

The social demand for schooling in HIV/AIDS affected populations in Tanzania: summary results from a field survey

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Abstract

This paper justifies and explores the results of a social demand survey for primary school enrolment in Tanzania. This records and analyses the evidence derived from a structured household-based survey in rural and urban school catchments in two regions of the country (Iringa and Dodoma) with children and their guardians which explores the social demand for primary schooling, especially in relation to household poverty indices and changing labour in households affected by prolonged illness and death. It argues that HIV/AIDS effects at the household scale remain less important as a predictor of for school attendance and dropout than do poverty and other structural conditions of inequality.

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Demography, development and social demand issues

A major objective of the current DFID-funded project has been to prepare school-age population and enrolment projects for both Tanzania and Uganda to 2010, incorporating HIV/AIDS assumptions, which can be used by the respective Ministries of Education to assist their Planning Divisions in enrolment demand estimation. This directly demographic work is elaborated in Workshop Papers 2 and 3 for Tanzania and Uganda respectively. However, the 'demand' for schooling is much more than mere numbers, as is assumed in the demographic and enrolment projections: if it were as straightforward as that then there would have to be universal and compulsory schooling. Demand is also a matter of 'development', of factors affecting the 'uptake' of schooling, in Barnett and Whiteside's terms (2002, p.310). This project has therefore sought to balance the strictly demographic modelling and estimation aspects of its results with a more development oriented approach to examining aspects of the social demand for schooling in HIV/AIDS affected populations: in which respects and to what extent are the demographic estimates of the numbers of children available for schooling affected by actual attendance of those in the eligible age ranges, and to what extent is school attendance adversely affected by HIV/AIDS among the populations of household and communities?

On the supply side, delivering increased capacity is a necessary but not sufficient condition for enabling any national, regional and local enrolment targets to be met. Primary education is not in practice compulsory in any African country, and national governments have neither the political will nor administrative capacity to ensure attendance and 100% participation rates. Actual participation levels will not be only a function of the size of the cohort, but also of the demand by parents and children. A wide range of economic, social and cultural factors are known to affect demand, whether in the form of initial enrolment, dropout during the primary cycle, or progression from one grade to another. In most countries children from poor households, girls, and high parity siblings are disproportionately more likely never to attend, to dropout or to fail to complete the primary cycle. Levels and patterns of demand are socially and economically ordered.

The problem of any mismatch between supply and demand is widely recognised in policy discussions, and solutions are now usually directed to seeing the demand for schooling in the broader context of poverty alleviation programmes: raising household incomes in rural and urban areas; having more formal job opportunities for young people; greater commercialisation of agriculture and of farm activities; more opportunities for women. These will all raise the demand for education and provide the means to pay for it. In economic terms, the rate of return to primary education will begin to rise, and not be perceived to be falling, as has clearly been the case in most African countries during this last decade of severe and persisting economic crisis. The feasibility of meeting targets in education is seen not to be independent of broader development strategies and their success.

It is evident that HIV/AIDS must add a further dimension to the problem of demand management and estimation. As we have shown in the demographic modelling, HIV/AIDS will substantially reduce the size of primary school age cohorts in SSA. The epidemic is also expected to further reduce the demand for schooling, both directly, as a result of children being withdrawn from school to fulfil household domestic and economic labour requirements, previously undertaken by ill or deceased adult household members, or else indirectly as a result of increasing levels of poverty in AIDS-affected households, further restricting the ability to pay to support school attendance.

One critical policy problem, therefore, must be to begin to estimate the direction and extent of HIV/AIDS on demand for primary schooling at the household scale. It is towards this policy objective that the social demand survey described below has been directed. How does HIV/AIDS exacerbate the problem of weak or falling demand for primary school participation?

HIV/AIDS as a development and poverty problem

It is already clear that estimating direct demographic demand and how it is changing in AIDS-affected populations is only part of the whole story of the impact of HIV/AIDS on the education system. In Ministries of Education in most African countries there is a strong awareness of the seriousness of the overall problem, and HIV/AIDS has been ‘mainstreamed’ into policy discussion and implementation across the whole range of its activities, with the designation of an AIDS coordinator at a very senior level. Within these ministries themselves there is not a climate of silence and denial, but a widely distributed acknowledgement of the need to be proactive in the face of a serious crisis affecting the whole of society as well as the children in the schools. Inevitably the main direct focus within the education sector has been on delivery of AIDS education programmes and modules, innovating or recharging curricula and disseminating learning materials to target the serious need for better information on and understanding about the disease, its prevention and its impacts (to be further discussed in Workshop Paper 7).

