Children's Schooling in South Africa:

Transitions and Tensions in Households and Communities

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New educational policies in South Africa have been designed to address the inequities of the former system and to 'provide an education of progressively high quality for all *learners* and in so doing lay a strong foundation for the development of all our people's talents and capabilities, advance the democratic transformation of society, ... [and] contribute to the eradication of poverty and the economic well-being of society ...' (Preamble, South African Schools Act, 1996, Government Gazette vol 377, 15 November, p.2). Specific policies and programmes to address this ambitious directive necessarily have focused on the reorganisation of schools, instructional standards and curricula. Providing schooling for children, however, involves more than just the learning environment of the classroom, but also the home.

Recent research in other parts of sub-Saharan Africa suggests that household resources are not necessarily evenly distributed across members, and that families who are especially economically or socially vulnerable are likely to face difficult decisions over which children should receive how much education (Lloyd and Blanc, 1996; Makinwa-Adebusoye, 1991). These decisions are often linked to particular household structures, which include the number and ages of children, and the support of adults in the household, both socially and economically. The fiscal shortages facing local and national government further contribute to the centrality of household viability and structure to children's schooling (Lloyd, 1994). Educating successively larger cohorts of children has placed tremendous burden on governments.

Governments in turn have increasingly shifted these costs to families, exacerbating the strain on the household economy. The allocation of resources within the family may prove to be a crucial locus of policy evaluation and reform in the education sector: policies and programmes designed to benefit children do so largely through the mediation of parents or other adults in the household. However, as parents decide how many children to have and how well to educate them, the local and national constraints on that decision also must be considered. How does the larger policy and infrastructural context mediate parents' decisions about the number of children they have and the allocation of household resources among them?

In spite of the obvious and important ties between conditions in the community and intra-household resource allocation strategies, little research exists with a multilevel perspective. This paper seeks to fill this gap. Using

data from the Project for Statistics on Living Standards and Development Survey (SALSS) conducted in South Africa in late 1993, and from the 1997 School Register of Needs, we examine how families and households allocate scarce educational resources among children, and how these decisions are shaped by local conditions and national policies.

South Africa is an important case. The relationship between household structure and children's education is a fairly new topic of research in sub-Saharan Africa, where countries are characterised by high fertility, or fertility levels that have begun to decline only recently. However, South Africa has an estimated total fertility rate of between 3.3 and 3.6 (CSS, 1997) and is well on its way through a transition to low fertility levels. The interrelationship between children's education and intra-household dynamics is likely to be different in countries with low fertility (Lloyd, 1994), and South Africa's experience provide a marker of intrahousehold allocation dynamics in the context of fertility decline in sub-Saharan Africa. Additionally, South Africa is in the midst of profound societal restructuring and is struggling with appropriate policy formulation to ensure quality education for its children. While it has a unique educational history, the challenges the country faces are common to many other parts of the developing world.

The paper is organised into four different sections. The first provides an introduction to the conceptual issues and empirical findings on the family-children's education link, and also presents an overview of educational policies and history of South Africa. We then describe the educational patterns for children in South Africa, and their association with family structures and household forms. We pay particular attention to transitions in the educational system, specifically, entry into and exit from schooling, and the pace and progress of children through primary and secondary levels.

We also describe in this section the geo-political history of education through the homeland system, its ties to quality, and the implications for children's schooling. Our final analytic section considers these relationships within a multivariate, multilevel framework. We conclude with a discussion of the results, encompassing theoretical implications for demographic change, and practical applications for schooling policy in the context of household heterogeneity and rapid societal transformation.

BACKGROUND

Conventional wisdom holds that an inverse relationship exists between the number of children in the household and the resources allocated to each one (see King, 1987). That is, parents who decide to have few children are more likely to invest more resources in each child. In sub-Saharan Africa, family and kin structures pose several challenges to this expectation. Montgomery et al (1995) summarise these as (1) support provided through brothers and sisters; (2) child fosterage, and especially the movement of children for the purposes of attending school; and (3) the mechanisms through which resources are brought into the household, and the division of financial responsibility for children.

The contribution of older children to the education of younger children carries several implication for the relationship between education and family size. First, older children may be required to leave school early to support other children in the household. Second, a large number of children in a household may not dilute resources, but contribute to them, and so a positive relationship with the number of children and education may prevail. Especially in South Africa. where levels of male labor migration are high, remittances undependable, and conjugal unions weak, educational opportunities often become contingent upon sibling economic support (Neihaus, 1989; Stadler, 1994, pers. comm, 1996). Child fosterage also may weaken the relationship between the allotment of resources per child and the number of children. Children may be sent to live with other kin members for a variety of reasons, but often it is because of economic constraints in the child's household of origin, or because of educational opportunities elsewhere. Finally, household budgets are seldom maintained jointly. Income often may be generated individually, and allocated according to distinct financial responsibilities, including the support of children. For example, women are often solely responsible for the maintenance of their children, while fathers' financial responsibilities may be largely independent of the number of children (e.g., rent, utilities). The disparate, and often unequal, realms of financial decision-making between mothers and fathers may further erode the relationship between the number of children in a family and the resources they are provided (Caldwell, 1987; van de Walle and Foster, 1990)

Testing the relationship between family size and structure and the investments in children's education is made particularly challenging because of data constraints. Most demographic surveys collect educational or health information only on children present in the household. Since a substantial portion of children in the region do not reside with their biological mothers, we know little about the families of origin for in-fostered children, or the health or well-being of children who are fostered-out. Similarly, heads of households cannot be assumed to be mothers or fathers. These limitations make challenging analyses of the links between fertility and investment in children. Several exceptions to these data limitations exist, notably the Ghana and Côte d'Ivoire Living Standards and measurement surveys (LSMS) of the World Bank, which collected detailed information on education and health of all children of mothers in the sample. However, the fact of shifting household compositions itself underscores the importance of accounting for changing family structures, particularly its effect on children's education and health.

Reviews of the literature by Kelley (1995), Lloyd (1994) and DeLancey (1990) find mixed results for the effect of family size on children's education in sub-Saharan Africa. The mixed results may be due to the changing valuations of education in various settings. Kelley and Lloyd both hypothesise that the negative effects will be felt the least in areas that have low levels of socioeconomic development or are in the early stages of the fertility transition, and that urban areas will be more likely to show a negative relationship, while rural areas will show a positive one. The hypotheses are largely supported by empirical findings. Using data from the Cote d'Ivoire LSMS, Montgomery and his colleagues found a positive relationship between children's schooling and family size in rural areas. In urban areas, however, they found that family size is negatively associated with children's schooling, and that female education is an important factor contributing to this inverse relationship - educated women tend to have lower fertility and make greater investments in their children. Oliver (1995) found similar results for her analysis of Ghana data, demonstrating the important effect of education across generations. She found that women with schooling have fewer children than women with no schooling, and that children of women with secondary schooling have more schooling than children of women who have no schooling.

Only a few studies have looked at the influence of particular family structures on children's schooling. Using data from the Ghana LSMS, Lavy (1992)

found in rural areas a small positive impact of siblings on ever attended school and attainment, and no impact on enrollment. Using the same data, Lloyd and Gage-Brandon (1994) examine the impact of younger and older siblings on girls' schooling as compared to boys' schooling. They find that girls' dropout rates were higher and educational attainment lower when they had younger siblings as compared to boys when they had younger siblings. Their findings suggest that responsibilities to the household by older children, and especially girls for the care of younger children, commence at a relatively early age and may adversely affect educational achievement. Indeed, the hypothesis that households provide educational resources differentially to boys and girls has been considered in a number of studies. The evidence is mixed. Appleton (1995) using similar data from the Cote d'Ivoire, finds an interaction effect between poverty and primary school-leaving examination results; the poorest households had the greatest differentials between girls' and boys' probability of passing the primary school exams. He notes, however, that gender-poverty interaction was not important in explaining the gender gap at other levels. Lloyd and Blanc (1996) investigated the role of parents and finds that their survivorship plays a relatively minor role in children's education, and has no apparent advantage for boys' or for girls' schooling.

