grants given by the district governments (Hutchinson 1999). In contrast to the equalization grants, some districts have apparently designed schemes to reward sub-national units for good performance (Meagher 2000).

The law envisions the enactment of local budgets by the Councils, within the constraints of a balanced budget requirement and grant conditions. Public sector
expenditure planning and budgeting for local governments in Uganda is “bottom-up.” The planning process requires districts to prioritize funding needs within a ceiling imposed by center. Between the district and sub-county levels, planning and budgeting decisions are, in theory, to be driven by the sub-county as the relevant political and fiscal unit supporting local public services. Planning units at the district level are to assist the Sub-counties in devising their plans. In fact, the way in which sub-county planning is handled varies from district to district. Some convene a joint district-sub-county workshop, some districts just develop the sub-county plans, some sub-counties make their own plans and send them to the district, and in other cases the district will assist or second technical staff to help the sub-counties do their planning. One of the most important factors here appears to be capacity, which is quite disparate and has an important influence on the amount of input or control exercised by the sub-counties. Moreover, the process of consultation envisioned here is considered by some as too time-consuming. As a result, in many cases, data are simply sent up from the sub-counties, and the districts make decisions unilaterally on that basis. For lower-level planning and budgeting, sub-counties have arrived at a range of consultation arrangements, including regular weekly meetings with parish council members.

NGOs are substantially involved in service delivery. Some view NGOs as “problematic” in this field, usurping public sector functions, taking the lion’s share of donor funds, avoiding interaction with government, and keeping their budgets and agendas hidden. This may be a valid concern, but less so than a few years ago. NGOs officially receive conditional grants directly from the center (via the district), and sometimes participate in planning with the districts. NGO contributions to public services are now expected to be included in local government budgets under Uganda’s decentralization policy. However, the districts have a strong countervailing incentive not to disclose information on NGO contributions or donor funds, fearing that this will lead to cuts in block grants.

It is frequently observed that local governments, from the district level downward, have little overall flexibility in the use of funds. International donor-funded programs also help create strong top-down influence on funding allocations. Other standards also tie the hands of local governments, but are probably not as well monitored—these include
the LGA requirement that local council allowances not exceed 15% of the previous year’s revenue. Additionally, conditional grant terms contain not only affirmative duties but also lists of things that the grants cannot be used for, and conditional grant reporting requirements are said to be onerous. These rigidities are reported to encourage some undesirable outcomes such as over investment in facility buildings and informed accommodation of needs identified by district officials.

Another problem area, related but not wholly due to budgeting processes, is delay in local governments’ receipt of grant funds. Some observers attribute this to incomplete banking system coverage, slow check-clearing, and general inefficiency in the financial system. Others suggest that the problem lies not with central government fund releases, but with donor funds and releases by the districts to lower levels. Under Uganda’s system of cash budgeting, if a district does not receive a grant by the end of its fiscal year, the funds are lost (Barnes 1999). Since development budgets have begun to be devolved, affected districts (e.g. Mukono) say that public funding is becoming more stable and reliable. But, as of January 2000, the center still handled over 70% of the development budget for local (district and below) activities (Kiyaga-Nsubuga 2000).

Local government resource management and accountability is essentially a matter of personnel. The external resource constraints that apply here make it difficult for LGUs to manage anything other than people and their salaries. The payroll accounts for the lion’s share of public finance at all levels in Uganda. Civil service reform reduced public sector staff overall from 320,000 in 1992 to below 140,000 by the end of 1994 (Kisubi 1998). This number rebounded to 170,000 in 1999 (Kiyaga-Nsubuga 2000). Thus the perception has become widespread in Uganda that decentralization raises the overall public sector wage bill, due to inevitable overlap at different levels of government. At the same time, the districts’ hands are tied (as discussed above) by grant conditions, centrally-determined program priorities, and severe constraints on their authority to fire devolved personnel or reduce their salaries. Many districts try to escape this bind by passing on personnel costs to the sub-counties, whether the latter have the necessary resources or not. As a result, some staff are paid by the districts, and some by the sub-counties.
When a local government does bear the full cost of a public employee, it acquires a strong motivation to use this fact for political advantage. This, combined with turnover and new positions, has fostered at least the perception of public employment discrimination, known as the “sons of the soil” phenomenon. Local politicians have two sources of cover for favoritism in recruitment: first, the constitutional requirement that local government staff should be living in the districts where they serve; and second, the fact that the District Service Commissions (DSCs), which should monitor civil service practices independently of the local councils, seem rarely to do so in practice. Civil service problems of this kind could be addressed in part through effective use of performance standards.

3.3. Central Government Oversight

In this section we look into the constraints imposed on local governments by intergovernmental relations—i.e., with regard to central government oversight, fiscal authority, and planning and budgeting arrangements.

Most procedural changes brought about by decentralization are aimed at disciplining the local rather than central government. For example, under the LGA, districts must secure approval of their budgets by the District Council and publish their budgets, and LGU internal auditors are required to report directly to their Councils, bypassing the administration. (Also, see Box 2). In addition, the principal oversight bodies at the national level—the Inspector General of Government (IGG), the Treasury Inspectorate, the Auditor General, the Attorney General, and the Public Accounts Committee of Parliament—have direct jurisdiction over LGUs. Most of these agencies have a regional presence and can accept complaints in the first instance. The main development program financed with budgetary savings from international debt relief, the Poverty Action Fund (PAF), has since 1998/9 provided monitoring funds to strengthen the role of some of these agencies in the oversight of local projects and services funded by PAF. Fund releases are also to be advertised in the press, and in the case of primary education, posted at the schools.
The Local Government Financial and Accounting Regulations (1998) spell out a set of tightened accountability rules, such as:

- Taxpayers must receive receipts (“tickets”) for tax payments (art. 28).
- The Chief Administrative Officer (CAO) and Chief Financial Officer (CFO) are liable for any contract over-expenditures (art. 83).
- The MOLG has the power to intervene in case of any irregularity in a tender, or of any financial mismanagement (arts. 86, 152).
- The local Executive Committee can levy sanctions on any official, including a Council member, who approves excess or unauthorized expenditures (art. 169).
- Monthly distributions of sub-county revenue to parishes and villages are defined in formulae (art. 183).
- Local Tender Boards (LTBs) must be used for procurements above an amount fixed yearly by the MOLG (currently Ush 500,000 or above for goods, 1 million or above for services). Public school procurements are not required to use the LTB.

Uganda is decentralizing while its government retains a unitary structure. This means that the initiatives of local populations to pressure their governments operate within an institutional structure defined by the center. The central government also continues to exercise hierarchical discipline over the sub-national governments. This discipline has two primary formal channels: the Resident District Commissioners (RDCs) and the national oversight agencies. Both of these channels are limited, legally, by the language in the LGA enabling the center to deal directly with districts, but shielding lower-level jurisdictions and bringing them under direct oversight by the districts. However, these formal relations are unlikely to be the whole story. The more important source of hierarchical pressure is probably political, and this is at least as likely to take place informally within the Movement structure as it is through the formal channels.

As for the RDC, this official exercises formal duties of monitoring, coordination, and advice with respect to LGUs. In the circumstances, this may take on the aspect of directing and overruling (as well as political indoctrination and control) in those areas of Uganda with the lowest levels of political mobilization and media exposure. This has led some to question whether the RDC, the District Chair, or the Executive Committee is really “in charge” at district level. The Local Governments Act spells out dispute-resolution processes to be used in cases of conflict of authority, but these apparently have been little used (Kiyaga-Nsubuga 2000).
The fact that the key oversight agencies—the IGG, the Auditor General, the Public Service Commission, and the Attorney General—have direct jurisdiction over the districts may help to control corruption. Each agency has a regional presence and can accept complaints in the first instance. Some are also receiving “monitoring” funds from the Poverty Action Fund. Still, accounts of corruption affecting local health and education services are numerous, and there are significant weaknesses in the oversight process (see Box 3).

