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Senegal: Descriptive Survey Results**

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SENEGAL: DESCRIPTIVE SURVEY RESULTS**

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Introduction

This report provides a preliminary descriptive analysis of some of the data from The Progression through School and Academic Performance in Senegal Study. This project, described below, is based around a nation-wide household survey with a special focus on schooling, complimented by academic and life skills tests and additional surveys of local schools and communities. The topics covered in this report focus on the household survey and test score data and include: enrollment rates; school attainment; grade repetition; dropouts and progression to secondary school; academic and life skills test scores; and perceptions about education and schooling.

The Progression through School and Academic Performance study is a joint research project of Cornell University, Centre de Recherche en Economie Appliquée (CREA), and INRA.¹ It is a unique effort that combines numerous survey instruments to investigate the household, community, and school-level determinants of schooling and learning outcomes in Senegal. It does this by supplementing an existing five-year nation-wide cohort survey of primary school children, the PASEC study (Programme d'Analyse des Systemes Educatifs de la CONFEMEN), with detailed additional follow-up survey data. The initial PASEC study tested a cohort of children in each year starting with second grade and going through 6th grade (1995/96 through 1999/2000). Students were administered standardized tests of French and mathematics skills. The Progression through School project supplements the PASEC data with new tests and new surveys—of households, communities, and schools – conducted in 28 of the rural and 32 of the urban communities covered by the PASEC sample of primary schools.² The new data were collected in spring and summer of 2003, when the PASEC cohort was mostly between 14 and 17 years of age, or by and large of lower secondary school (*college*) age.

In each community, the survey teams consulted with PASEC school directors to help locate the PASEC participants, an effort that was usually quite successful: of the 20 children in the original PASEC cohort in each school, typically 15 to 17 were found and re-interviewed in the selected communities. The PASEC children are not necessarily representative of all children in their cohort—other children never entered school at all, and still others may have attended different (e.g., private) schools. Therefore the survey also randomly chose an additional 10 households (or more, to make a sample of 30 households per community) with children in the 14-17 years of age range to participate in the household survey. At the same time, comprehensive surveys on the characteristics of local schools and communities were also conducted.

¹ The project has been funded by the US Agency for International Development, World Bank, Cornell University, UNICEF and INRA.

² The original PASEC survey sampled 99 schools/communities while significantly oversampling urban areas. For the new surveys, it was decided to visit virtually all of the PASEC rural communities and slightly less than half of the urban communities.

As part of the household interviews, tests were administered to all children of the age of the PASEC cohort (whether they were in the original PASEC study or not) to measure current academic knowledge. The written French and Math tests were designed to be comparable to the initial 2nd grade post-test taken by all the PASEC children – indeed, many items were chosen to be the same on both tests – thus facilitating the measurement of knowledge growth or retention over time. Also administered in 2003 were an oral math skills test and a ‘life-skills’ test of non-academic knowledge, including for example questions about health practices and HIV/AIDS.

As noted above, the results in this report are drawn from the household survey as well as from the test score data. 1,820 households were interviewed for the survey, comprising a sample of about 19,000 persons. The household survey was comprehensive, collecting information on household composition, detailed education histories of all household members, assets, health, migration, employment and time use. A module on perceptions about schooling was also included, and administered to children (from a somewhat broader age range than the PASEC cohort) as well as parents.

Unlike a standard household survey, the questionnaire includes detailed retrospective questions on significant changes in a household’s economic and health situation in past years that may have influenced decisions whether to enroll a child in school or to keep the child in school. These will be used in later multivariate analysis to explain various school outcomes. The present descriptive analysis is by and large limited to cross tabulations of these outcomes by a few key characteristics such as gender, location, parental education and wealth.

One final point to be emphasized is that this sample was not selected to be representative of school age children in Senegal. Instead, it was purposefully drawn to link with the initial PASEC sample. While the correlations and relationships presented in this report are therefore of interest, they needed to be treated with caution in terms of generalizing to the entire country.

Section 1: Enrollment

Among the sample of potential school enrollees, which we define as all children ages 6 to 21 years old, about 78% of the individuals have attended or are currently attending school. There is an important gender difference: this figure is significantly higher for males (81%) than for females (75%) (Table 1.1). There is an even larger difference (about 18 percentage points) between urban and rural areas: the rates of having ever attended school are 88% in urban communities and 70% in rural communities (Table 1.2). Among the 78% of the individuals that ever attended school among the full (rural and urban) 6 to 21-age cohort sample, 76% are still enrolled. There is no significant difference between boys and girls, suggesting that the main source of gender inequality in educational attainment occurs through the different rates of entry into school.