Lloyd and Blanc (1996) further consider the household determinants of children's schooling in sub-Saharan Africa using data from the Demographic and Health Surveys of seven countries. These data do not support an analysis of family size and children's schooling directly, because information on all biological children of a given mother or father was not collected. However, the surveys provide insights into the ways in which characteristics of households, or their members influence children's educational opportunities. Their findings show that the education level of the head of the household and the income of the household are more important determinants of children's current enrolment and completing grade four than the number of children living there. The effects, however, varied considerably across countries. In Southern Africa for 10-14 year olds, the number of young children in the household had a significant and negative effect on the completion of grade four. In West Africa, in contrast, no significant relationship was found. They also found that female-headed households were almost universally beneficial for children's education, although the magnitude of the impact varied, a finding consistent with other studies from diverse settings. Lloyd and Blanc suggest that women tend to be more child-oriented in their expenditure

pattern, and as heads of households, they may be freer to exercise those preferences (1996:290).

Few of these studies have been able to evaluate the impact of school accessibility or quality on educational choices in developing contexts. Most studies of quality have generally looked within schools or classrooms. That is, they consider the relationship of quality to the educational outcomes of children in school. While an important contribution to the education literature in diverse contexts, it does not address the implications for children who are not attending, an especially important group in many developing country settings. Does school quality, or the availability of primary or secondary schools have an impact on children's academic enrolment, attainment or achievement? Many studies show that it does not: in US settings, school inputs such as student-teacher ratios, classroom size and expenditures on education have been found to not systematically influence children's educational outcomes, measured in a variety of ways (Hanushek, 1986).

However, recent work has challenged these findings. Card and Kreuger (1996) use data from the US to examine the case of North and South Carolina over the period of time of racial segregation and then integration in schools. They show that as resources into schools increased for blacks in South Carolina, black men's returns to wages converged to that of their counterparts in North Carolina, where schools had not been as under-resourced. Loeb and Bound (1992) also examine aggregate level longitudinal data on the US and find a strong relationship between achievement and school inputs, as measured by student-teacher ratios and term length.

Both these studies suggest that the relationship between quality and educational outcome is likely to be important, but that the unit of analysis, model specification, or statistical power of sample size may produce results that indicate the contrary. School inputs also may be more important in developing country settings than developed (Heyneman and Loxley, 1983). Lavy (1992) shows that the absence of secondary schools in rural Ghana has an adverse effect on children's primary education. Mensch and Lloyd (1997) in their qualitative study find quality an especially important issue for girls in Kenya. Conditions of mentorship, low expectations of achievement by teachers, and an environment of harassment or sexual coercion was associated with low performance and dropout. Fuller (1986) finds in his review that availability of textbooks and educational resources is associated

with student achievement in developing countries. While not all studies have demonstrated this relationship, the evidence suggests that school quality may be important to education, especially educational attainment of children

Recent research in South Africa has taken this possibility seriously. Indeed, the particular educational history of the country provides a unique setting for the evaluation of schooling. Unlike many settings in sub-Saharan Africa, almost all children in the country complete primary schooling. However, only about 30 percent of 20 to 24 year old South Africans complete secondary schooling, a figure weighted heavily by the low levels of attainment of black South Africans who comprise about three-quarters of the population. Thomas (1996), using a variety of data sources, examined the educational levels of adults across generations and found that attainment has risen sharply for blacks and Indians over the last fifty years; although sharp disparities across racial groups still exist, it nonetheless represents a convergence of educational attainment over several decades. Fuller and his colleagues (1996a) concurred with the expansion noted by Thomas. They use the 1993 SALSS to investigate the effect on literacy and numeracy as a result of the massive state expenditures on black education from the late 1970's onward. They find that while attainment had increased dramatically within the black population, literacy had improved only slightly for adults which they attribute to the poor quality of schools for blacks and the turbulence surrounding education over that time period.

Case and Deaton (1996), also using the 1993 SALSS, consider a number of educational outcomes for children. Specifically, they examined the relationship between attainment and enrolment for children and a measure of quality, the 1991 pupil-teacher ratio at the community (magisterial district) level. They found that for blacks students aged 10 to 18, the pupil-teacher ratio was negatively related to educational attainment and to enrolment, but had no effect on whites.

The evidence from South Africa suggests that family constraints and community resources, especially for blacks, are important factors in children's education. However, less attention has focussed on family structure and especially the role of other children in the household. Indeed, because family resources are particularly important for blacks' education, intra-familial allocation of resources for this group may be the critical arena for deciding who receives schooling and who does not. Fuller and Liang (1996b),

for example, found that for low-income black families, the probability of enrollment and the level of educational attainment of the oldest daughter is negatively related to the number children in the household. As measures of household structure, Case and Deaton include household size and whether or not the household is headed by a female.

For blacks, both predictors were found to be positive and significant on children's educational attainment and current enrollment, but insignificant for attainment for whites (enrollment not estimated for the white population). Furthermore, through a series of interactions, they find that family resources and pupil-teacher ratios promote blacks' educational attainment by facilitating their progress through school. The evidence for gender differentiated educational outcomes is mixed. Thomas (1995) finds little evidence of gender disparities in families for the education of children, Case and Deaton also find no systematic relationship, or in some cases, girls are favored, but Fuller and colleagues (1996) found that although black girls had significantly higher educational attainment than boys, they were less likely to be currently enrolled.

Few of these studies have accounted for the fluidity of households in South Africa, and especially the way in which children move, usually through kin networks, to attend schools or further their education. Our study examines the role of household structure with respect to children's education. Specifically, we consider the way in which households may strategically place children with other relatives, the implications of this fosterage for the children, or other children in the household, and how those strategies may be shaped by geography and community educational resources.

SOUTH AFRICA AND THE EDUCATIONAL CONTEXT

South African families and households have had to make decisions about education for children under turbulent and often violent conditions. The white controlled government of the former regime officially classified all people in one of four race groups: white, Indian (or Asian), coloured (of mixed heritage) and black (or African). All areas in the country were segregated by race, and all Africans, about 75 percent of the population, were assigned to one of ten homelands or bantustans, approximately 13 percent of the land. Of these ten homelands, six were accorded some self-governing rights. These areas were considered to be a part of South Africa, but progressing towards

independence, whereby these homelands - and the blacks associated with them - would become countries distinct from South Africa. Four of the homelands had acquired 'independent' status by the 1994 elections, though none of them was officially recognised as such by any country outside of South Africa. The political geography of apartheid was further underpinned by the massive labor migration policies. Homelands were quite literally reserves of cheap labor. Laborers, mostly men, would be hired on a contract basis to work in mines, industry or on white-owned farms. Contracts would last from six months to two years and women would be left in homeland areas, dependent on irregular remittances and subsistence farming on fragile lands. Some Africans were allowed to live in urban areas in townships or 'locations' especially cordoned off for this purpose usually some distance from 'white' urban areas. Blacks were considered guest workers to white areas and allowed to live there only with proper documentation.

South Africa's education system under the former regime embodied and perpetuated the racial inequalities made explicit in the apartheid policies. Racially segregated schools, however, had long been a part of the country's education system through a strong tradition of mission schools. These schools tended to serve the elite black population in English-speaking strongholds, and were estimated to have been reaching only about eight percent of the black education by 1945 (Christie and Collins, 1984). Mission-run schools nonetheless provided strong educational training to their pupils, an education that the Afrikaner-dominated government in the post-1948 era of apartheid saw as at best inappropriate and at worst, dangerous (Molteno, 1984). Policies to entrench the ideology of separate development (that each race or ethnic group should develop separately and at its own pace) were passed into law and included the public takeover or closure of all black mission schools (Urch, 1992; Kallaway, 1984). By the late 1950s, mission schools had been brought under the control of the government[1] and were equipped with a new curriculum emphasising the 'Bantu' culture, ethnic separatism, and a training appropriate for white needs. A gradient of educational resource allocation quickly materialised, benefiting Coloured and Indian schools only to the extent the racial hierarchy explicit in apartheid allowed.

Education thereafter became a focal point of violence and disruption in the struggle to end apartheid. The 1976 Soweto uprising is one of the most infamous, and marked a watershed change in the government's approach to education. In that year, when the government decreed that half of all classes

in black schools should be taught in Afrikaans, 15 000 gathered in Soweto to protest. Police confronted the protesters, violence erupted and police shot and killed several students. The ensuing wave of violence and boycotts which spread through the country was a powerful signal to the government and commenced a massive expansion in education for blacks. Protests and school boycotts, however, continued through the years, and were especially rampant in the mid-1980s with the increased repression of the former regime (Worden, 1994). The slogan 'liberation now, education later' became common cries for student and youth participation in protests (Nkomo, 1990). Even in 1993, the boycotts resulted in a loss of school days equivalent to one school term (Education Foundation, 1994).