**Box 3: Weaknesses in Uganda’s Oversight of LGUs**

Apart from the incentives driving the diversion or theft of resources, weaknesses in oversight and control systems seem to account for many of the failures of discipline experienced in Uganda. The front-line internal auditors, at the district level, appear to have neither the skills nor the resources to audit the accounts of all the hundreds of schools for which they are responsible. The national agencies charged with external public sector oversight—primarily the IGG and the Public Accounts Committee—have a still more daunting task checking abuse in public services across the country. Last, the district Chief Administrative Officers (CAOs) are appointed by the District Service Commissions (DSCs) and in turn appoint their own Chief Financial Officers. Decentralization has brought numerous inexperienced CAOs into district governments. Constraints on the DSCs’ factual independence, reported by some observers, likely carry over into the CAOS’ performance of their functions. The wide discretion allowed in central oversight and discipline of LGUs seems to place little constraint on the influence of personal interest or politics here.

Moreover, some observers have said that, in practice, hierarchical discipline in the system is *ad hoc*. National officials report that no one in fact is formally designated as the local counterpart responsible for dealing with central government concerns. When a local government under performs in a key sector (e.g. health), overspends its budget, runs over on a contract, or makes an invalid funding reallocation, the disciplinary responses available are numerous. They include: interdiction (suspension) or dismissal of the responsible bureaucrat; investigation by the relevant sectoral committee of the District Council; intervention by the RDC; an MOLG commission of inquiry (to advise the President on his course of action); a parliamentary delay or refusal of a vote on account; or investigation by the IGG, Auditor General, Public Service Commission, or Attorney General. Despite this, the perception appears widespread that the center does not back up its policies with sanctions. The biggest “stick” held by the central government, the President’s power to dissolve district governments has yet never been used as of fall 2000.

The center also appears to avoid any attempt to restrict district funding as a disciplinary measure—for political reasons. In fact, the usual response in the case of bad sectoral indicators appears to be actually increasing the central grant to the district in order to help it deal with the problem. However, the districts themselves appear to have been less shy. The initial pilot districts who were given authority over their development budgets have instituted semi-annual evaluations of sub-counties and parishes. Those that perform well receive a 20% budget increase, while those faring badly suffer a 20% cut.
3.4 Devolution of the Social Sectors

Many responsibilities within health and education were devolved to local governments. Part 2 of Schedule 2 of the Local Governments Act reads

Functions for which district councils are responsible subject to Article 176 of the constitution and sections 97 and 98 include but are not limited to

1. Education services
2. Medical and health services including
   A: hospitals, other than hospitals providing referral and medical training
   B: health centers, dispensaries, sub-dispensaries and first aid posts
   C: maternity and child welfare services
   D: the control of communicable diseases, including HIV/AIDS, leprosy and tuberculosis
   E: control of the spread of disease in the district
   F: rural ambulance services
   G: primary health care services
   H: vector control
   I: environmental sanitation
   J: health education

Health specialists often express alarm at the likely impact of decentralization on health services. They point out that successful decentralization of health services can be expected to take 5 to 10 years, and requires reorganization of the Ministry of Health (MOH). There appear to be two flaws in the design of decentralization as it affects health services.

First, health units in Uganda have little incentive to manage costs effectively or to respond to local demands. Many important decisions remain under central control, and those that have been devolved to the district do not filter down, thus creating an “inefficient centralized system within each district” (Hutchinson 1999: p 75). Salaries and staffing decisions come from the district, drugs are mainly sent from the center, and hospital funding has been based on the existing number of beds. The conditional grants for health, as in other areas, are designed to reduce local flexibility over the use of funds—they contain recommended staffing patterns, negative lists for procurement, etc. Moreover, both national and local politicians tend to support the building of new health
units to increase their influence locally, but without considering recurrent costs. As for local governance, the health committees, envisioned under the LGA as a means of mobilizing local participation in health management, appear to operate (where they do) under no binding constraints as to the timetable of meetings or openness to the general public. Thus, by design, local governance does not seem to have a defining role in health care.

Second, the expansion of local power into certain areas of health care that have spillover effects is bound to create anomalies. Decentralization by definition potentially endangers vertical programs. It requires new systems at the district level that did not exist before, and it inevitably confronts contrary preferences and incentives of local governments, which may have other priorities. Immunization programs are the responsibility of the central government, but the districts exercise control over supplies and cold chain maintenance. In the case of malaria control, on the one hand, the Ministry of Health (MOH) contributes by setting standards and guidelines, technical support and supervision, training, supporting epidemic control, and monitoring. At the same time, however, local fiscal contributions, and to a lesser extent conditional grants for primary health care, are subject to being diverted toward competing local health care priorities.

Decentralization has been accompanied by a number of steps aimed at combating corruption and inefficiency in the health sector. Whereas vaccines and essential drug kits were formerly distributed to the districts based on local returns, now the MOH collects data and projects these needs, allocating supplies accordingly. Also, Uganda’s Health Management Information System has been put in place to collect and manage data on health system inputs, needs, and outcomes. These approaches help to dilute pre-existing strong incentives to overreport both input needs and outputs such as immunization coverage. To increase transparency, health unit fees (but not budgets) are required to be posted, and overcharging has often led clients to complain to the local health committees. Some local health committees have taken the further step of opening the drug kits sent to the districts and comparing quantities to official records. Facility inspections by district and sub-district-level health staff also provide a safeguard, but even the wealthiest LGUs do not appear to have the means to ensure regular inspection of all facilities.
Decentralization appears to pose fewer dangers in the primary education field than in public health. This is perhaps due to the fact that this service offers a much more limited array of expenditure choices to local governments than health, and perhaps also to the tradition of PTA involvement in educational governance. Divergent spending priorities in education usually involve conflicts between the needs of teacher payrolls and those of school buildings. The curriculum and most of the funding for primary education in Uganda flow from the center. The most important funding source for primary education in Uganda is the Universal Primary Education (UPE) program of grants funded through a combination of debt-relief (PAF) funds, national revenues, and donor funding. These grants include capitation grants (per student, up to four per family), classroom construction funds (based on enrollment levels), teacher salary grants based on a periodically fixed pupil-teacher ratio, and in-kind grants of materials such as tin roofing and cement (but the such grants are being phased out).

Despite the allocation of such resources, teacher pay is a problem. The districts recruit teachers and pay them with conditional grant funds according to uniform pay scales approved by the Ministry of Education (MOE). Teacher pay has been increased since UPE (to cope with the loss of phased-out PTA contributions, which in large part went to teachers). According to the MOE, the districts still needed to recruit 21,000 more teachers as of early 2000. Some districts report that teacher salaries cover only a fraction of living costs, Additional, payroll problems have resulted in some teachers working as long as two years without pay.

The School Management Committee, which is distinct from but often associated (or overlapping) with the PTA, now appears to be the most important governance mechanism dealing with education locally. These committees are empowered to sign checks for the headmaster, oversee the schools, and investigate problems—their powers are spelled out in the Education Act. The committees also oversee school construction and improvements, under regulations and PAF guidelines that exempt primary school-building from local tender board requirements. This is important for two reasons: first, good facilities encourage students to attend school more regularly and for longer, thus helping improve performance; and second, because this function presents the committees with potential opportunities for overreaching (Uganda Debt Network 1999).
3.5 Can Local Officials Adjust Services to Reflect Demand?

Our analysis continues with an empirical examination of the *de facto* discretion and flexibility that local governments enjoy in delivering public services.

In all four surveys of public officials, they were asked:

In general how easily can you adjust in this district (sub-county) the provision of health (education) services to respond to the suggestions of local people?

Respondents could answer: cannot adjust; can adjust with great difficulty; can adjust with some difficulty; can adjust easily. Table 2 shows the distribution of answers to these questions by the various public officials. The modal response was clearly “can adjust with some difficulty.” On the basis of these results, an adjustability index was created:

\[
\text{Adjustability Index} = \frac{(\text{Can adjust w. great diff.} + 2 \times \text{Can adjust w. some diff.} + 3 \times \text{Can adjust easily})}{3}
\]

The index is thus equal to 0 if the official responded “cannot adjust”, equal to 1/3 if the official responded “with great difficulty,” equal to 2/3 if the official responded “with some difficulty,” and equal to 1 if the official responded “easily.” There is an element of arbitrariness in constructing any such index from ordinal answers, but this seemed like the least controversial way to do so. This index, whose mean can take values between 0 and 1, showed adjustability at 0.56 for the sub-county health office, at 0.59 for the sub-county education/chiefs office, at 0.68 for the district health office and 0.63 for the district education office (Table 2).