In Tanzania, the approach to and awareness of HIV/AIDS and its impact are mirrored more broadly in its whole national development strategy, placing HIV/AIDS within the broader context of poverty alleviation. The national *Poverty Reduction Strategy Paper* (United Republic of Tanzania, 2001) is the main current statement, annually up-dated, of the range of current policies and programmes of government designed to focus on poverty alleviation as the primary development goal, with all development activities in all ministries contributing to that internationally sanctioned and largely externally financed goal. While many of the programmes are sector specific, the national strategy identifies (Chapter 6) six cross-cutting issues: governance, gender, environment, employment generation, urban poverty and HIV/AIDS. Each of these has a package of programmes associated with it, and in the case of HIV/AIDS these programmes, implemented mostly by the Ministries of Education and Health, at national and regional levels (Table 8, p.38), are now to be coordinated through the Tanzania Commission in AIDS (TACAIDS), established in 2001 within the Office of the Prime Minister.

To identify HIV/AIDS in this way as one of the few large and major cross-cutting issues central to the national development strategy of poverty reduction brings it strongly into the central national policy arena, and gives access to associated funding priorities. It avoids the temptation to seek single factor explanations, and to see HIV/AIDS as the only major and intractable problem facing the countries of SSA, a danger raised by hints of development reductionism and demographic determinism from international agencies: e.g. “AIDS has become the biggest single threat to the continent’s (i.e. Africa) development” (UNAIDS, 2001, p.16); and also by other independent commentators; e.g. “... today HIV poses the foremost threat to development in Africa” (Poku, 2001, p.193).

The cross-cutting integrated approach taken by Tanzania, by contrast, certainly negates accusations of denial at the political level, moving it more towards Uganda’s up-front approach, epitomised by President Museveni’s frankness about high-risk sexual behaviour (echoed also by the Prime Minister of Mozambique’s recent call: “Africa must start talking about sex” (Mocumbi, 2001)), than to South Africa’s notorious culture of denial from the top political level. Political leadership is clearly important, but not in itself sufficient to raise awareness and acceptance of the

nature and seriousness of the problem by the population at large, where denial and silence remains strong responses, especially in rural areas.

The more open approach of government also signals that HIV/AIDS is being viewed primarily a development problem rather than a health problem directly, and makes explicit the presumption of a strong relationship between HIV/AIDS and poverty. This relationship has two rather different but interrelated dimensions:

- In the most obvious effect, it seems to differentiate between individuals and households within any community between HIV+ and HIV- individuals and households in terms of household labour, access to land, and access to schooling as a result of additional household labour needs as carers or producers. Falling production will normally mean falling incomes, including money to pay school fees. As the disease progresses the HIV+ households become progressively poorer, and may be caught in a downward spiral of lower labour inputs leading to lower production leading to poorer nutrition leading to lower production. By contrast, other local households not similarly affected by HIV/AIDS may, in certain circumstances be in position to benefit in terms of gaining access to additional land, thus further exacerbating intra-community economic differentiation.
- The second dimension is evident at the aggregate scale in falling incomes: the World Bank has calculated that at the national scale for African countries per capita income growth is reduced by 0.5-0.75 per cent per year in countries with adult HIV prevalence rates of 10-13 per cent (World Bank, 1997), and within each country regional production levels may fall as a function of rising HIV/AIDS prevalence.

However, in each of these two dimensions, differentiation and decline, HIV/AIDS is not normally the sole or even the major cause of the differentiation or income decline. As Emma Guest argues, based on case studies from South Africa, Zambia and Uganda of *Children of AIDS: Africa's orphan crisis* (Guest 2001), "It's poverty and not AIDS that is the overriding determinant of whether a child is adequately cared for" (p.122). At a regional scale, Ainsworth and colleagues (2000) have provided strong evidence from Kagera Region, Tanzania, for poverty being more important than orphanhood as a cause of school dropout for 11-14 year olds, and this is echoed in our own findings (see Workshop Papers 5 and 6). Falling national incomes or national income distribution may be more sensitive to commodity price reductions or to the effects of structural adjustment programmes than they are to HIV/AIDS effects. HIV/AIDS may have a strong propensity to greatly exacerbate many existing problems of production, health and education, and to greatly raise the costs of ameliorating them, but the fundamental causes of the problems may not be AIDS-related, but poverty-related. In this respect linking the attack on AIDS directly to poverty alleviation strategies seems to have obvious advantages, and, we would argue, have greater prospects for reducing the scale and impacts of the epidemic.