School boycotts remain a powerful, and by no means rare, tool of protest by teachers and students, though they tend now to be focussed on specific institutional policies. Many additional challenges remain, however, as the new government is faced with the immense task of integrating a highly fragmented system, and effecting equality of education for all children without lowering standards. This is no easy task. Under the former government, each race had its own department of education, as did each former homeland, for a total of 15 distinct departments (Wedekind, et al, 1994). Racially-based educational resource allocation continued even after the 1976 Soweto riots. In 1994, the year of the first democratic elections, per capita educational expenditure for blacks was only 44 percent that of whites and for blacks in the non-independent homelands, it dropped to 32 percent. Spending on Indian and Coloured education was 93 and 75 percent that of whites, respectively (SAIRR, 1995). The educational experience across the four race groups reflects this disparity. In late 1993, Africans aged 20 and older have on average 6.2 years of education, Coloureds 7.9, Indians 9.6, and whites 11.1, a stark discrepancy though these numbers actually represent a convergence of educational attainment over the last few decades (Thomas, 1996).

DATA

We use the 1993 South African Living Standards Survey (SALSS) conducted by the World Bank and the South African Labour and Development Unit (SALDRU) of the University of Cape Town and the 1997 School Register of Needs Survey to explore the relationships among children's schooling, families, and communities in South Africa.

The SALSS is an integrated nationally representative household survey of 8.848 households drawn from 360 clusters across the country including what were at that time homeland areas. The surveys collected information on every member of the household, representing 43,974 individuals. The sample used a two-stage self weighting design, stratified by statistical region. Clusters were selected with probability proportional to size, and a systematic sample of households were selected from each. Fieldwork occurred August through November of 1993, and changes in sampling due to conditions in the field required the application of weights to the final sample (SALDRU, 1994). The questionnaire included information on all individuals' level of educational attainment. Detailed educational information was collected for children and youth aged 7 to 24 at their next birthdays, including current enrollment, school fees and other expenditures, and reasons for not attending school. Age of household members was collected according to age at next birthday, not current age, in an attempt to minimise underreporting of infants. Since the survey was collected in the latter part of 1993, a majority of individuals will have had their birthdays. One concern of this paper is the progress through educational levels by age and the appropriate age-to-grade educational attainment, ages were adjusted in all analyses by subtracting one from recorded age at next birthday (no birthdates were collected). Table 1 describes the characteristics of the sample of children.

The SALSS also contained a module to collect information on community resources and services for each sampled cluster, including educational institutions. However, as detailed by Case and Deaton (1996), these data are not complete and may introduce bias into analyses. Instead, community information was abstracted from the 1997 School Register of Needs (SRN), a census conducted of all schools in South Africa carried out by the Education Foundation and the Human Sciences Research Council. The purpose of the census was to collect information on schools throughout the country to facilitate planning. Information included location and type of school, number and types of classrooms, condition of building(s), including sanitation and electrification, and the total number of students attending the school and the numbers of teachers instructing them. No student outcome information such as pass rates or test scores is currently available, although these will be a part of future data gathering activities. An evaluation of the school census conducted by researchers at the University of the Orange Free State showed high levels of coverage and accuracy on recorded information (Shephard,

pers. comm). In order to link the census data to the individual level data, the census school-based file was aggregated to the magisterial district level (an administrative boundary equivalent to a county in the US), the lowest level for which common geographic codes existed between the two sources of data.

In total, 20 000 schools were merged onto the SALSS, representing 185 magisterial districts[2]. Using data collected approximately three years after the individual level information is of course not ideal. However, the period of time between late 1993 and late 1996 was a period of very little change in the distribution and condition of schools. Less can be said about the numbers of teachers and students. Racially-based admission policies were disappearing, and mobility was no longer impeded. Geographic criteria are rarely applied to students' admission to a particular school (based increasingly on economic and achievement standards), and it was possible for students to move anywhere in the country, or travel any amount of distance locally, to attend a preferred school. Similarly, the distribution of teachers may have been affected by changes in conditions of employment transpiring between 1993 and 1996 (Bot, 1996:6). These issues are considered in more detail below. However, the census represents the first comprehensive census of schools in the country. Children's schooling is a function of community conditions as well as familial or individual attributes, and these data are the first to provide comprehensive detailed information on school distribution and infrastructure in the country.

PATTERNS OF CHILDREN'S EDUCATION IN SOUTH AFRICA

Education in South Africa in 1993[3] began at the age of 6 or 7 for most children, though schooling was not compulsory for black children until 1996 (South African Schools Act, 1996:6). Primary consisted of seven years beginning with sub A and sub B, and continuing through standards one through five. Standard six marked the beginning of junior secondary, standard eight senior secondary, and completion of standard 10 terminated secondary schooling. Yearly examinations determined the progress of each student to the next standard. At the end of standard ten, all students take a national 'matric' exam, the results of which determine their eligibility for universities.

We use several measures of children's education in our analysis to reflect this system: current enrolment, number of years of education, standards

completed, and transitions of completed primary and secondary schooling. Current enrolment was collected for 16,894 persons currently aged 6 to 23 at the time of the interview. The high cutoff age provides for an assessment of the late ages of primary and secondary enrollment for blacks and coloureds; for whites and Indians, enrolment at older ages is more likely to indicate post-secondary education. We have operationalised educational attainment in two ways. First, we have coded education as years of education, since some of the educational categories on the SALSS questionnaire indicated multiple years of schooling, and it is an approximation of the years of completed education. Since in some instances a measure of completed Standards (which is not equivalent to the years of schooling) is a more intuitively appealing measure, we also coded a variable indicating the standard completed. Information about failed or repeated grades was not available and remains unaccounted for in either measure. The variable indicating completed primary was coded one for all those who stated they completed standard five, zero otherwise. Similarly, for completion of secondary, those who completed standard 10 or higher were coded one, zero otherwise. In the latter measurement, those who may not have completed standard ten, but completed some other auxiliary degree after completing some secondary education were also coded as one.

Unlike many other sub-Saharan African countries, most South African children complete primary education. However, children of different race groups accomplish this at different speeds, and the pathways through the education system become increasingly divergent through secondary. For example, the probability of a white student completing primary is .96, for blacks it is .83; the probability of completing secondary is .80 for whites, and only .24 for blacks[4]. The patterns shown in graph 1 reflect this differential rate of progress. At early ages, the four race groups do not appear to diverge substantially in levels of educational attainment. However, by the age of 13, when students should be completing primary school, or standard five, a notable differential by race appears. The gap in educational attainment widens with age, as blacks seem to plateau with not more than a standard six education. Coloureds fare slightly better, though still do not on average complete secondary school. The wide age gap is apparent in classrooms, as demonstrated in the frames in graph 2. They show the age distribution by race of students currently enrolled who have completed lower primary, that is they are in the first year of upper primary. At this level, students should be age 11 or 12, and for Indians and Whites. a majority are. However, the age range for blacks, and to a lesser extent also for coloureds, is greatly dispersed. Eleven

and twelve year olds make up only 36 percent of black children who completed lower primary and continued on in school, and more than 10 percent are age 15 and older.

The charts only show one dimension of the picture, however, since these are only enrolled children. Enrolment rates, like the attainment levels, are nearly universal for all race groups at early ages, and for whites and Indians it remains high through the older ages until about the time of completed secondary. Blacks and coloureds begin to drop off in enrollment at about the ages of 14 or 15 (see graph 3).

The system of apartheid has clearly left a legacy of educational inequality. Parents or other adult members had to make difficult decisions about who would go to school and for how long. We hypothesise that these decisions were influenced by social and economic resources available within the household and larger kin networks, and conditioned by the quality and distribution of educational institutions available to different racial groups, and especially for blacks, the system of homelands.

FAMILY STRUCTURE AND CHILDREN'S SCHOOLING

The relationship between the educational level of the household head and children's enrolment and educational attainment has been supported throughout the literature in many diverse settings. The relationship holds for South Africa as well (see graph 4), and will not be further investigated here, although it underscores the importance of education the next generation. Household resources have also been found to be significantly associated with children's schooling, and this point is especially important in South Africa where income levels had been largely determined by racially-based employment practices. Indeed, Case and Deaton (1996) show that especially for blacks, household economic constraints played a powerful role in shaping children's schooling.

Our analysis focuses on the relationship between intra-household structure and children's schooling, a feature which may be particularly important given the powerful influence of the head's education and household resources. We consider various dimensions of households: total size, the number of school age children, the number of very young children in the household, and the role

child fosterage and teen pregnancy. We also consider the distribution and quality of schools available to children in the areas where they live.