Next, similar adjustability indexes were created for several specific functions: hiring, salaries, purchases, raising revenues and resource allocation. For most of these functions local governments reported some flexibility and the averages for the four levels of local government were between 0.3 and 0.5 (see Azfar et al. 2001 for a tabulation).

For health there were several comparable questions on hiring officials, hiring workers, deciding what type of health service to provide, how to combat malaria, and
how much money to allocate to immunization. District officials report often significantly more discretion for each of these categories. The average discretion reported by district health officials (0.50) is 66% higher than the average discretion reported by sub-county health officials (0.30). There are also significant differences in the responses of sub-county and district health officials about whether their suggestions were incorporated into sub-county or district Development Plans, respectively, and Local Government Budget Framework Papers. All this suggests that district health officials enjoy more discretion and flexibility than sub-county officials, which corresponds to the *de jure* allocation of authority by the Local Government Act.

It was difficult to compare the levels of discretion enjoyed by district and sub-county governments in education as not enough similar questions were asked and the “education” questionnaire at the sub-county level was, by design, often administered to the sub-county chief. The questionnaire focused on general administrative questions rather than exclusively on education. The only question—on funds—for which answers are presented for both district and sub-county governments was consequently phrased differently in the two questionnaires. The differences in the responses of sub-county and district education officials about whether their suggestions were incorporated into local government plans are only marginally significant for sub-county or district Development Plans, and insignificant for Local Government Budget Framework Papers.

In summary, the survey results indicate that local governments at both the district and sub-county level do in fact have some autonomy in the delivery of public services. The findings discussed previously suggest that there is reason, based on officials’ awareness of local demands at the sub-county level, to expect this autonomy to improve the tailoring of resource allocations for local public services. We now turn to an examination of the variation of demand for publicly provided services across jurisdictions, public official’s knowledge of this variation in demand, and the extent to which the match supply to demand.

4. Meeting Local Demand for Public Goods and Services

One of the classic arguments for fiscal federalism as narrated by Tiebout and Oates is that local governments can better match goods to preferences. It is important
therefore to investigate whether demand really varies in important ways across jurisdictions—and in the case of Uganda, whether these variations are across districts or across sub-counties within districts (or both). It is equally important to investigate whether differences in household demand are reflected in the perceptions and actions of public officials. If there are significant differences across jurisdictions, and local public officials display knowledge of these differences then this can provide an argument for decentralization. Data on demand was collected from households and public officials to examine these issues.

A more fundamental issue is whether there is any evidence of substantial demand for some of the publicly provided goods being studied. If there is lackluster demand for a particular public good, there might be diversion of resources away from that public good. Even if resources were not diverted, the provision of that public good might receive less attention. For many public goods this diversion of resources and attention away from them can be efficient. However lack of demand for a public good, which is known to be cost effective, is worrisome, as it indicates that resources and attention will be diverted away from adequate provision.

In the next section we look at local demand for public goods, and the response to this demand by local governments.

4.1 What Do Households Demand? And Do Demands Vary Across Jurisdictions?

In our surveys, households were asked the question:

If the sub-county government received Sh 10 million, on which activity would you want most of the money spent? (surveyor: do not read out; select one) [$1~1000 Sh.]

The question is asked in this way to facilitate the respondents understanding the question and being able to answer it. In principle better data could be collected if respondents were asked to rank several different publicly provided goods, but this is liable to confuse respondents as has been discovered in attempts to do so. The answer, which measures

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7 The argument also requires that central government officials have a poorer understanding of the demand for different public goods than local officials. The data did not allow an examination of this question. In
deficient demand, also conflates demand and supply. Adequate public provision of a public good, which saturates demand, might lead respondents to pick some other good as their first choice. We try to deal with this concern in the discussion below.

Data on household demand are presented in Table 5. Two items are of particular interest: immunization and primary education. Remarkably, only 1% of households responded “immunization”. For other goods this might have been an argument for not supplying goods that are not demanded, but in the case of immunization this contradicts accepted scientific knowledge on the cost effectiveness of preventative and curative medicine. Even when asked to pick among different forms of health provision, households did not show any evidence of demanding immunizations. For a question that asked which health service citizens would want money spent on, only 0.45% of respondents wanted money spent on immunization as compared to 52% on medicines. It is theoretically possible that many people rank immunization as their second preference and there is significant demand for immunization that cannot be observed due to the question only asking about the most preferred good. This would not be unlikely if everyone expressed the same top preference. However, since there is considerable variation in the top preference, this seems less likely. It would require that people have different preferences for the most demanded health service, but also that most people agree that immunizations are the second most important public good. The data did not allow any direct inference on this point. Some reports do suggest that decentralization has led to local governments reducing their support for immunization programs, which is unsurprising given the observed weak demand for immunizations.

It is also theoretically possible that there is little demand for immunization because of saturation, i.e., every one is immunized. In this case, the inference that citizens will not care enough about immunizations for local governments to focus on it, would be wrong; rather, it may be the case that there is little demand for immunizations because they have already been adequately provided. However, it is more likely that children in fact are not adequately immunized; if citizens, regardless, believe that they are, then the lack of observed demand remains worrisome. In fact immunization rates for

principle data could be collected from central government officials to answer this question.

8 A detailed table reporting results of this answer is available from the authors upon request.
diphtheria, polio, measles and tetanus are below 50% according to UNICEF. These rates actually appear to be lower than the rates reported for 1994-1995 by Hutchinson.\textsuperscript{9} Health officials reported a decline in immunization rates in 33% of facilities, and 24% stated the reason for this decline was a reduction in grants (Azfar et al. 2001). It is possible that the weak demand has led to under-funding of immunization and worsening of outcomes, though there is no direct way of making that inference.

This apparently wide divergence between accepted scientific knowledge and citizens’ demand raises concerns about the decentralization of immunization in Uganda. It is not meaningful to talk about differences in demand from such a low base, and indeed there are no perceptible differences in demand for immunization in Uganda across districts or sub-counties.

In contrast to immunization, 22% of respondents stated they would prefer the money to be spent on primary education (only water at 31% was ranked higher). This interest of citizens in primary education suggests they would exert political pressure to improve primary education delivery in their localities. There are also large differences in demand for primary education across districts, which vary from a low of 7% in Tororo to a high of 39% in Apac.

We conducted a formal test of this hypothesis based on the sum of squared deviations to test whether there were any significant deviations in the demand for education across districts (see Azfar and Livingston 2001 for a description of this test and a tabulation of the results). We found that there were indeed statistically significant and economically meaningful deviations in the demand for education (the standard deviation being around 35% of the mean). We also conducted a similar test for the deviation in demand across subcounties within districts but found less evidence of the dispersion of preferences across districts within municipalities.

4.2 Do Local Public Officials Know What Households Demand?

\textsuperscript{9} Hutchinson (1999) quotes the Ministry of Finance monitoring survey of “Social dimensions of adjustment.”
In order for local government to better match service provision to citizen preferences, local officials need to know and act upon citizens’ demands for public goods. To determine whether differences in households’ demand are reflected in the perceptions and actions of public officials, the latter were asked two questions:

If this sub-county government received Sh 10 million, on which activity would local people want most of the money spent? (do not read out; select one).

In the last year, on which activity did this sub-county government spend most of its local tax revenues? (do not read; select one)

To examine whether local officials actually had knowledge of local preferences, we regressed the responses of public officials in each district on the difference between households’ demands in that district from the national average (the interested reader can consult Azfar et al 2001 for the statistical results).

\[ x_{ij} = \text{percentage of households who demand good } j \text{ in district } i \]
\[ y_{ij} = \text{percentage of officials who think households demand good } j \text{ in district } i \]

\[ \text{Regress } y_{ij} = \beta x_{ij} + \epsilon_{ij} \]

No evidence was found of any correlation between household demands and either public officials’ knowledge of these demands or resource allocation decisions at the district level.