The integration of HIV/AIDS research and analysis into the broader poverty alleviation agenda also brings methodological advantages, in that it allows studies to identify contexts of vulnerability and risk, and how individuals and communities cope with risk, that are now central in development studies, as epitomised by Chapter 8 of the 2001/2 World Development Report: *Helping poor people manage risk* (The World Bank, 2001, pp.135-159, including a text box on *AIDS and poverty*, p.139). This poverty alleviation thrust in international development studies into the 21st Century, as a reaction to the tendency to increasing inequality and social exclusion evident in many structural adjustment programmes of the 1990s, has brought the focus to critical bottlenecks and constraints on development, of which illness and disease, including HIV/AIDS, will always be prominent, and in some cases dominant. Christopolos, Farrington and Kidd (2001) for example, in reviewing rural extension needs as part of a Rural Livelihoods programme of DFID, identify that "HIV/AIDS is a feature of systemic crisis of critical importance for development in general... exacerbates existing problems such as labour bottlenecks and problems of rural

women....agricultural development and food security are key areas that need to be monitored with reference to the impact of HIV/AIDS” (p.25). They then go on to consider some of these impacts in the framework of seeking to establishing more sustainable livelihoods in vulnerable populations. Thus, to make a stronger analytical linkage between the demographic and developmental approaches to HIV/AIDS affected populations will bring new insights, not only from new empirical material and relationships, but also from new methodologies for approaching the problems of affected populations.

A Social Demand Survey

The examination of levels and patterns of social demand school attendance, non-attendance and drop-out, why children do or do not attend school and the effects that HIV/AIDS is having on school attendance, required a field survey of school children, as no appropriate data are currently available from other educational or demographic sources.

The sample

a) The children

The primary sample for the social demand survey was drawn from school enrolment registers in 12 schools in 2 regions of Tanzania, Iringa and Dodoma. It was a purposive sample designed to identify different enrolment categories – the regular attenders, irregular attenders, dropouts and never attenders – and to be able to identify the different demographic, educational and economic characteristics of each of individual children and their households for these three groups. Thus the sample is **not**:

- a representative sample of children: the data cannot be used to identify or compare enrolment rates or characteristics of the children of Tanzania, or even of these two regions.
- a representative sample of households: though the sampled children were traced to their households and household data were collected, there is no sense of these households being used to depict the overall pattern of economy or demography in the regions chosen.

What can be compared are the characteristics of the children in the three primary groups as defined by the school register. In each school in Tanzania school enrolment and attendance registers are fairly assiduously and carefully kept, and can be used as a basis for drawing a sample of schoolchildren for a range of purposes, bearing in mind the objectives of any selection. In this case the primary purpose of the social demand survey was to try to begin to estimate the effects of adult HIV/AIDS mortality and morbidity on school attendance and progression as a complement to the macro-demographic estimation of demand from census and other HIV/AIDS specific estimates of the size of the school-age cohorts. The primary assumptions were that there would be a differentiation between children from households affected by HIV/AIDS and those not affected. In affected households children would be expected to be disproportionately more likely to be absentees and, even more critically, disproportionately more likely to drop-out. To what extent can these assumptions be confirmed? Would it be possible to estimate the effects of HIV/AIDS on schools enrolment and progression?

In consultation with the District Education Offices in Iringa and Dodoma, 12 primary schools were selected and their Headteachers approached for access to the class registers. In no case was this access refused, and in most cases up-to-date and apparently complete registers were made available to the research team.

Initially the plan was to interview equal numbers of index children from each of the 4 attendance groups (regular, irregulars, drop outs and never attenders). The 4 groups were defined as follows:

1. Regular attenders (children now in primary school who have missed < 15% of school days in the 2 full months preceding the survey)
2. Irregular attenders or absentees (children now in primary school who have missed $\geq 15\%$ of school days in the 2 full months preceding the survey)
3. Dropouts (children now 5 to 17 who have missed school either in one continuous period for the last 2 months, or who have completely stopped attending school at any time in the past)
4. Never attenders (children now 7 to 17 who have never attended school)

The first 3 groups were identified through school records, and the never attenders group through word of mouth (asking teachers and children if they knew anybody who had never attended school). Index children were then followed to their homes, where a guardian and another child from the household were also interviewed (here called 'sibling' – but could be any eligible child from the household). The second child preferably, but not necessarily, had a different attendance status, to enable us to explore reasons for intra-household differences in school attendance. If there was no eligible child in the household, no second child was interviewed from that household, but the data collected would count as a full household.