The size of the household is commonly used as a determinant of children's schooling. In many settings, the prevailing assumption is that smaller households imply that resources are stretched across fewer individuals. In sub-Saharan, where households comprise family and kin beyond the nuclear family, this assumption often does not hold. In South Africa, a simple bivariate association reveals that household size has a complex relationship with schooling (see table 2). Children's current enrollment levels appear impervious to household size, even after controlling for race. Educational attainment for the population as a whole is positively related, but disaggregated by race, a different story emerges. The relationship remains positive for blacks, but for coloureds and Indians, it is an uneven relationship, and it is generally negative for whites (see graph 5)..

Table 2: Proportion Currently Enrolled by Household Size and Race

Household Size	African	Coloured	Indian	White
1-3	0.82	0.84	0.87	0.90
4	0.88	0.86	0.94	0.91
5	0.88	0.92	0.93	0.95
6	0.87	0.82	0.91	0.96
7-8	0.88	0.82	0.91	0.90
9+	0.87	0.86	0.84	0.92
Total	**0.87**	**0.85**	**0.91**	**0.93**

Source: SALSS, 1993

Since educational resources of a household must be shared amongst all school age children, we consider the effect of the numbers of school aged children in household on education. We find very little variation in enrollment by the number or school aged children in a household, a pattern that remains after controlling for race. Turning to the average standard completed, the number of school aged children in the household also does not reveal substantial variation by race, except for the coloured group, which shows a positive relationship (see graph 6). Does this imply that the number of children in a household makes no difference to education outcomes? Yes and no. Several factors underlay this relationship, and they operate in different ways by race

group. First, for whites and Indians, children generally progress one year of school for each age; these groups have had access to resources to ensure that all children are educated regardless of number. Coloureds and blacks however, use various strategies to educate children, and one of them is fosterage. Children of school age may be sent to live with relatives in other areas for a number of reasons, but often it is related to educational opportunities for children. Another household, usually but not always situated within kin networks, may have greater resources to provide support for education, or it may be located near schools which offer greater educational advantages over schools located near to the child's biological mother or father.

To untangle these relationships, we consider several different groups of children. First, we examine to what extent fostering occurs among households and the patterns it takes. We also compare the educational outcomes with fostered children, children who are not fostered, and children who live in households with at least one coresiding fostered child. The SALSS provided detailed educational information on children residing within a given household, and contains information on whether or not their parents were also residing in the same household. Information on out-fostered children from a given household is usually not collected in usual household surveys, but we take advantage of a unique feature of the questionnaire. Basic information was also collected on individuals who were considered part of the household but had not stayed there 15 days out of the prior 30. Children and youth of school age (6-19) who were not considered to be resident in the household numbered 614, compared to 14,528 children listed as currently resident, or about 4 percent of all children listed on the household. Since children who are not coresiding with at least one parent comprise about 15 percent of the sample, out-fostered children are clearly under-enumerated in the sample. Still, it provides some household information on children who have been sent elsewhere to live. Specifically, no enrolment or detailed educational questions were asked about these individuals, but educational attainment was recorded. In short, we have detailed information about children fostered in and children co-residing with their parents, and limited data on children fostered out, that is, children who were considered to be a part of the household, but had not lived in that household for most of the previous month.

Levels of fosterage vary by race, and are summarised in graph 7. Approximately 17 percent of black children age 6 to 19 are fostered, 12

percent of coloureds and less than 5 percent for the other two groups. For the former two groups, this means approximately 30 percent of all black children in the sample hve in a household with a fostered children, and for coloureds, just over 20 percent of the sample do. For both blacks and coloureds, most of these children are grandchildren of the household head (60 percent and 53 percent respectively), and the next most common relationship is niece or nephew for blacks (14 percent) and for coloureds, niece or nephew, or cousins are about equally represented (9 percent). Some work from other parts of sub-Saharan Africa suggest that fostered children might be disadvantaged relative to other children in the household, as preferential allocation of resources tends to favor those with parents present (Bledsoe, 1991). Is this the case with South African children? Because of the small numbers involved in the white and Indian groups, the discussion below focuses only on Africans and coloureds.

The strategy of fosterage appears to be an equitable one (see table 3). Very little evidence suggests that favoritism may disadvantage fostered children with respect to education. While a slightly lower proportion of fostered children are enrolled than non-fostered children, for both blacks and coloureds, educational attainment is approximately equivalent for children within each group: For blacks fostered and children not fostered have completed on average about 3.4 standards; fostered coloured children completed about 3.7 standards, their non-fostered counterparts completed about 3.9 standards. Educational attainment is of course cumulative and the data provide only cross-sectional indications of fosterage status, but these estimates suggest equitability among fostered children and those who are not. When examining educational transitions, however, fostered children appear to be slightly disadvantaged, especially for coloureds. By the age of 13 for blacks, 67 percent of non-fostered children had completed primary as opposed to 64 percent for fostered children. For coloureds, those numbers are 82 and 73 percent. In combination, the data suggest that fostering may provide educational resources to children that may otherwise not have access to them; households do not appear to sharply disadvantage students who do not have a biological parent present. It may also be that fostered children progress more slowly through school, and this may be due to extra chores fostered children are called upon to perform to compensate for their accommodation, or due to adjustment in moving to another household and new educational system.

While households with fostered children do not appear to distinguish allocation of educational resources among children, it could be that households without fostered children do better than those with fostered children. That is, children, even if they are not fostered, may be disadvantaged because 'extra' children reside in their household relative to those children from households with no fostered children. However, as illustrated above, households with fostered children do about as well as those with fostered children, and perhaps slightly better, indicating again the likely selection of fostered children into households that can better provided for their education. The data do not permit a comprehensive comparison of households that out-foster with other types of households. For those cases that do exist, out-fostered black children, the only race group with sufficient numbers for analysis, appear to have an almost identical educational attainment as other children on average. We can also compare their educational attainment levels to those attained by children remaining in the households, that is with children who were not out-fostered. The data for black children, the only group with sufficient numbers for reliable analysis, suggest that those who are fostered out also attain a higher level of education than those who remain in the household. For blacks age 15 and under, out-fostered children had completed on average 2.33 standards, while the children remaining in the household had completed one tenth of a standard less than that. For those 16 to 19, out-fostered children had completed 6.29 standards, while their counterparts remaining in the household only completed 5.83 standards, almost a half a year difference.

The relationship between education and the number of school-aged children in the household has an ambiguous causal relationship, in part due to fostering. The presence of young children, under the age of six, is less ambiguous. If children at this age are fostered, they are fostered for other reasons besides schooling. Further, young children often require care by older children in the household which may in turn curtail their education, either directly because they must leave school, or indirectly, since they may have fewer hours to study and may be more susceptible to repeated years in school. For blacks and coloureds, the pull on the educational opportunities for school-aged children exerted by the presence of young children appears in bivariate associations (see graph 8). In black households without any children less than six, children on average almost complete standard four. For those with households with three or more, children of school age can not expect to complete standard three, almost a whole year of education less.

The relationship is even stronger once teenage mothers are included. Almost 40 percent of South African girls have been pregnant at least once by the age of 19, and this statistic is heavily weighted by the experience of black and coloured girls. About 43 percent of black girls have had at least one child by that age, and about 40 percent for the coloured group, though the numbers are very small in the latter case. With such high levels of adolescent births, the presence of very young children often represents more than an increased number of children in the household across which resources must be shared. Often they are children of school-aged girls and may have brought about the end of schooling for the mother, substantial periods of time out of school, or a slow progress through school due to the demands of motherhood.

Importantly, and unlike most other countries in sub-Saharan Africa, some girls in South Africa return to school after they have given birth. For black girls 19 and under (again, the only group with enough cases for analysis), about 33 percent who have had at least one birth are also attending school. That their levels of attainment are lower is not surprising, but in fact, the differentials are not great. Black teenage mothers attained on average just less than a standard 6 education; those who have not had a child have completed 6.1 standards. The causal relationship between teen motherhood and entry, exit and re-entry into schooling cannot be ascertained with these data. However, the data do suggest that education continues to play an important role for girls even after a birth of a child at a young age. Clearly, however, the childcare circumstances in the household determine which young mothers are able to attend school and devote time to homework assignments or studying (see graph 9).