This exercise was then repeated at the sub-county level, where we found evidence of some congruence between household and public official preferences. A literal interpretation of the coefficient would be “sub-county officials reflect 20% of the population’s preferences.” However, the coefficient should not be taken literally, because measurement error in the independent variable may be dragging down the coefficient (since we did not know the measurement error, and could not accurately estimate it, we did not try to correct for this bias). Sub-county officials, unlike district officials, do seem to reflect the demand of the citizenry to some extent.
Similar but weaker results were found for actual resource allocation: there is a positive but insignificant relationship ($t=1.4$ in a robust regression) between household demand and sub-county-level resource allocation. One possible explanation for the weakness of this relationship may be that if resources were actually allocated to a public good in the previous year, the marginal demand for the good this year would fall.

In general, this analysis of household demand for public services in Uganda gives only weak support to the decentralization of primary education and malaria to sub-national levels, and no support to the decentralization of immunization. Among immunization, malaria control and primary education, the only good with sizeable household demand was primary education. Differences in demand were really only significant across districts for primary education and malaria and not significant across sub-counties within districts. However, only differences in demand across sub-counties were reflected in public officials’ perceptions.

5. Voting and Political Action

First and foremost, local demand for public goods emerges in policy discourse, political action, and elections – collectively known as “voice.” In this part, we review salient aspects of Uganda’s political system, and then examine our survey findings on voting behavior and on sources of political information.

5.1 Political Accountability and Competition in Uganda

In assessing decentralized governance, one must take the special features of Uganda’s political system into account. While political mobilization is high in Uganda by most accounts, and democratic practice has improved, the “no-party” system poses problems of definition and interpretation. Moreover, the information needed to assess the extent of democratic politics is not always available. The no-party system is best known for its effects at the national level, but it is also shaping local politics (see Box 4). The non-partisanship requirement for national political campaigns was extended to local elections under the LGA (art. 126).
What does the record show about political expression and competition under no-partyism? On the one hand, some may read no-partyism as anti-democratic, hence something that makes citizen voice and its attendant information flow impossible. For example, the 1999 Human Rights Watch Report, "Hostile to Democracy," interprets the National Resistance Movement (NRM or "Movement") as essentially a state-party. This means that whatever the Movement hierarchy in Kampala says goes. This suggests that local council accountability runs at least as much to the Movement heads as to the local population, and that contestability is constrained by the Movement's expressed preferences and the expected costs of countermanding them.

The Movement has a representative structure that parallels the decentralized government councils at every level, with the National Movement Conference and its permanent secretariat at the pinnacle. Human Rights Watch suggests that this extensive duplication—completely funded by the state—has no other evident function than as a partisan political apparatus of the type used in one-party states. The monolithic nature of the Movement is further buttressed by the constitutional prohibition on conventions by other parties, the use of sedition law to suppress selected criticisms, intimidation by police and security forces of some party offices and independent journals, mandatory political education for state functionaries and state control of the newspapers and radio stations reaching rural audiences. (State Department 2000, Human Rights Watch 1999, Freedom House 1999)

Despite the above practices, there appears to be space for contestability of elections and of public debate on political issues. According to the U.S. State Department’s 1999 Country Reports on Human Rights Practices, (p 17), “Individual parliamentarians who claim non-Movement party affiliation fully participate in the legislature.” The report also suggests that the national legislature took a relatively “independent and assertive” posture during 1999 (p. 16). According to the 1999 report of Freedom House, “…political parties that have their roots in Uganda’s pre-independence period and that are largely divided along ethnic lines continue to operate and vigorously seek to revive party politics.” (p. 1) The International Foundation for Electoral Systems (IFES) also reports that 201 of the 214 directly elected seats in parliament were in fact contested during the 1996 national elections. In addition, parties were allowed to campaign in the 2000 referendum on the no-party system. There also appears to be consensus that the government generally respects freedom of expression, despite its use of some restrictions, and indeed hard-hitting stories of scandal and corruption appear in both print and electronic media. (State Department 2000, Freedom House 1999)

Despite the dominant position maintained by the Movement, and the restrictions placed on alternative parties, some elections appear to be contested (and sometimes won) by non-Movement candidates. This can be stated more confidently with respect to national than local elections. No reliable information was available on the extent of competition in local elections. Observers appear to agree that a divide exists between local and national-level politics, but differ as to which is more democratic and accountable. Field studies provide evidence that people have usually viewed the Resistance Councils, now Local Councils, as legitimate long-standing practices of local consultative democracy. Resistance councils are believed to have “decisively checked”
the authoritarian powers of the appointed chiefs. The problem, in this view, is that local transparency may be real, but it does not extend to higher levels—or is at least watered down as one ascends the hierarchy. (Ottemoeller 1996, Human Rights Watch 1999). Also, LGUs have been held accountable legally—for example, having been taken to court for non-payment of wages and other employment issues (Lubanga 1998). Sub-counties benefit from older practices of consultative governance and from relatively high trust—although migration continues to drive demographic change, especially in the South.

On the other hand, there are reasons for believing that national politics and institutions are more democratic than local ones. First, media and party activities appear most intensive in the national arena and in Kampala. Second, since the early days of the Resistance Councils, local government has become more integrated into the public sector. As a result, recent observations suggest that the state and the local councils have greater authority in the provinces than in the capital and other large cities—that is, where they do reach into the interior (not always the case). Human Rights Watch cites evidence that both the local councils and the Resident District Commissioners do much of the Movement’s work in the interior, providing platforms for candidates, spreading the Movement ideology, administering political training and other functions (Human Rights Watch 1999). This suggests that political competition is probably much more limited in rural areas than major urban centers, that heavy-handed tactics are less likely to be opposed or publicized, and that political information is more controlled and less available in those areas.

Last, the committee structures set up under the LGA appear to have created at least as many governance problems as they have resolved. School Management Committees are claimed to divert funds in urban districts, and to divert materials in rural districts—to alternative uses, including personal benefit. Abuses become all the more likely since, as some studies have found, communities are not very aware of the school funding programs, or of the committees’ operations, and are not encouraged to participate (Uganda Debt Network 1999). Similarly, Health Unit Management Committees are believed to be major culprits in the drug leakage problem. These committees can be selected by the District Council, locally elected, or ex officio—but many are unknown to the communities. In a recent study, surveyed communities did not know the appointment
methods used in filling these committees. They also viewed the committees as ineffective, and said that they give themselves large sitting allowances and engage in patronage (Asiimwe et al 1997). Lower-level committees (at the sub-county and village levels) frequently do not exist or do not function well, and where they do operate they mostly identify and seek training for community health workers (Hutchinson 1999). NGOs are deeply involved in health care provision and might serve as a check on abuse within the government system, but they have largely avoided working within the public sector for fear of the delays and skimming that their budgets would suffer.

5.2 Patterns of Voting and Political Action

This section reports results on the sources of direct political discipline on local and national governments. More specifically, these results shed light on:
1. Whether voter turnout is greater in local or national elections.
2. Whether people vote for different reasons in local or national elections.
3. The determinants of membership in health and education committees.
4. The extent and success of political action.

Households were asked the following questions:
Did you vote in the last Parliamentary elections?
If yes, ask What factors influenced who you voted for? (surveyor: do not read out answers)

Did you vote in the last district (LC5) or sub-county (LC3) elections?
If yes, ask What factors influenced who you voted for? (surveyor: do not read out answers)

Reported turnouts are very high in both local (80%) and national elections (83%). In addition to turnout, the reasons for voting may also affect the quality of local government. If citizens vote on the basis of the candidates experience or agenda this might provide incentives for better overall public services. However, if citizens vote on the basis of race, religion or language this may induce officials to conduct policies not aimed at improving general welfare (like diverting public resources to particular sections of the population). The reported reasons for voting appear to be “good” in both local and national elections: the vast majority (74%) cited the candidate’s agenda as a reason in both local and national elections, and almost all (91%) reported the agenda, prior
experience or political affiliation as a reason, with very few (4.6%) citing at least one “poor” reason, such as being paid by a candidate (2%), religion (0.7%), race (1.8%), or language (1.6%). Voting patterns, which have been shown to affect service delivery elsewhere,\textsuperscript{11} are thus uniformly encouraging for Ugandan politics, but give no indication that they are more encouraging for local than for national politics. In fact, it is unclear to what extent either national or local elections are genuinely contested. As previously mentioned, the NRM dominates both levels, and it would be difficult to interpret the importance of differences in voting behavior even if there were significant differences.