Since it proved very difficult to find both dropouts and never attenders (and, at some schools, even irregular attenders) the sampling strategy was altered after the second school. To reduce the number of dropouts and never attenders to be found to an achievable number, dropouts and never attenders were now regarded as one category of children who were not attending school, and every interviewer (of whom there were five) sought to identify at least 3 irregular attenders, 3 drop outs or never attenders in each school catchment. The idea behind it was that of the minimum of 7 children and maximum of 16 children interviewed by each interviewer in each school a sizable number, i.e. 6 should be problem children (i.e. not regular attenders).

Also, since the same information was collected on index children and siblings it was decided that the sampling could include either dropouts or never attenders as index children or siblings (so, if an interviewer accompanied a regular attender home from school and found a never attending sibling in the house, this sibling would count as a valid case for the sample).

In practice, to get a coverage of all standards, teams of interviewers were allocated a certain standard on each day of the survey in a particular school. They would study the attendance registers to identify irregular attenders and drop outs and would be accompanied by a teacher into the classroom of a certain standard, seeking for the identified children. Many would not be present, in which case classmates were asked if they knew where a particular child lived, and if they could walk the interviewer to its home. Many dropouts could not be interviewed, because they had moved away (from rural areas normally to town). Regular attenders were then searched for those who lived relatively near the 'problem child' identified, to make the logistics easier. However, households were never interviewed in large clusters. Not more than two neighbouring households were interviewed.

On the last day of interviewing in a school a balance was drawn if enough problem children had been interviewed, and children of a particular attendance status were targeted if targets had not been met. On return from the households the attendance status of 'siblings' was noted of from the attendance registers. Sometimes (particularly in urban areas) children from the same households would be attending different schools. One interviewer would be sent to the other school, to view their attendance records.

At most schools there would not be enough dropouts that could be either identified from the attendance registers or else found to interview. The next step would be to ask children, teachers and parents if they knew any dropouts or never attenders, and to take the interviewers to their houses. If this method failed the team would be asking people on the streets or in the fields to guide interviewers to 'problem children'.

b) The schools

The schools were selected on criteria associated with the known geography of HIV/AIDS in Tanzania. Clearly a national sample would have been ideal, but was beyond the resources of this study. In order to begin to estimate the effects of HIV/AIDS it would be necessary to select areas that were fairly characteristic of the country as a whole. It is known from the various sources of HIV prevalence data that prevalence rates vary very considerably across such a large country, are still rising in some regions, but are known to be falling in some (e.g. Kagera in the extreme north-west on the border with Uganda) and fairly stable in others (e.g. Mwanza along the southern shore of Lake Victoria). Iringa is known from the published data to have above average prevalence, and Dodoma was expected to have below average prevalence; the 1999 prevalence rates were 14.7 percent and 14.4 percent for male and female blood donors respectively in Iringa and 5.0 percent and 6.7 percent in Dodoma (Ministry of Health Tanzania Mainland, 1999, p.18-19). Selecting these two regions provided a range of expected experience of HIV/AIDS, and both were relatively accessible to the project enumerators from Dar es Salaam.

Within the regions it was also expected that there would be a clear geography of HIV/AIDS. In early stages of the epidemic, and in low prevalence areas, prevalence rates in towns are usually higher than in rural areas. As the epidemic develops however, the rural-urban gap narrows, and may even be reversed as the syndrome is spread to rural populations. Typically, however, within rural areas there is a characteristic difference between roadside settlements and surrounding areas, with higher rates in roadside settlements than in the more remote areas away from main roads (Barongo et al., 1992; Mnyika et al., 1994).

Thus in each of the two regions, schools (2 each) were chosen for an urban location, a roadside settlement and a rural, off main road area. The sample size and structure from each school is noted below:

School	Region	Location	Regular attender	Irregular attender	Drop outs	Never attender	Total
Mwaja	Iringa	on the road to Dar es Salaam (45 km east of Iringa Town)	20	4	6	5	35
			57.1%	11.4%	17.1%	14.3%	100.0%
Kiponzelo	“	rural (60 km southwest of Iringa)	19	11	3		33
			57.6%	33.3%	9.1%		100.0%
Tanangozi	“	on the road to Mbeya (30 km south west of Iringa)	16	11	10	6	43
			37.2%	25.6%	23.3%	14.0%	100.0%
Mgama	“	rural (44 km south of Iringa)	18	12	5	2	37
			48.6%	32.4%	13.5%	5.4%	100.0%
Mlandege	“	town, worst school in Iringa	11	8	16	3	38
			28.9%	21.1%	42.1%	7.9%	100.0%
Gangilonga	“	town, best school in Iringa	10	11	10	5	36
			27.8%	30.6%	27.8%	13.9%	100.0%
Bahi Misheni	Dodoma	on the road and railway line to Manyoni (West of Dodoma Town)	8	13	8	8	37
			21.6%	35.1%	21.6%	21.6%	100.0%
Amani	“	town, worst school in Dodoma	16	9	9	4	38
			42.1%	23.7%	23.7%	10.5%	100.0%
Chalinze Barabarani	“	on the road to Dar es Salaam (east of Dodoma)	7	22	6	5	40
			17.5%	55.0%	15.0%	12.5%	100.0%
Kisima Cha Ndege	“	rural (north of Dodoma)	16	9	2	10	37
			43.2%	24.3%	5.4%	27.0%	100.0%
Handali	“	rural (south of Dodoma)	16	14	2	4	36
			44.4%	38.9%	5.6%	11.1%	100.0%
Makole	“	town, best in Dodoma	12	11	7	7	37
			32.4%	29.7%	18.9%	18.9%	100.0%
Total			169	135	84	59	447
			37.8%	30.2%	18.8%	13.2%	100.0%

c) The survey instruments

The data were collected using several instruments: a guardian's questionnaire (including general information on the household composition and activities and specific information on the education of all children), a children's questionnaire, and a more qualitative 'mapping' exercise with selected children (explores in Workshop Paper 6), and a head teacher's questionnaire. The results discussed here are derived from the larger surveys of household and children's characteristics. Overall, 38% of the sample were regular attenders and 30% irregular were attenders, with 19% dropouts and 13% never attenders.

One key issue for the survey and the results concerns the case-finding of HIV/AIDS. It was not possible – technically or, more powerfully, politically - to formally test children or adults for HIV/AIDS, or even to assume accuracy of direct questions about HIV-status, for the living or the dead. Recorded death itself was inevitably more easily and more correctly identified, and, as shown below, there were very high rates of adult mortality, i.e. of parents, rates that can be largely attributable to HIV/AIDS. However, as noted above, since the main concern was not for HIV/AIDS as such, but for the effects of high rates of death and illness on school enrolment, indirect estimations (e.g. on reported causes of death, on prolonged illness) allowed the key patterns of differentiation to be identified.

Some Survey results

Clearly a large amount of data has been collected, and all of it cannot be reported here. Table 2 offers a summary of bivariate cross-tabulations, giving the direction and significance of the relationships, of a range of independent variables with the key dependent variable of dropout against attendance. One key aspect, of orphans and orphanhood, is most fully discussed in Workshop Paper 5. For the purposes of this overview paper, however, two particular aspects warrant immediate attention: the factors, including illness and HIV/AIDS, differentiating attenders and dropouts; and indications of the local geography of HIV/AIDS.

Table 2 Factors Related to Drop Out
(significant and not significant relationships)

type of variable	variable	boys 215	girls 174	both 389	N
children's characteristics	being of a gender	↑	↓	N/A	
	3 or more years late for age in school	(↑)	↑	↑	155/363
who is head of hh	Father	(↓)	↓	↓	200/388
	Mother	(↑)	(↓)	(↑)	86/388
	aunt or uncle	(↓)	↑	(↑)	30/388
hh composition	if both parents alive, living with 1 or none of them	(↑)	↑	↑	90/271
	3+ hh members >=18 years	↓	(↓)	↓	147/386
death and illness	orphanhood	(↑)	(↑)	(↑)	105/307
	at least one elder died of AIDS/TB in last 5 years	(↓)	↓	(↓)	41/389
	at least one elder may have died of AIDS/TB in last 5 years	(↓)	(↓)	(↓)	79/389
	at least one parent died of AIDS/TB in last 5 years	(↑)	(↓)	x	26/389
	at least one parent may have died of AIDS/TB in last 5 years	(↑)	(↓)	x	45/389
	whether at least one parent has poor or very poor health	(↓)	(↓)	(↓)	21/387

type of variable	variable	boys 215	girls 174	both 389	N
hh economic status	any employees living in the hh	↓	(↓)	↓	33/388
	all other economic variables	x	x	x	
children's work	child is 1 st or 2 nd most important domestic contributor	(↑)	↑	↑	119/389
	child is 1 st or 2 nd most important income contributor	(↑)	x	(↑)	34/388
parents' education	father ever been to school	(↓)	(↓)	↓	181/206
	father's educational achievement	(↓)n	(↓)n	(↓)n	
	mother ever been to school	(↓)	↓	↓	214/279
	mother's educational achievement	x	(↓)n	x	
education of other children in hh (7-17 years)	any other drop outs in hh	↑	↑	↑	13/388

N/A=not applicable

↓ and ↑ =significant at least at the 0.05 level

(↓)n and (↑)n = not tested, because shows trend

x = no relationship

(↓) and (↑) =relationship exists, but not significant

1) Factors affecting attendance and dropout.