SCHOOL ACCESS, QUALITY AND GEOGRAPHY

Household composition is important to children's education, but also the distribution and quality of schools which children attend, 'supply' characteristics, play a role in education outcomes. Using the 1997 School Register of Needs data, we consider some measures of distribution and quality of schools in South Africa. The current government has placed a high priority on education in the country, and is seeking to rectify inequalities across races and former homeland areas that resulted from the fragmentation under the former government. The old homeland boundaries no longer exist, but changes in the educational infrastructure of these areas are slow. In late

1993, the time of the SALSS, approximately sixty percent of school-aged children resided in former homeland areas, still attending schools of uneven quality and under varying policies of admission and pass rates.

The unique data sources permits an investigation into some measures of quality and distribution, though as mentioned above, some qualifications to the findings are required. First, these data represent the conditions of schools approximately three years after the individual level data were collected. The relationship between schools and children's educational outcomes that we discuss here are relevant only to the extent that conditions have not changed greatly in most areas, From our conversations with educational professionals in the country, we believe that the physical infrastructure of schools did not change significantly in this period, though teacher and student composition may have. Second, in order to link the two datasets, we aggregated observations of schools to the magisterial district level. We are not able to link children in the SALSS dataset to a particular school; we can only examine district level averages. With these qualifiers in mind, we examine differences across old homeland borders since the educational legacies of these entities still operated in the lives of many children.

Distribution of schools in a given area is one important measure of schooling since children cannot attend schools if there are none available, or available only at distant locations. Distribution is also difficult to measure in this case, however, since no population base data exist; we cannot determine directly if the number of schools in a given area are appropriate for the number of children who live their. We instead use the proportion of schools that are secondary schools. This gives an indication of emphasis placed on continued education past primary, which may be important in conditioning the opportunities parents or guardians feel their children have in a particular area.

Various measures of quality of infrastructure were used in exploratory analysis, including the proportion of schools without any water, with no toilets (including bucket systems or pit latrines) on the premises, with no power, the proportion of schools platooning (a second shift of students and often teachers in the day), and the proportion of farm schools in the districts (farm schools refer to those schools located on white-owned farms and are operated for the children of black or coloured employees - often temporary residents - of the farm). Since many of these characteristics are highly

correlated across schools and associations are similar, we report only the first two of these on water availability and toilets.

Finally, we include the student teacher ratio as an average by district. Again, this measure is more tenuous than the others when included in an analysis with the SALSS data because the distribution of students and teachers are likely to have changed between data collection efforts of the two surveys. Should selection occur, however, students are likely to migrate from highly crowded schools to less crowded schools. If this is the case, the student-teacher ratios will have flattened, and the effects will be minimal, that is, the results here are likely to be conservative (see graph 10 for distributions by race). Moreover, Case and Deaton (1996) also used a student-teacher ratio in their analyses, but the data were from 1991, and information about schools in the disparate geo-political units of the country was of uneven quality and often fragmented. Including the measure with more recent and systematically collected data will serve as an important comparison to their earlier research.

Table 5 summarises the findings on quality and distribution according to boundaries operating on the eve of the elections. Former homeland areas are distinguished between the four that were so-called independent (the TBVC states), and the others (the 'self-governing territories') since the former were in general poorer and less economically developed than the others, and because the financial ties to the central South African were distinct. Nonetheless, many of the measures reflect surprising variation across old homeland and provincial boundaries. The former provinces have some of the lowest proportions of secondary schools, for example. Part of this reflects a greater diversity in other types of educational institutions, still one would expect at least an equivalent proportion of secondary schools as are found in former homeland areas. However, the TBVC states on average have fewer than in the other homeland areas.

The three quality measures in general co-vary in the expected direction. The Transkei, for example, has low proportions of secondary schools, schools without water and without toilets, and has a high number of students per teacher. For the provinces, the estimates of quality and distribution in the table probably imply a more optimistic picture than was the case. The school census data do not provide information which permits distinguishing historically white schools from those that were for blacks. The district averages combine very poor quality schools, mostly attended by blacks, with

very high quality schools, mostly for whites. Comparing school 'input' measures with output measures, that is, pass rates, enrollment levels, and average standard completed, an unusual picture emerges. For black students, these measures do not show substantial differentials among those living in former homeland areas and those who did not. Indeed, the associations reported in the table indicate that students living outside of homeland areas may have been about as likely to be currently enrolled but have advanced more slowly through schooling than their counterparts living in most former homeland areas. In short, while quality of infrastructure of schools generally adheres to the expectation that homeland schools were not good schools, enrolment and attainment measures suggest that children in former homelands nonetheless had similar or even more favorable educational profiles than others.

At least two explanations seem plausible, and they are likely to be complementary. First, the measures presented here do not reflect achievement. Even though children living in the former homeland areas may have gone through as many or more levels of education, the quality of that education may not have been equivalent to the education given in other areas. Second, former homeland areas also were subject to in-migration of students from non-homeland areas. The violence and educational disruptions in urban areas prompted many parents to send children to more rural and generally more peaceful areas. In short, former homeland schools offered some attraction to parents with children who otherwise might attend supposedly better resourced schools or schools with teachers with better qualifications in non-homeland areas.

MULTIVARIATE MULTI-LEVEL ANALYSIS

To further explore some of the issues raised in the previous discussion, we turn to a multivariate, multilevel analysis of children's schooling. We concentrate this discussion on educational attainment, since current enrolment does not capture the variation in pace of schooling for children. For this analysis, we use years of education, a minor transformation of the average standard completed variable to reflect the categories used in the SALSS questionnaire.

The independent variables used in analysis include the education level of the household head, rural or urban status, if the head of the household is female, the child's gender, child's age, the log per capita monthly expenditure of the household,[5] controls for race, and household size. Additionally, we coded the number of children under the age of six in the household as a series of dummies for representing zero children, one, two, or three or more to allow for a non-parametric modeling, that is, no linear relationship between the number of young children in the household and children's educational attainment is assumed (see Kelley, 1994). We elected not to introduce the number of school-aged children in the household or whether or not a parent was co-resident since both of these may be as much a result as a determinant of educational outcomes.

Several measures of school distribution and quality measures were considered for analysis. as described above. After some exploratory analysis, measures of the proportion of secondary schools, the proportion of schools with no toilets, and the student-teacher ratio were found to be the most robust indicators of quality. Geographical variables are a series of dummies. One set comprises just two: one indicating residence in a former self-governing territory (SGT) or in an independent state (TBVC), the reference category is the non-homeland area of South Africa. The other series comprises dummies for each former homeland and province, and the Cape is the reference category for these analyses.

The analytic strategy involved a series of nested models which began with individual and household characteristics only. Variables representing the number of young children in the household are next introduced, followed by school characteristics and geographic variation. Because of the small numbers involved, we did not include Indian children in the multivariate analysis. We estimated models for the other three groups together (with race controls) and then for blacks separately. Very little difference in estimates were found, and we report here the result of the three race groups combined. All analyses exclude mothers who are age 19 and younger, since the presence of young children on these school-aged girls might bias the estimates downward.

Because of the multiple levels involved in these data, children within households, within sampling clusters within magisterial districts, a multilevel estimation procedure was the most appropriate analytic technique. The clustering of data are important to take into account in analysis because the

standard errors will otherwise be underestimated and may lead to inflated significance levels. In this case, individual children are the first level. They live in households with other children and will share many characteristics making the household the second level of analysis in our model. The third level is the cluster level, deriving from the clusters sampled in the survey. The fourth and final level is the magisterial district level, the level to which our schooling data were aggregated. Preliminary analysis indicated that no significant unobserved heterogeneity operated at this level, so we confined our analysis to the first three levels.

The general three level model estimated is:

$$y_{ijk} = a + B_1'X_{ijk} + B_2'W_{jk} + B_3'Z_m + v_k + u_{jk} + e_{ijk}$$

Where:
y_{ijk} = the number of years of schooling for the ith child living in the jth household in the kth cluster,
B_1' = estimated coefficients for a set of child-level characteristics
X_{ijk} = individual level characteristics
B_2' = estimated coefficients for a set of household characteristics
W_{jk} = household level characteristics
B_3' = estimated coefficients for the magisterial districts
Z_k = magisterial level characteristics

v_k, u_{jk}, and e_{ijk} are cluster, household, and individual level random effects, respectively.

Note that as discussed previously, no cluster-level characteristics are employed in the analysis. Nonetheless, the cluster sampling design of the SALSS indicates that observations within a given cluster may be correlated, and so we control for unobserved heterogeneity at the cluster level. Conversely, we include magisterial district level measures, but preliminary analysis suggests that random variation at this level is not significant. Since in many districts very few clusters are represented, this is not surprising.