Next, the determinants of membership in village health committees and school management committees were estimated. Unsurprisingly, education and income predicted committee membership. While these results might suggest there is elite capture of health and education committees, it can reasonably be countered that membership of committees by well-educated people would improve performance.\textsuperscript{12} (Detailed results are omitted here for reasons of brevity.)

Finally, with regard to the extent of political action, respondents were asked:

In the past year, have people in your village/town met to request that officials address a specific issue? (for example, improvement of health provision, local roads, water delivery etc.)

If yes, ask Were these actions successful?

Most people (56%) said they had participated in political action and 63% of these people said they had participated with at least partial success. We have no evidence that these high rates of participation are due to decentralization. However, if one is willing to accept \textit{a priori} that political action is a more important discipline on local than on national government, then these results could be interpreted as suggesting one reason for improved public service delivery following decentralization.

6. Sources of Information on Politics and Government

An equally important question in the domain of political disciplines is how Ugandans get news about local or national politics. In our survey, households were first

\textsuperscript{10} The interested reader can read Azfar and Livingston 2001 for tabulations of these results.
\textsuperscript{11} For example Betancourt and Gleason (2000) find that voter turnout affects the allocation of doctors and nurses to Indian districts.
\textsuperscript{12} We thank Wally Oates for this point
asked whether they followed politics. Almost all said yes to both local (95%) and national (94%) politics. They were then asked the questions:

What is your family’s main source of information about events and politics in this area?
What is your main source of information about national events and politics?
(surveyor: do not read; select one)

The survey results show that Ugandans use the media as the main source of information for national politics (64%) more often than they use the media for local news (20%), as presented in Table 3a. These patterns are clear for all sources of media, local newspapers, national newspapers, local radio, national radio and television, and the difference is significant in each case. By far the most important source of information on national politics is the radio, with 65% of Ugandans citing national (40%) or local (25%) radio as their main source of information on national politics. By contrast, radio is the main source of news for local politics for only 20% of Ugandans.

The most worrisome finding might be the extent of reliance on community leaders as a source of news on local politics. In an almost diametrical reversal of the results on radio usage, 70% of Ugandans use community leaders as their main source of information on local politics, while only 28% use community leaders as their main source of information on national politics. The use of community leaders as the main source of information for local politics by an absolute majority might represent elite capture in the sense of Bardhan and Mookherjee (1998). If this is a correct interpretation of these results, the results might cast doubt on the effectiveness of local politics as a disciplining device for local government, despite the high turnouts in elections.

It is theoretically possible that relying on community leaders for news on local politics is no worse than relying on the media. Community leaders may be honest, trustworthy people and the media could be controlled by narrow elites. Is there some

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13 We tried to assess people’s knowledge of local and national politics by asking them the names of the President and their sub-county chair. The test is unfair as Museveni is a charismatic figure who’s been in power for 15 years, but the results which showed essentially everybody (98%) could name the president but only 70% could name the sub-county chair, give little reason to hope for better knowledge of local rather than national politics. In the future we will design better tests of knowledge of local and national politics.
way of assessing whether reliance on community leaders affects knowledge of local politics? We assessed the potential bias in knowledge of local politics by looking at the effect of the source of information on perceptions of corruption at the local and national level (Tables 4). People who used community leaders as their main source of information on politics were significantly less likely to have heard reports of corruption.

$$x_{ij}, \ldots, x_{ij} = \text{whether household } j \text{ uses source } i \text{ for news on local politics}$$

$$y_j = \text{whether household } j \text{ has heard reports of corruption}$$

Estimate probability of hearing reports as a function of source of information

Report marginal effects (changes to probabilities implied by the estimated equation)

$$\Pr(y_j) = \beta_1 x_{ij} + \ldots, \beta_i x_{ij} + \varepsilon_{ij}$$

The left out group on sources of information in the regression is community leaders. The coefficient 0.107 (t=2.43) on media suggests that people who rely on the media as their main source of information are 11% more likely to have heard reports of corruption than people who rely on community leaders for news (Table 4, column 4). The regressions controlled for education, income and gender of the respondent. Education appeared to increase the probability that a respondent had heard of corruption. Men had heard of corruption more often than women though the effect is not quite significant. We should caution the reader that because of the relatively few control variables in the regressions, our results may be biased because we have omitted some explanatory variables.

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14 70% of those who follow local politics report using community leaders as their primary source which corresponds to 67% of the entire sample, similarly 27% use community leaders as their main source for national politics.

15 These results were similar for national politics, the coefficient of 0.130 on media suggesting that people who rely on community leaders as their main source of news on national politics are 13% less likely to have heard of corruption in national politics. The small difference in the proportion of people who had heard of corruption at the national (52%) and local (48%) level is probably driven by differences in knowledge of local and national corruption and should not be interpreted as evidence for more corruption in the national government. Indeed, reported payments to local officials are far more common than those to central officials. This, too, is not surprising, because citizens probably interact with local officials far more often. To assess whether there is more corruption at the local and national level, one would have to ask about frequency of contact with local or national officials; ask about amounts paid; and for completeness repeat the exercise for firm managers, who might have different propensities to pay bribes than common citizens. This could not be done in the present study for budgetary reasons.
A comparison of Tables 3a and 3b also suggests that reliance on community leaders for news on local politics affects knowledge of forms of misgovernance such as corruption. While 70% rely on community leaders for news on local politics, only 28% get news on local corruption from community leaders (the main source of information on local corruption is “friends and family”). One plausible explanation for this is that community leaders underreport corruption in their communications with their communities.

In terms of comparison across sectors, public officials were asked whether there was media coverage of their sector and many more education officials reported coverage than health officials. This might be another reason for education being a more appropriate sector to decentralize than health.

7. Mobility

A second key method of demand revelation, apart from politics, is “exit,” i.e. migration. Following Tiebout’s classic (1956) analysis, mobility is often cited as a reason why decentralization will improve productive and allocative efficiency. The movement of people to jurisdictions which supply the mix of public goods they prefer creates a first-order improvement in allocative efficiency. Additionally, if local governments are reluctant to lose their citizens, or desire to attract citizens from elsewhere, then mobility may create pressures for more productively efficient local government. To assess whether mobility might be an important source of improvements in the delivery of health and education, Ugandan households were asked two sets of questions:

Why do you live in this village/town? (surveyor: do not read out list)
Do you have plans to move to another village/town in the next year?
   If yes, ask Why are you planning to move? (surveyor: do not read out)

The vast majority (82%) cited spouse or parents as the reason for why they lived where they did: only 1.3% cited health care and only 1.2% cited education as reasons. There was significant overlap (~60%) between citing health and education as a reason for residence, and even among this small number, most of these households also cited other reasons for their choice of location.
A total of 36 (3.3%) households said they were planning to migrate in the next year. This is not a small number and is comparable to the US—a relatively footloose society. Thus the reason for questioning the relevance of mobility as a motivating factor for improvements in the delivery of health or education is not that illiquid land or labor markets have rendered the population immobile, but rather that mobility is not driven by the provision of health and education delivery. The most significant reason for migration seems to be employment. Employment is prominently cited both as a reason for people living where they do (14.7%) and as a reason for planning to move (1.8%).

By contrast, there is very little evidence of mobility driven by the quality of health or education provision. Only one household cited schooling as the only reason for planning to move, and one other household cited all three of education, health and employment as a reason for moving. Thus one cannot be confident that migrations based on health or education delivery are either a direct or indirect source of better allocative or productive efficiency in Uganda.\(^{16}\)

**8. Federalist Disciplines and Socio-economic Outcomes**

The most challenging aspect of our empirical research was to test whether the political disciplines documented in the previous sections of this paper in fact affect public service delivery. This is difficult, because comparisons can be made only across jurisdictions; consequently, there are only 75 observations, and only 75 observations of middling quality, based on the assessments of 15 households each. Measurement error could easily prevent discovery of a relationship even if one exists. We tried to minimize measurement error by using composite indexes for the variables of interest, but this is an inevitably imperfect exercise.