There is no evidence from the data that children whose households have been affected by AIDS/TB are more likely to drop out of school; conversely, they are marginally less likely to be dropouts. However differences are not significant (tables 3 and 4). There is however evidence to support the view that even in these high HIV/AIDS prevalence populations a household's economic situation is related to drop out; for instance in households with employed labour drop out is unlikely to occur (table 5). Other factors that do matter for drop out are household composition; children whose biological parents are alive, but who live with one or none of them are more likely to drop out; the child not living with both parents appears to be as important as orphanhood as a reason for drop out (table 6, and fully discussed in Workshop Paper 5).

Children who live in a household headed by their father are less likely to drop out (table 7). If there are 3 or more adults (≥ 18) in the household, children, especially boys, are less likely to drop out; extended families appear to provide a stronger supportive environment (table 8). However, girls who live in a household headed by their aunt or uncle are more likely to drop out; this suggests that they may have been taken into the household for domestic labour (table 9).

Being the first or second most important contributor to the household income is an important reason for drop out, especially for girls (table 10). However, contrary to popular perception of the scale of domestic commitment, only few children were found to be first or second most important income contributors. These were mainly boys, and it did slightly increase their propensity to drop out (table 11). Parents' education is important. Girls in particular appear to benefit from their mother's education (table 12).

The main reasons for drop out as stated by parents and children are rather different (table 13). Orphanhood is not perceived to be a major reason for drop out, neither by parents nor by children; nor is caring for sick relatives.

Overall, a complicated picture emerges from these initial findings. There is no clear relationship between HIV/AIDS and dropout, and economic and social factors remain important differentiating variables, as they are in non-AIDS affected populations. Orphanhood itself is not a clear predictor of dropout, and there is much to suggest that separation, whether as a result of traditional patterns of kin 'fostering' of children, or as a result of well established patterns of labour migration of parents, often temporary and circular and usually by fathers, may as likely or even more likely to be a trigger for dropout. Development patterns and poverty effects, actual or perceived, do not lose their importance for school attendance in HIV/AIDS affected populations.

Table 3 Whether at least one parent died of AIDS/TB in last 5 years and drop out

	in school	drop out	
no parent died of AIDS/TB	284	79	363
	93.1%	94.0%	93.3%
1+ parent died of AIDS/TB	21	5	26
	6.9%	6.0%	6.7%
	305	84	389
	78.4%	21.6%	100.0%
	100.0%	100.0%	100.0%

not significant

Table 4 Whether at least one elder died of AIDS/TB in last 5 years and drop out

	in school	drop out	
no elder died of AIDS/TB	269	79	348
	88.2%	94.0%	89.5%
1+ elder died of AIDS/TB	36	5	41
	11.8%	6.0%	10.5%
	305	84	389

not significant

Table 5 How many employees there are in the hh by drop out

	in school	drop out	
at least one	30	3	33
	9.9%	3.6%	8.5%
none	274	81	355
	90.1%	96.4%	91.5%
	304	84	388
	100.0%	100.0%	100.0%

significant at the 0.05 level, one-tailed test

Table 6 Living arrangement and drop out

	in school	drop out	
living with both parents	154	28	182
	52.2%	34.1%	48.3%
at least one parent dead	76	29	105
	25.8%	35.4%	27.9%
Living with one or no parent, no one dead	65	25	90
	22.0%	30.5%	23.9%
	295	82	377
	100.0%	100.0%	100.0%

significant at the 0.02 level, two tailed test

Table 7 Whether father is head by drop out

	in school	drop out	
Father head	167	33	200
	54.9%	39.3%	51.5%
other head	137	51	188
	45.1%	60.7%	48.5%
	304	84	388
	100.0%	100.0%	100.0%

significant at the 0.01 level, two-tailed test

Table 8 Number of household members 18 years or older by drop out and sex of child

		in school		drop out	
Girls	1-2	92	20	112	
		62.6%	76.9%	64.7%	
	3+	55	6	61	
		37.4%	23.1%	35.3%	
		147	26	173	
		100.0%	100.0%	100.0%	
Boys	1-2	88	39	127	
		56.1%	69.6%	59.6%	
	3+	69	17	86	
		43.9%	30.4%	40.4%	
		157	56	213	
		100.0%	100.0%	100.0%	