In the stated formulation, the random effects v_k and u_{jk} can be considered as departures of the cluster or the household's intercept, respectively, from the grand mean (given by the constant). They are assumed to be normally distributed. The models are estimated using the package MLn (v. 1.0a) which

employs an algorithm based on iterative generalised least squares (Goldstein, 1993).

We began by first estimating models in the statistical package Stata using Huber-like correction to standard errors at the household level. The final model included the series of dummy variables representing each former homeland. However, we were not successful in estimating the three -level multilevel model that converged, so we substituted dummies representing SGTs and TBVC states. The final model is presented in table 6, and shows that as others have found, girls fare better than boys in the number of years of schooling, and that the educational attainment of the household head and household expenditures are highly significant and positively associated with children's education. We find in this model, and unlike Case and Deaton, that female-headedness is not significantly associated with children's schooling. However, we also found that significance was influenced by geography (results not shown), variables that Case and Deaton did not include in their model. While we have not explored this relationship fully as yet, it is plausible that many types of female-headedness exist in South Africa because of the male labor migration. This in turn is likely t be associated with residence in former homelands since these areas had been - and in many respects continue to operate as - reserves of labor. Some female heads may in fact not have as much say in household expenditures if they are dependent on remittances from absent partners; those remittances may well have predetermined budgets that women may not want to or be able to alter.

The variables indicating the number of young children in the household are significant and negative. Without controlling for heterogeneity at the cluster level, the magnitude of the effects appear to be linear; each additional child brings about fewer years of schooling. However, once heterogeneity at the cluster level is controlled, the relationship does not hold. Further testing shows that the relationship is not linear, but rather that the presence of any child under the age of six has a negative impact on years of schooling relative to having no children under the age of six in the household (results not shown). A different story appears when teen mothers are included in the sample; the relationship is negative and significant for households with no children or one child in the household. Cause and effect cannot be determined with these data, but the results underscore the importance of careful consideration of household structure in regions were teenage childbearing is extensive.

Before turning to a discussion of the random effects, we turn briefly to the measures of school quality and geography. Our analyses showed that the two are closely related. The variables of each type included in the equation without the other produce significant effects; for quality measures, the effects were in the expected direction, for homelands, they were mostly in the positive direction. Including both geography and quality measures diminished the effects of the homelands, but many remained positive and significant. The effects of the quality measures varied. All of them also diminished, but the student-teacher ratio remained significant and negative throughout, though it did not have as large of an effect as that found by Case and Deaton. The proportion of schools without toilets was not significant once geography was controlled, and the proportion of secondary schools was significant and positive when the geography variables were only the two representing the different types of homelands. Once homeland specific dummies were introduced, this measure also lost its significance. This suggests that grouping homelands by type may mask the relationship between school quality and children's educational outcomes.

The random effects at both the household and cluster level are significant which suggests that for a given set of characteristics as specified in the model, one child may have a better educational outcome than another with identical characteristics, depending on the household and cluster in which each resides. To demonstrate the interpretation of the random effect, various estimates of the number of years of schooling are provided in table 7. Since the random effect is assumed to have a normal distribution, we can calculate a range of estimates according to deviations from the mean of the random effect. Table 7 shows results of estimates using the random effect by holding the cluster effect at zero. The estimates are calculated for a black girl living in a female headed household that is not located in a former homeland area, all other characteristics are kept at the sample mean. The first row shows the variation across families with no young children. Columns indicate the difference across families with two children compared to those with no children. The table demonstrates the power of households on children's education. On average, a child living in a household with no young children can expect to complete almost five years of education. However, if that child lives in a household that does not encourage schooling, that child can expect only slightly more than three years. Conversely, if the household strongly encourages education, the total number of years of education for the child

might be more than six and a half years. If a household has two children under the age of 6, a school aged child on average would receive only about one third of a school year less than a child with no young children in the household. That deficit could be easily made up, however, if the child lived in a household that promoted education.

The importance of household dynamics has been demonstrated throughout the investigation: some families are very good at educating their children, and others are less encouraging. Our results also show that geography remains an important part of schooling for children. For these data, old boundaries have been important to take into account because they still demarcated areas of good and bad schools brought about by the former regime. To the extent that South Africa drives to make its educational system equitable, quality and geography may become less intertwined, but only if the legacies of uneven education perpetuated within those borders are taken into account The data also suggest that quality is conditioned by more than conventional measures in South Africa: Are parents willing to send their children to areas with lower quality teaching if educational disruptions (which continue to take place) are less likely? These data cannot answer that question, but the results do suggest that parents or guardians do pay attention to quality, but that they may be willing to forego some quality issues for the increased chance their charges may have of getting more education in the long run.

CONCLUSIONS

The importance of households and families to children's education has been verified by a wide range of studies in vastly different settings. Many studies have used various household composition variables to capture this variation, while others have simply used family or household size as a control variable to explore other determinants of children's schooling. Still others have been able to exploit particularly rich sources of data to analyse the education-fertility or family size relationship. This paper has sought to better understand the relationship of children's schooling to household composition, which often encompasses and goes beyond the biological family membership, especially in sub-Saharan African countries. The relationships highlighted in the analysis demonstrate the challenges unraveling the relationship among fosterage, wider kin networks and lines of reciprocity which often involve children and their education. It also emphasises that these relationships are

particularly salient to children's education and will likely play a dominant role in improving schooling accomplishments for children.

South Africa is well on its way through a transition to low fertility, yet fosterage, male migration and teen pregnancy are still very relevant factors determining strategies for the education of children. Education is clearly highly valued among most in the country as witnessed by the relative high levels of current enrolment. Ultimate levels of educational attainment vary, but children continue in school even when they fail a grade, or give birth to a child at a relatively young age. The diversity of strategies employed by parents and guardians to educate children indeed may have arisen from the limitations and constraints of the former regime. The point of time under scrutiny in this paper is one of imminent transformation for the country, and even at that time, the analysis reveals relationships that may not have been expected, especially with respect to enrolment or geography. The paper also shows the vitality of households in encouraging or discouraging educational attainment - there is still much about children's immediate family or household environment about which we know very little. Finally, the paper provides further support for the growing body of research that finds quality of education matters. Lowering class sizes and improving the conditions under which children learn will help them to go further in school.

FOOTNOTES

1. The magnitude of the shift is worth noting. Of 7000 schools operating in 1953 when the Bantu Education Act was passed, 5000 had been run by missionaries. By 1959 all but 700 schools had been taken over by the government (Christie and Collins, 1984).
2. No school information was available for Botshabelo, Hewo, Mpofu, and Tlhaping-Tlharo districts, representing less than two percent of the total SALSS sample.
3. The system at 1993 is described here because this is the year the data for this analysis were collected. South Africa's educational system has gone through a number of changes over time. For example, secondary school grades had been referred to as 'Forms' instead of 'Standards,' though the division between primary and secondary was unchanged.
4. Based on the experience of 20 to 23 year olds.

5. Expenditure data is generally more reliable than income data. This variable was derived from total household monthly expenditure computed by Saldru and World Bank researchers and made available with the dataset.

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Table 1. Characteristics of children in the sample (weighted)

|	N	Percent		N	Percent
Race			*Household size*		
African	14610	80.77	<=3	2016	11.14
Coloured	1411	7.80	4	2291	12.66
Indian	433	2.39	5	2676	14.79
White	1635	9.04	6	2609	14.42
			7-8	3860	21.34
Age			9+	4638	25.64
6-10	5609	31.00			
11-12	2094	11.58	*Number of school aged children in the household*		
13-15	2936	16.23	0-1	3356	18 55
15-19	3862	21.35	2	3851	21.29
19-23	3589	19.84	3	3849	21.28
Sex			4	3118	17.24
Male	8905	49.24	5+	3916	21.65
Female	9182	50.76			
			Number of children under the age of 6 in the household		
Residence			0	7759	42.89
Rural	10729	59.31	1	5312	29.36
Urban	3422	18.92	2	3041	16.81
Metropolitan	3939	21.78	3+	1978	10.94
Head of Household			*Geography*		
Male - present	10392	57.60	Former province		
Male absent	2141	11.87	Cape	2386	13.19
Female - present	5264	29.18	Natal	894	4.94
Female absent	242	1.34	Transvaal	3435	18.99
			Orange Free State	954	5.27
Education of household head			Former self-governng territories		
None	5202	29.30	Gazankulu	558	3.08
Any primary	5870	33.07	KaNgwane	456	2.52
Some secondary	4519	25.45	KwaNdebele	275	1.52
Completed secondary	2162	12.18	Kwa Zulu	3336	18.44
			Lebowa	1801	9.96
			QwaQwa	153	0.84
Monthly household expenditure (1993 Rands)			Former independent states		
Percentiles			Transkei	2000	11.06
25%	636.01		Bophuthatswana	1119	6.18
50%	1084.13		Venda	301	1.66
75%	1959.17		Ciskei	423	2.34
mean	1672.71				
std. dev.	1831.81				