Before analyzing the impact of political disciplines at the sub-county level, one must ask whether a sub-county level analysis is a valid exercise if most resource allocation decisions are made at the district or national level. We believe it is, for three reasons. First, sub-county officials do appear to have some authority over resource allocation and the management of public services, as reported in section 4. Secondly, the

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\(^{16}\) One reading of the evidence, suggested by some readers, is that even marginal choices of where to locate once the employment decision had been taken, may motivate local officials to improve service delivery.
random effects estimation procedures used here are robust to district-level effects. Thirdly, even if decisions are being made at the district level, media use and voting propensities at the sub-county level could affect resource allocation decisions at the district level. District-level officials might find it more politically expedient to concentrate on service delivery in sub-counties that have a better informed and more politically active citizenry—as Betancourt and Gleason found in India (2000). The interpretation of the result would in that case be different, but it is nonetheless interesting.

Two measures of education quality are used. The first is “test score,” which is the average score of primary school students on tests administered in the primary schools surveyed. The test consisted of 14 simple mathematics questions and 9 simple language and general knowledge questions. These questions were preceded by a short demographic questionnaire, which asked if the child’s parents were alive, could read etc. The test was administered to 6035 students. The variable “test score” depends on the number of correct answers to the 23 mathematics, language and general knowledge questions. “Test score” may be an imperfect measure for two reasons: first, it is based on only two villages per sub-county, and second, test scores may not capture everything about the quality of education. The second measure of education quality is an average of the normalized value of “test score” and a subjective assessment of education quality from the household questionnaire. This has the advantage of being a broader question and having information from four rather than two villages, but the disadvantage of being less precise. It is reassuring that the correlation between “test score” and the answer to the subjective question is positive and significant (correlation coefficient=0.44, p<0.001). This suggests that each of these variables is a reasonable measure for some underlying quality of education, and the average of these two measures might be a better measure than either.

These variables were regressed on two indexes, “voting” and “media access and use,” controlling for the average of log-income, female education and male-education in the sub-county. The variable “voting” is the average of the normalized value of voting in local elections and voting for a good reason (the candidates’ experience, agenda or political affiliation, rather than bribery or the candidates’ race, religion etc.) The variable
“media access and use” is the average of the normalized values of whether the media is the primary source of local news, how often the household listens to the radio and how often the household reads the local newspaper.

The outcomes analysis is carried out in two stages. In the first stage, the students’ test scores were regressed on demographic variables available for the students. These include whether each of their parents is alive and can read or write. The regression results on these variables are presented in Azfar and Livingston (2001). The most important determinant of test scores is whether or not the child’s mother is alive. The coefficient of 1.59 is 5 times higher than the next most important determinant of scores. Whether the mother can read and write has a negative sign, which is difficult to explain. Whether the father can read and write has a positive sign, but whether the father is alive has no perceptible impact on test scores. Girls did better than boys, and older children did better. Eating breakfast, perhaps proxying for household income, has a significant positive effect on test scores. Living far from school has no perceptible effect on test scores.

The resulting coefficients on the sub-county dummies from this first stage regression reflect the effect of being in a school in the sub-county after controlling for whether the parents are alive and parents’ education.

\[ x_{1h} \ldots x_{jh} = \text{socioeconomic characteristics of child's household} \]
\[ y_{ih} = \text{child's test score} \]

Regress \( y_{ih} = \beta_1 x_{1ih} + \ldots + \beta_j x_{jih} + \alpha_1 D_1 + \ldots + \alpha_{75} D_{75} + \nu_h \)

use \( \alpha_1 \ldots \alpha_{75} \) in second stage

Thus, in the second stage, the coefficients on the sub-county dummies from the first stage regression are used as the dependent variable. The results of this second-stage regression, showing the impact of political disciplines on education outcomes, are presented in Table 15; this is a sub-county level analysis with 75 observations.
$z_{ik} \ldots z_{ik} = \text{socio-economic and political characteristics of sub-county } k$

$\alpha_k = \text{coefficients on sub-county dummies from first stage}$

Regress $\alpha_k = \beta_1 z_{ik} + \ldots + \beta_t z_{ik} + \epsilon_{ik}$

The regressions control for other community-level variables that may affect test scores, such as income, education, income distribution, and rural residence. Income has a large positive effect on test scores: the coefficient of 2.96 on log(income) implies that a doubling of income would raise test scores by two points. The average level of mother’s education in the sub-county, constructed using the household data, has a large generally significant effect of 1.95. Father’s education has a negative sign, but is only significant for the test score variable and not significant for the combined index. Rural residence has a large positive coefficient, which is difficult to explain. Neither income inequality, nor ethnic diversity has any perceptible effect on test scores.

The first column in Table 5 shows results of a random effects regression with the students’ “test score” as the dependent variable. There is a positive and significant effect of “media access and use”. The coefficient of 2.8 on media (t=2.97, p<0.01) means that test scores in sub-counties where everyone reads newspapers, listens to the radio often, and uses the media as their main source of local news, are 2.8 points higher than sub-counties with no media use. This is nearly twice as high as the most significant individual level determinant of scores—whether the mother was alive. There is no perceptible effect of “voting and political action.” For the broader “education index,” media continues to be significant and voting remains negative, and in fact becomes marginally significant.

We tried to repeat this exercise for vaccinations but were frustrated by the poor quality of the data. One problem was that the surveyors could only see vaccination cards about half the time and a response “yes, but card not seen” could not reasonably be coded as either a “yes” or a “no”.

Overall, the evidence suggests that media access and use have a positive effect on the quality of education delivery. However, there is no perceptible effect of voting on

---

17 Or technically speaking the component of test scores not explained by basic demographic variables.
education. It was noted earlier that the patterns of using community leaders as the main source of information for local politics suggested that there may be severe elite capture of local politics. The results reported in this section—i.e., that the use of media as the source of news on local politics (the opposite of using community leaders as the source of news) is related to better performance—suggests that elite capture might be undermining education provision in Uganda.

8. Conclusions

According to the theory of fiscal federalism, local government are subject to more intense political disciplines, and these federalist disciplines should lead to more efficient provision of government services at the local level. These arguments apply to both productive and especially allocative efficiency. Local officials are expected to have better knowledge of local demands than national governments. Citizens are supposed to have better information on local politics. Citizens are presumed to vote more often or for better reasons in local elections. Last but not least, the potential mobility of households across jurisdictions is supposed to motivate public officials into providing better services. In Uganda however there does not seem to be clear evidence of improvements in delivery following decentralization (Ablo and Reinikka 1998, Hutchinson 1999, Azfar et al. 2000). This paper presents evidence from Uganda on these presumed federalist disciplines and the results provide little reason to expect better provision of government services by local governments.

The results on demand for public goods show worryingly little demand for immunizations—an important publicly provided good, which is well-known to be cost effective. This may be the cause of the reported diversion of public resources away from immunization following decentralization, though there was no way of showing a formal link between the weak demand and the reported diversion of resources.

For primary education there was both evidence of significant demand and of significant differences in demand across districts; however there was no evidence of public officials having better knowledge of demand for public goods in their district. There was however some evidence of differences in demand for education across sub-
counties and for public officials having better knowledge of demands within their sub-
counties.

On voting there were reports of both high rates of voting and generally good reasons for voting in both local and national elections. Committee membership seemed skewed towards more educated and wealthier people. While this might indicate elite capture, it can reasonably be countered that the presence of more educated people in health and education committees may improve performance.

The results on sources of information on politics are perhaps the most interesting and the most worrisome. While the vast majority of Ugandan households use the media as their source of information on national politics, the vast majority rely on community leaders as their source of information on local politics. Furthermore it appears that the reliance on community leaders undermines their knowledge of some aspects of local politics like corruption. Furthermore, it seems that sub-counties where citizens rely on the media for news of local politics have better service delivery as measured by test scores and satisfaction ratings with education. Taken together these finding may indicate that elites might control information flows on local politics and thus dominate local politics more than national politics.