for girls not significant,

for boys significant at the 0.05 level, one tailed test

Table 9 Whether aunt or uncle are head by drop out and sex of child

		in school		drop out	
Girl	aunt or uncle head	4	4	8	
		2.7%	15.4%	4.6%	
	other head	143	22	165	
		97.3%	84.6%	95.4%	
		147	26	173	
		100.0%	100.0%	100.0%	
Boy	aunt or uncle head	18	4	22	
		11.5%	7.0%	10.3%	
	other head	139	53	192	
		88.5%	93.0%	89.7%	
		157	57	214	
		100.0%	100.0%	100.0%	

girls: significant at the 0.02 level, two tailed test

boys: not significant

Table 10 Contributions to domestic labour and drop out**a) girls:**

	in school		drop out	
no contribution or 3+ contributor	100	10	110	
	68.0%	38.5%	63.6%	
1st or 2nd most important contributor	47	16	63	
	32.0%	61.5%	36.4%	
	147	26	173	
	85.0%	15.0%	100.0%	
	100.0%	100.0%	100.0%	

significant at the 0.007, two tailed test

b) boys:

	in school	drop out	
no contribution or 3+ contributor	120	39	159
	75.9%	68.4%	74.0%
1st or 2nd most important contributor	38	18	56
	24.1%	31.6%	26.0%
	158	57	215
	73.5%	26.5%	100.0%
	100.0%	100.0%	100.0%

not significant: significant at the 0.18 level, one tailed test

Table 11 Income contributions and drop out

a) girls:

	in school	drop out	
no contribution or 3+ contributor	135	24	159
	91.8%	92.3%	91.9%
1st or 2nd most important contributor	12	2	14
	8.2%	7.7%	8.1%
	147	26	173
	85.0%	15.0%	100.0%
	100.0%	100.0%	100.0%

not significant: significant at the 0.65 level; one tailed test

b) boys:

	in school	drop out	
no contribution or 3+ contributor	146	49	195
	74.9%	25.1%	100.0%
	92.4%	86.0%	90.7%
1st or 2nd most important contributor	12	8	20
	60.0%	40.0%	100.0%
	7.6%	14.0%	9.3%
	158	57	215
	73.5%	26.5%	100.0%
	100.0%	100.0%	100.0%

not significant: significant at the 0.12 level; one tailed test

Table 12 Mother ever been to school (only mothers who are in same hh as kid), by sex of kid

		in school	drop out	
Girls	been to school	85	6	91
		78.0%	46.2%	74.6%
	never been	24	7	31
		22.0%	53.8%	25.4%
		109	13	122
		100.0%	100.0%	100.0%
boys	been to school	93	30	123
		80.2%	75.0%	78.8%
	never been	23	10	33
		19.8%	25.0%	21.2%
		116	40	156
		100.0%	100.0%	100.0%

for girls significant at the 0.02 level, two tailed test (Fisher's exact)

for boys not significant

2. The local geography of HIV/AIDS and school attendance

As noted above, there is expected to be a distinctive local geography of HIV/AIDS, that can be revealed by the survey data, and the sample structure was derived using assumptions about that local geography that have to some extent been confirmed by the results, remembering that the children do not constitute a representative sample of the population of either region.

Levels of death for both mothers and fathers are much higher in Iringa than Dodoma: 39% of Iringa children had at least one dead parent (33% of fathers and 16% of mothers were dead); in Dodoma 18%, about half the Iringa proportion, had at least one dead parent (15% of fathers and 7% of mothers were dead). This was the expected relationship, given the background indications that were used to select these two contrasting regions, that Iringa has a much more seriously adverse HIV/AIDS prevalence than Dodoma, and these parental deaths confirm the relative importance. In Iringa 28% of children lived in households where one or more elders may have died of AIDS/TB, given estimates based on identified causes; this proportion was only 13% for Dodoma.

The geography of these deaths seems to have been different in the two regions. In Iringa, the highest proportion of deaths was recorded for the rural (45% of children had experienced the death of a parent), rural on the road (46% of children) but only 26% for the urban sample. For Dodoma it was the urban sample that recorded the highest proportion of orphans (28%), but only 9% for rural sample and 18% for the rural on the road sample. This is consistent with the pattern of higher urban prevalence in the earlier, lower overall phase of the epidemic, and higher rates in roadside settlements than in rural areas, but with higher rural than urban rates as the overall incidence grows and spreads.