Graph 1:

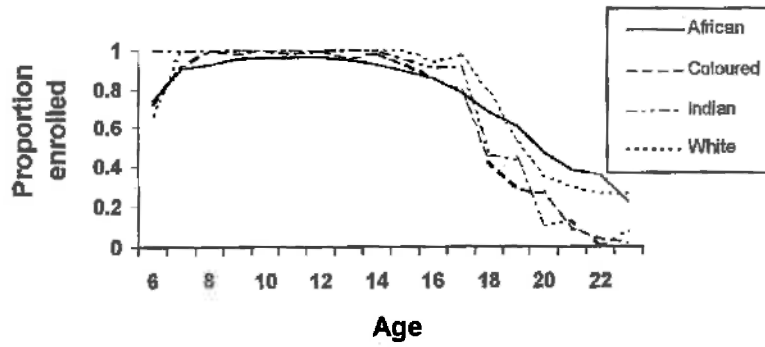## Average Standard Completed by Age and Race, South Africa, 1993
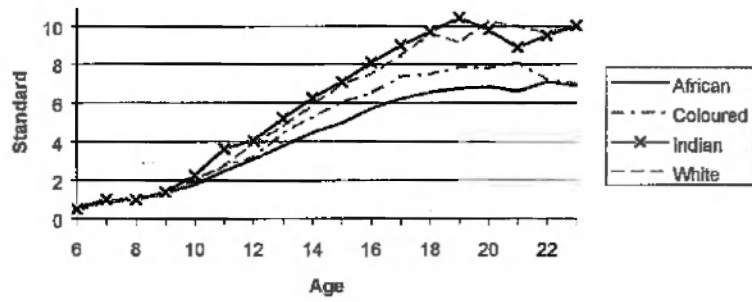
Graph 2:

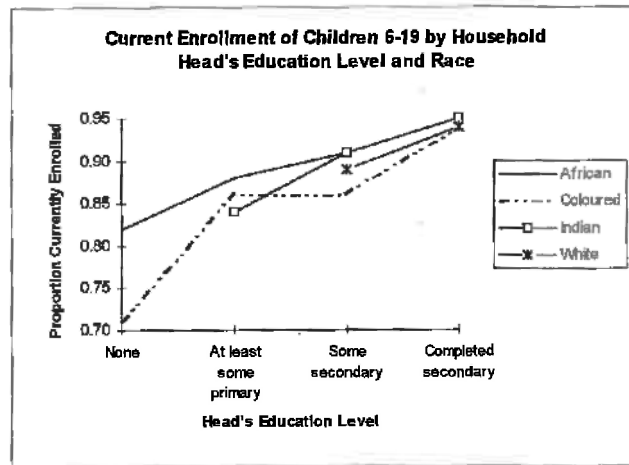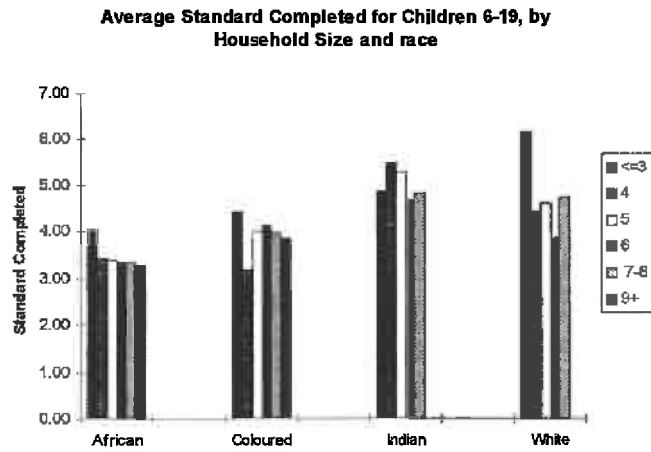**Percentage of Currently Enrolled Students Who Completed Upper Primary**
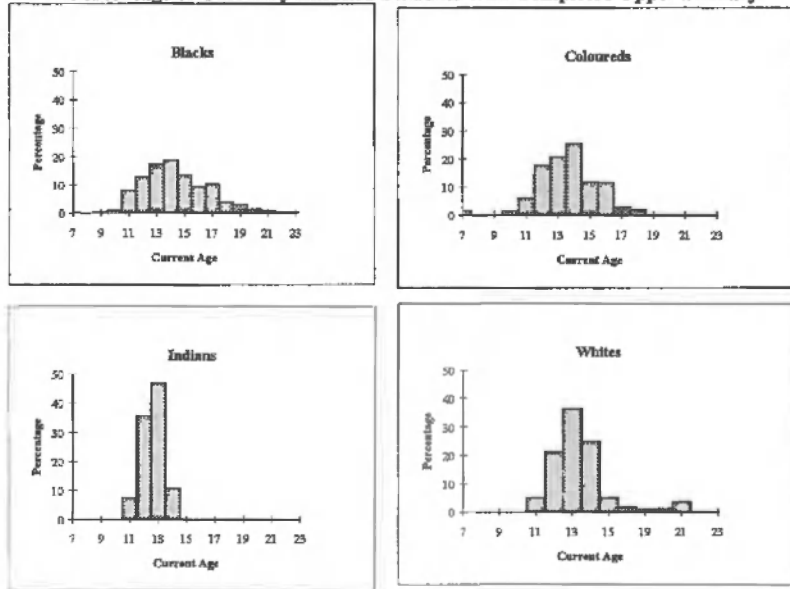
Proportion of Children Currently Enrolled by Age and Race, South Africa, 1993

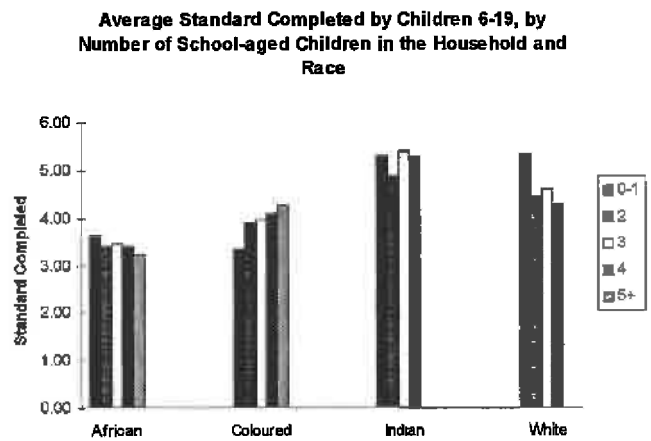Graph 4:

Graph 5:

Average Standard Completed for Children 6-19, by Household Size and race

Graph 6:

Average Standard Completed by Children 6-19, by Number of School-aged Children in the Household and Race
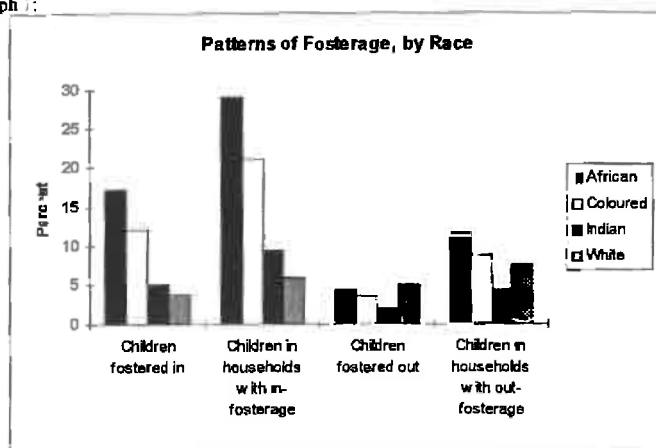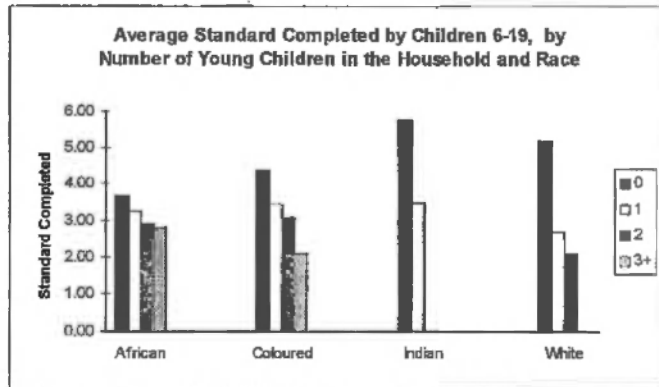
Patterns of Fosterage, by Race

Table 3. Educational attainment and current enrollment of fostered children, compared with those not-fostered

	Average Standard completed		Proportion currently enrolled	
	African	Coloured	African	Coloured
In-fostered children	3.41	3.74	0.82	0.86
Children not fostered	3.39	3.94	0.88	0.81
Children with at least one in-fostered				
child in the household	3.4	3.96	0.83	0.84
Children with no co-residing				
in-fostered children	3.39	3.9	0.88	0.86
Out-fostered children				
Total	4.16			
<=15	2.33			
16-19	6.29			
Children who reside in households				
with at least one child out-fostered				
Total	2.99			
<=15	2.23			
16-19	5.83			

Source: SALSS, 1993

Note: No enrolment data exists for out-fostered children. The numbers for the Coloured out-fostered group were also too small to report here.