There is little evidence of mobility or potential mobility being driven by the quality of publicly provided health or education services. This undermines the relevance of this presumptively important federalist discipline on local governments to the provision of health or education delivery in Uganda.

What policy implications may follow from our findings. This study raises cautions about any further decentralization of services related to immunizations. The results suggest that the use of surveys may improve public official’s knowledge of local politics. Trainings for journalists in the districts may improve information flows about local governments. These however are mere suggestions. Clear advice on improvements in policy could only be given after more research was completed on the political disciplines facing local and national governments and on the information flows between governments and citizens in Uganda.
References


Azfar, Omar and Jeffrey Livingston, Federalist Disciplines or Local capture: An Empirical Analysis for decentralization in Uganda, mimeo IRIS, University of Maryland College Park, 2001.


Bardhan, Pranab and Dilip Mookherjee, Expenditure decentralization and the delivery of public services in developing countries, IED Discussion Paper, Boston University, 1998.


UNICEF, www.unicef.org/statis/country

<table>
<thead>
<tr>
<th>Household</th>
<th>Public Official Education</th>
<th>Public Official Health</th>
<th>School Principal</th>
<th>Health Facility Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic demographics on respondent and family</td>
<td>Basic demographic on respondent</td>
<td>Basic demographic on respondent</td>
<td>Basic demographic on respondent</td>
<td>Basic demographic on respondent</td>
</tr>
<tr>
<td>Demand responsiveness of service delivery</td>
<td>Demand responsiveness of service delivery</td>
<td>Demand responsiveness of service delivery</td>
<td>Demand responsiveness of service delivery</td>
<td>Demand responsiveness of service delivery</td>
</tr>
<tr>
<td>Health care use</td>
<td>Government run primary schools</td>
<td>Government run health units</td>
<td>General primary school information</td>
<td>General health unit information</td>
</tr>
<tr>
<td>Knowledge of immunizations</td>
<td>Planning of service delivery, supplies of vaccines and medicines</td>
<td>School supplies facilities and equipment</td>
<td>Performance standards and monitoring of service delivery</td>
<td>Availability of equipment</td>
</tr>
<tr>
<td>Closest government and private unit</td>
<td>Role of local government in education delivery</td>
<td>Performance standards and monitoring of service delivery</td>
<td>Performance standards and monitoring of service delivery</td>
<td>Performance standards and monitoring of service delivery</td>
</tr>
<tr>
<td>Immunizations of infants</td>
<td>Performance of service delivery</td>
<td>Performance of service delivery</td>
<td>Performance of service delivery</td>
<td>Performance of service delivery</td>
</tr>
<tr>
<td>Malaria</td>
<td>Funding of overall service delivery</td>
<td>Funding of service delivery</td>
<td>Funding of service delivery</td>
<td>Funding of service delivery</td>
</tr>
<tr>
<td>Village Health committee</td>
<td>Personnel, recruitment, salaries and allowances</td>
<td>Personnel, recruitment, salaries and allowances</td>
<td>Personnel, recruitment, salaries and allowances</td>
<td>Personnel, recruitment, salaries and allowances</td>
</tr>
<tr>
<td>Primary school</td>
<td>Disciplining and firing of staff</td>
<td>Disciplining and firing of staff</td>
<td>Disciplining and firing of staff</td>
<td>Disciplining and firing of staff</td>
</tr>
<tr>
<td>Mobility</td>
<td>Corruption</td>
<td>Corruption</td>
<td>Corruption</td>
<td>Corruption</td>
</tr>
<tr>
<td>Access to media</td>
<td>Corruption</td>
<td>Corruption</td>
<td>Corruption</td>
<td>Corruption</td>
</tr>
<tr>
<td>Knowledge and awareness of government actions</td>
<td>Education committee</td>
<td>Health Committee</td>
<td>PTA</td>
<td>Health unit management Committee</td>
</tr>
<tr>
<td>Voting and political action</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social cohesion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of immunizations</td>
<td>Immunization and malaria</td>
<td>Funding of service delivery</td>
<td>Funding of service delivery</td>
<td>Funding of service delivery</td>
</tr>
<tr>
<td>Social cohesion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=126</td>
<td>N=18 District</td>
<td>N=125 Sub-county</td>
<td>N=20 District</td>
<td>N=145</td>
</tr>
<tr>
<td>N=137 Sub-county</td>
<td>N=18 District</td>
<td>N=140</td>
<td>N=140</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Discretion: How easily can you adjust services provision to respond to the suggestions of local people? (percentages)

<table>
<thead>
<tr>
<th></th>
<th>Sub-County Health Office</th>
<th>Sub-County Education Office</th>
<th>District Health Office</th>
<th>District Education Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot Adjust</td>
<td>12</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Can adjust with great difficulty</td>
<td>24</td>
<td>26</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>Can adjust with some difficulty</td>
<td>47</td>
<td>52</td>
<td>75</td>
<td>67</td>
</tr>
<tr>
<td>Can Adjust Easily</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Adjustability Index(^\text{18})</td>
<td>0.56</td>
<td>0.59</td>
<td>0.68</td>
<td>0.63</td>
</tr>
<tr>
<td>N</td>
<td>124</td>
<td>134</td>
<td>20</td>
<td>18</td>
</tr>
</tbody>
</table>

\(^{18}\text{Adjustability Index}=(\text{Can adjust with great difficulty}+2\times\text{Can adjust with some difficulty}+3\times\text{Can adjust easily})/3\)
### Table 3a Sources of Information about Politics:
Percentage of people using each source$^{1,2,3}$

<table>
<thead>
<tr>
<th>Source</th>
<th>Local Politics (N = 1067)</th>
<th>National Politics (N = 1052)</th>
<th>T-statistic$^4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local newspaper</td>
<td>0.47% (0.002)</td>
<td>1.14% (0.015)</td>
<td>-1.53</td>
</tr>
<tr>
<td>National newspaper</td>
<td>0.28% (0.002)</td>
<td>1.90% (0.003)</td>
<td>-3.61</td>
</tr>
<tr>
<td>Local radio</td>
<td>15.37% (0.011)</td>
<td>25.76% (0.004)</td>
<td>-5.97</td>
</tr>
<tr>
<td>National radio</td>
<td>4.69% (0.006)</td>
<td>39.73% (0.013)</td>
<td>-21.42</td>
</tr>
<tr>
<td>TV</td>
<td>0.09% (0.001)</td>
<td>0.57% (0.015)</td>
<td>-1.91</td>
</tr>
<tr>
<td>Friends and family</td>
<td>8.43% (0.009)</td>
<td>3.52% (0.002)</td>
<td>4.79</td>
</tr>
<tr>
<td>Community leaders</td>
<td>70.48% (0.014)</td>
<td>27.66% (0.006)</td>
<td>21.68</td>
</tr>
<tr>
<td>Other</td>
<td>0.66% (0.002)</td>
<td>0.10% (0.014)</td>
<td>2.11</td>
</tr>
<tr>
<td>Total Media</td>
<td>19.8% (0.011)</td>
<td>64.5% (0.014)</td>
<td>24.11</td>
</tr>
</tbody>
</table>

### Table 3b Sources of Information about Corruption:
Percentage of people using each source$^{1,2,3}$

<table>
<thead>
<tr>
<th>Source</th>
<th>Local Corruption (N = 542)</th>
<th>National Corruption (N = 586)</th>
<th>T-statistic$^4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Witnessed self</td>
<td>12.18% (0.013)</td>
<td>3.58% (0.008)</td>
<td>5.43</td>
</tr>
<tr>
<td>Local paper</td>
<td>7.01% (0.011)</td>
<td>9.90% (0.012)</td>
<td>-1.74</td>
</tr>
<tr>
<td>National paper</td>
<td>4.61% (0.009)</td>
<td>13.65% (0.014)</td>
<td>-5.28</td>
</tr>
<tr>
<td>Radio</td>
<td>29.52% (0.004)</td>
<td>75.60% (0.008)</td>
<td>-3.12</td>
</tr>
<tr>
<td>TV</td>
<td>0.74% (0.020)</td>
<td>3.75% (0.018)</td>
<td>-16.94</td>
</tr>
<tr>
<td>Friends and family</td>
<td>57.75% (0.021)</td>
<td>26.79% (0.018)</td>
<td>11.30</td>
</tr>
<tr>
<td>Community leaders</td>
<td>28.60% (0.019)</td>
<td>9.56% (0.012)</td>
<td>8.46</td>
</tr>
<tr>
<td>Other</td>
<td>2.03% (0.006)</td>
<td>0.68% (0.003)</td>
<td>2.10</td>
</tr>
</tbody>
</table>

---

$^1$ N is the number of people who follow the news (table 8) or who heard reports of corruption (table 9).