By contrast, levels of parent/child separation and associated migration are rather similar for both regions. Of those still alive (i.e. discounting those identified as dead), 28% of fathers and 13% of mothers in Iringa and 28% of fathers and 19% of mothers in Dodoma were 'living elsewhere'.

When parental status ('living with index child', dead, 'living elsewhere') is cross-tabulated with the 4 school status categories of the 429 children (to include index children + siblings), the relationships are as expected. The proportion of Iringa fathers who are dead is highest for dropouts and lowest for regular attenders, and for mothers the lowest proportion is for regular attenders, but highest for irregular attenders. In Dodoma the lowest proportion of dead fathers is among the irregular attenders, but dropouts have the highest proportion, and for mothers the numbers are small (16 deaths altogether) with similar proportions in all four school status groups. Overall regular attenders are more likely than dropouts to have parents alive and to be living with them.

A pattern of difference, however, is clearer with parents living elsewhere. Of the 142 fathers still alive in Iringa, 21% of the 68 regular attenders, 31% of the 39 irregular attenders and 40% of the 25 dropouts are living elsewhere; for the 181 fathers still alive in Dodoma, these proportions are 34%, 32% and 50% respectively. There seems to be a rather similar pattern of contrast between regular attenders having a lower level of separation than dropouts. The proportions of absent mothers are smaller (13% of Iringa mothers still alive and 19% of Dodoma mothers still alive), and the relationship with education status more mixed (14% for regular attenders, 22% for irregular attenders and 11% for dropouts). These comparisons seem to suggest that separation of parents and children is as critical as parental mortality for differentiating regular attenders from dropouts.

It is known that there is a wide range of HIV-seropositivities within Tanzania, though spatial data are very patchy, and that range may be widening, at the regional and local scales. While the evidence above suggests that HIV/AIDS may have some direct importance in differentiating the

geography of primary school enrolment, it does not dominate the patterns of attendance and dropout, but has to be seen as an additional complication for established patterns associated with poverty and household size and labour requirements.

Conclusion: HIV/AIDS, poverty and the social demand for schooling

The emphasis in this workshop paper has been on social demand aspects of the broader project, and on the difficulties surrounding the estimation of the effects of HIV/AIDS on primary school enrolments from a sample of households in two regions of Tanzania. It has been shown that the effects are far from clear cut, and very much interwoven with the more established economic, social and cultural factors affecting school enrolment, including the locally variable geographies of illness and disease as well as economic and livelihood conditions. From a purely methodological perspective, the work has identified the need to link the different demand estimation methodologies (demographic and social/developmental) to approach a full appreciation of the factors affecting school enrolments and non-enrolments as a basis for setting and achieving ambitious expansion targets. It is clear from the evidence provided by the survey that the additional effects of HIV/AIDS on primary school enrolment and dropout are not large, even in populations with very high HIV-seropositivities as in Iringa, and cannot be separated from the broader impacts of economic and household variables. Indeed they seem to be of lesser importance than these non-HIV/AIDS variables, but are not insignificant.

These results from the social demand survey can now be linked back to demographic and policy modelling, as discussed in Workshop Papers 2 and 3. The purely demographic modelling stands in its own right, with no necessary or direct relationship between cohort effects on surviving children and HIV effects on adults. This complementary social demand survey evidence exhibits no clear or direct relationship between HIV-positivity and enrolment and dropout. However, HIV/AIDS does have some small effect on actual local demand, but this seems to be so bound up with household-scale variables of poverty, and inequalities in livelihoods and labour availability, that it cannot be separately identified. There is a strong sense that levels of poverty and the success of poverty alleviation strategies on household labour allocation patterns are of much greater significance for future levels of school attendance and dropout and the achievement of national targets than is the level of HIV/AIDS. Rates of school enrolments and dropout are much more likely to be sensitive to indices of change in incomes or in labour demand than they are to changes in HIV-rates.

HIV/AIDS is not to be ignored or down-played as a factor affecting the education and thus the life chances of children in Tanzania, or anywhere else in Africa: it can have a devastating effect on affected households. Efforts to control the epidemic, including those which are themselves much affected by school-based education programmes, are necessary and need to be expanded. However, the thrust of the overall Tanzanian approach, to see the problem of HIV/AIDS as part of a wider national problem of poverty and the need for its alleviation, is further supported by the evidence of this paper. HIV/AIDS is viewed in this context as a development problem rather than a narrowly-defined health problem. More directed development programmes and associated higher incomes are probably much more important policy variables than reducing HIV/AIDS rates if Tanzania is to approach its target of achieving UPE within the next 10 years.