Graph 8:

Average Standard Completed by Children 6-19, by Number of Young Children in the Household and Race

Standard Completed

African | Coloured | Indian | White

■ 0
□ 1
■ 2
▩ 3+

Graph 9:

Percent African Teen Mothers Currently Enrolled, by Co-residential Status of Child

Percent Enrolled

Child coresides with teen mother

Child does not reside with teen mother
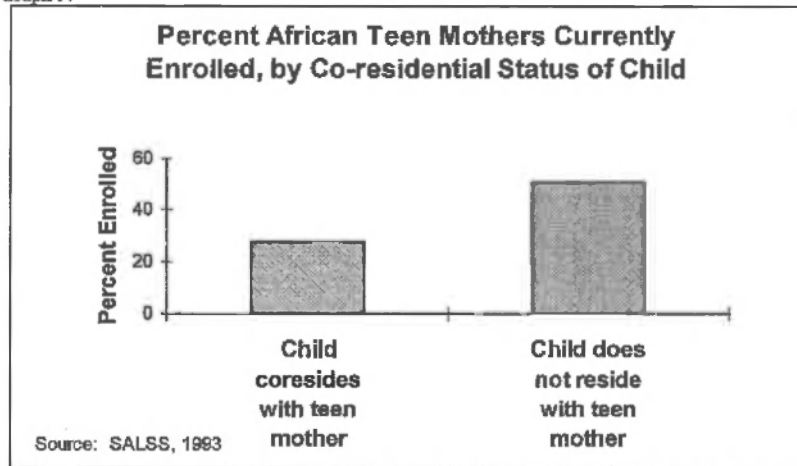
Source: SALSS, 1993

Table 5. School Quality, Distribution and Children's Schooling in South Africa

	Proportion of Schools[a]			Pupil-Teacher Ratio[b]	1992 Std 10 Pass rate (%)[c]				Proportion of children Currently Enrolled[d]		Average Standard Attained[d]	
	That are secondary	Have no water	Have no toilet		Afr	Col	Ind	Wh	All	Afr	All	Afr
1993 Provinces												
Cape	0.20	0.04	0.02	26.84					0.86	0.81	3.86	3.42
Natal	0.22	0.07	0.03	29.25					0.85	0.73	4.17	2.84
OFS	0.11	0.25	0.13	27.78					0.88	0.88	3.00	2.88
Transvaal	0.21	0.07	0.04	30.06					0.89	0.87	4.15	3.85
(totals for non-homeland areas)					40	86	95	98				
Former Self-Governing Territories					n/a	n/a	n/a					
Gazankul u	0.30	0.39	0.09	35.59	53				0.93		3.77	
KaNgwane	0.29	0.18	0.06	40.00	41				0.88		3.58	
KwaNdebele	0.32	0.09	0.20	36.56	33				0.94		4.36	
KwaZulu	0.29	0.28	0.10	37.29	37				0.86		3.34	
Lebowa	0.38	0.45	0.11	35.99	35				0.92		3.51	
QwaQwa	0.28	0.04	n/a	31.68	40				0.94		3.84	
Former Independent States					n/a	n/a						
Transkei	0.11	0.45	0.34	41.84	42				0.86		2.74	
Bophuthatswana	0.15	0.05	0.03	26.97	73				0.82		3.30	
Venda	0.29	0.59	0.08	32.59	50				0.86		4.07	
Ciskei	0.28	0.22	0.08	33.47	46				0.92		3.97	

a,b Measures from the SRNS (1997). Measures were aggregated to the magisterial district level for those districts in which the sample of children from the 1993 SALSS resided.

c: Pass rates from EduSource newletter, April, 1993, and refer to all children in each province or former homeland.

d: Enrolment levels and educational attainment from SALSS (1993), children aged 6-19

Graph10:
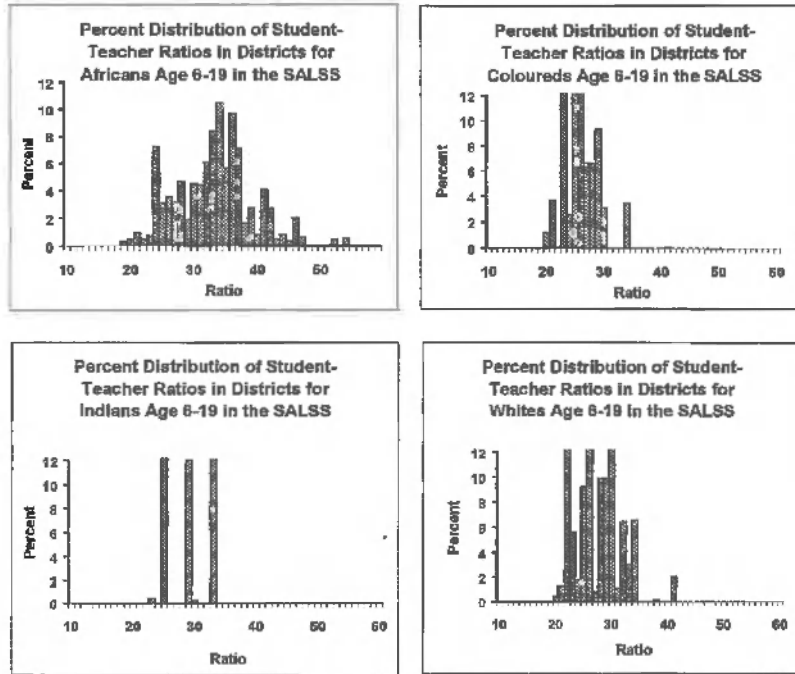
Source: Salss 1993; SRNS, 1997

Table xxx Parameter estimates and standard errors of linear regression random effects model of years of schooling in South Africa for children ages 6-19

	Coeff	Std. err.	t-statistic
Child characteristics			
Age	0.660	0.004	179.989
Gender	0.455	0.029	15.685
Resides in rural area	-0.403	0.103	-3.920
Household characteristics			
Head of household is female	0.054	0.043	1.254
Educational attainment of household head	0.056	0.005	10.392
Monthly log per capita expenditure	0.423	0.035	11.931
Household size	0.040	0.009	4.649
Number of young children in household (ref=no young children)			
1 child less than 6	-0.189	0.047	-4.003
2 children less then 6	-0.223	0.061	-3.671
3 children lt 6	-0.199	0.084	-2.368
Geography (ref=non-former homeland areas)			
Former self-governing territories	0.348	0.147	2.367
Former independent states (TBVC)	0.471	0.125	3.757
District-level school characteristics			
Student to teacher ratio	-0.024	0.008	-2.915
Proportion of schools that are secondary	2.929	0.553	5.299
Proportion of schools that have no toilet	0.753	0.449	1.676
Random effects			
Household random parameter	0.733	0.037	19.840
Cluster random parameter	0.233	0.028	8.427

Source: SALSS, 1993; SRNS, 1997

Note: race controls included in model

Table 7 Estimated number of years of education for children 6-19 years old according to the young children in the household, for various values of the household random effect

# of children less than 6	Household random effect				
	-2	-1	0	1	2
0	3.24	4.10	4.95	5.81	6.67
2	3.02	3.88	4.73	5.59	6.44

Note: Estimates use the following base characteristics: black, female, female headed household and and non-homeland area. All other characteristics use sample averages. Random effect at the cluster level held constant.