$^2$ Standard error in parentheses

$^3$ Means, standard errors, and t-statistics shown are calculated treating those who do not follow politics (or did not hear reports of corruption) as a missing value. There are no significant differences in the results if such people are treated as nonusers of the information source.

$^4$ T-statistic of test of hypothesis that the percentage of people using a source of information is different for local issues and national issues.
Table 4. Effect of Sources of Information about Local Politics on Whether Respondent Has Heard Any Reports of Local Corruption\textsuperscript{1,2,3}

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>OLS\textsuperscript{4} (1)</th>
<th>Probit\textsuperscript{4} (2)</th>
<th>OLS (3)</th>
<th>Probit (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local newspaper</td>
<td>0.243</td>
<td>0.301</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.221)</td>
<td>(0.205)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National newspaper</td>
<td>0.048</td>
<td>0.034</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.349)</td>
<td>(0.399)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local radio</td>
<td>0.107*</td>
<td>0.121*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.045)</td>
<td>(0.049)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Radio</td>
<td>0.046</td>
<td>0.046</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.076)</td>
<td>(0.083)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Media</td>
<td></td>
<td></td>
<td>0.096*</td>
<td>0.107*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.040)</td>
<td>(0.044)</td>
</tr>
<tr>
<td>Friends and family</td>
<td>0.013</td>
<td>0.016</td>
<td>0.013</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>(0.057)</td>
<td>(0.066)</td>
<td>(0.057)</td>
<td>(0.066)</td>
</tr>
<tr>
<td>Don’t follow</td>
<td>0.235</td>
<td>0.273</td>
<td>0.234</td>
<td>0.272</td>
</tr>
<tr>
<td></td>
<td>(0.226)</td>
<td>(0.225)</td>
<td>(0.226)</td>
<td>(0.225)</td>
</tr>
<tr>
<td>Income</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Education</td>
<td>0.024*</td>
<td>0.027*</td>
<td>0.023*</td>
<td>0.027*</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.011)</td>
<td>(0.010)</td>
<td>(0.011)</td>
</tr>
<tr>
<td>Respondent = mother</td>
<td>-0.105</td>
<td>-0.114</td>
<td>-0.104</td>
<td>-0.113</td>
</tr>
<tr>
<td></td>
<td>(0.090)</td>
<td>(0.097)</td>
<td>(0.090)</td>
<td>(0.097)</td>
</tr>
<tr>
<td>Respondent = father</td>
<td>0.144</td>
<td>0.172</td>
<td>0.144</td>
<td>0.171</td>
</tr>
<tr>
<td></td>
<td>(0.095)</td>
<td>(0.100)</td>
<td>(0.095)</td>
<td>(0.100)</td>
</tr>
<tr>
<td>Respondent = both</td>
<td>0.044</td>
<td>0.065</td>
<td>0.047</td>
<td>0.067</td>
</tr>
<tr>
<td></td>
<td>(0.110)</td>
<td>(0.121)</td>
<td>(0.110)</td>
<td>(0.121)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.376*</td>
<td></td>
<td>0.366*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.178)</td>
<td></td>
<td>(0.178)</td>
<td></td>
</tr>
</tbody>
</table>

| N                     | 1019                        | 1019                        | 1019    | 1019      |
| R\textsuperscript{2}  | 0.17                        |                             | 0.17    |           |
| Log likelihood        | -608.5                      |                             | -609.2  |           |
| Pseudo-R\textsuperscript{2} | 0.14 |                             | 0.14    |           |

Standard errors in parentheses
* significant at 5%; ** significant at 1%
\textsuperscript{1} Sub-county dummy variables included in all regressions.
\textsuperscript{2} Left-out group (for the source of information reports) cited community leaders as primary source of information.
\textsuperscript{3} “Other relative/guardian of children” is the left-out group of the respondents.
\textsuperscript{4} Responses for “TV” and “other” are merged in with national radio and friends and family, respectively.
Table 15. Federalist Disciplines and the Quality of Education.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Score, GLS Random Effects&lt;sup&gt;1,2,4&lt;/sup&gt;</th>
<th>Index, GLS Random Effects&lt;sup&gt;1,2,3,4&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-29.273***</td>
<td>-6.879***</td>
</tr>
<tr>
<td></td>
<td>(11.403)</td>
<td>(2.074)</td>
</tr>
<tr>
<td>Media Index&lt;sup&gt;5&lt;/sup&gt;</td>
<td>2.807***</td>
<td>0.522***</td>
</tr>
<tr>
<td></td>
<td>(0.943)</td>
<td>(0.171)</td>
</tr>
<tr>
<td>Voting Index&lt;sup&gt;6&lt;/sup&gt;</td>
<td>0.292</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(1.918)</td>
<td>(0.349)</td>
</tr>
<tr>
<td>log(income)</td>
<td>2.963**</td>
<td>0.510**</td>
</tr>
<tr>
<td></td>
<td>(1.158)</td>
<td>(0.211)</td>
</tr>
<tr>
<td>Inequality&lt;sup&gt;7&lt;/sup&gt;</td>
<td>-0.242</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(0.870)</td>
<td>(0.158)</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>1.950***</td>
<td>0.343**</td>
</tr>
<tr>
<td></td>
<td>(0.962)</td>
<td>(0.175)</td>
</tr>
<tr>
<td>Father’s Education</td>
<td>-1.347**</td>
<td>-0.187*</td>
</tr>
<tr>
<td></td>
<td>(0.618)</td>
<td>(0.112)</td>
</tr>
<tr>
<td>Rural dummy</td>
<td>2.581*</td>
<td>0.470*</td>
</tr>
<tr>
<td></td>
<td>(1.535)</td>
<td>(0.279)</td>
</tr>
<tr>
<td>Ethnic Dispersion&lt;sup&gt;8&lt;/sup&gt;</td>
<td>2.679</td>
<td>0.259</td>
</tr>
<tr>
<td></td>
<td>(1.934)</td>
<td>(0.352)</td>
</tr>
<tr>
<td>R²</td>
<td>0.359</td>
<td>0.339</td>
</tr>
<tr>
<td>N</td>
<td>75</td>
<td>75</td>
</tr>
</tbody>
</table>

<sup>1</sup> standard errors in parentheses.
<sup>2</sup> the dependent variable is the residuals from the sub-county dummies from the regression reported in table 15.
<sup>3</sup> the education index takes the average of household reports of education quality and the residuals from the sub-county dummies in table 15, standardized as mean 0 and standard deviation 1 variables, if both are available. If one is not available, the index is just the variable that is not missing.
<sup>4</sup> standard errors in parentheses; overall R² is reported.
<sup>5</sup> the media index is the sum of the coefficients of sub-county dummy variables from three regressions: whether the media is a household’s primary source of information on local politics, how often the household listens to the radio, and how often the household reads the local newspaper.
<sup>6</sup> the voting index is the sum of the coefficients of sub-county dummy variables from three regressions: whether a household voted, whether a household voted for a good reason, and whether the household participated in political action.
<sup>7</sup> the inequality measure is the sub-county average of the interquartile range of log(income).
<sup>8</sup> ethnic dispersion is measured by calculating the probability that two randomly selected individuals within a sub-county will speak a different language.

* significant at the 10-percent level.
** significant at the 5-percent level.
*** significant at the 1-percent level.
Figure 1. Partial plots of pupil test score versus media index and voting index

Figure 2. Partial plots of education index versus media index and voting index