There is a wide variation by age level in the probability of ever having attended school (Table 1.3). Overall, nearly two-thirds of the children 7 years of age are (or were) enrolled, with the number being higher in urban than rural areas. In fact, when looking at the probability of having ever attended school by age, it increases until age 9 and then stabilizes around 81%, implying that many children enter school at ages 8 and 9. This is shown explicitly in Table 1.4, which indicates that nearly 15% of our sample began school after the age of 7 years old.

We look next at how the probability of having ever attended school varies with household's characteristics. First we concentrate on the differences by ethnic and religious groups. Diolas, originating mainly from the Basse Casamance, a region which beginning in colonial times was characterized by a dense network of missionary schools, have a higher probability of attending school than other groups (Table 1.5). Among the Wolof/Lébou group, which is both the biggest and by far the most prosperous ethnic group, four-fifths of the children attended school, in contrast with the Madningue/Sose, where only 72 percent of the children aged 6 to 21 ever attended school. Stratifying by religious group, a greater proportion of Christian (and Animists, but this is a very small group in our sample) children have attended school than have Muslim children (Table 1.6). This religious difference is seen for both girls and boys, but the difference for girls is more pronounced because the enrollment of Muslim girls is particularly low: only 73% of Muslim girls have ever attended school compared with 81% of boys.

Parental education is expected to play a positive role in the decision to enroll children in school. When looking at the probability of having attended school by parental education, we find as expected that it is increasing with the education level of both the mother and father (Tables 1.7 and 1.8). The increase in this probability is particularly dramatic between children whose parents had no education and children of parents with some primary education. This would suggest strong intergenerational enrollment impacts of even providing even just a few years of primary education.

The wealth of households is not measured directly in our survey. To come up with measures of wealth for the analysis, we employ factor analysis to compose two

wealth indicators. The first is constructed on the basis of the household's ownership of durable goods; the second is based on the characteristics of the dwelling of the household. When looking at the probability of having ever been enrolled in school for children age 6 to 21 years old by quartile of the wealth distributions, we find that schooling increases with wealth, although no difference is noticeable between the first two quartiles of the "durable goods" distribution (Table 1.9).

When disaggregating by family size, it appears that children living in very large households have a lower probability of having ever attended school. However, the difference is not very large, decreasing from a 64% enrollment probability in households with less than 9 members to 58% for households with 16 or more members (Table 1.10).

The relationship between the probability of ever having been enrolled and gender of the household head is examined in Table 1.11. The difference between female and male-headed households is noteworthy. In the former, children have a 7-percentage point higher probability of having ever attended school than in the case of male-headed households. However, this simple cross tabulation needs to be interpreted with caution, as other confounding factors may explain this relationship. For example, as shown in Table 1.12, households headed by a woman are more concentrated in the upper end of the wealth distribution. This in fact is not an unusual finding from surveys conducted in African countries. Furthermore, the mean education of the mother is higher in households where they are also the head, rather than their male spouse (Table 1.13). As a result, it is not possible to infer from this description whether what matters is the gender of the head, the household's wealth, and/or the mother's education attainment.

Section 2: School Attainment

In order to describe school (grade) attainment, we concentrate on 20 to 35 years olds in our sample. Individuals in this age group are likely to have finished their schooling and thus, our results are not biased through censoring due to incomplete schooling.

The average number of years of schooling of this group is 4.5 (Table 2.1). Women have achieved on average 3.6 years versus 5.7 for the men, with 47% of the women having no education at all, in contrast to only 25% of the men (Table 2.2). This gap is much larger than the gender gap observed above for children 6 to 21, demonstrating that in recent years females have gained significantly relative to males in access to schooling; of course, this is not to say that the remaining gap should not be a source of concern for policy. In terms of the level of education achieved, only 12.4% percent of women have completed lower secondary school or greater, while the comparable figure for men is twice as high (Table 2.3).

Rural-urban gaps are also very significant. In rural areas, more than half of the sample in this age group has no education at all (54.2%), while the corresponding number in urban areas is only 21.6% (Table 2.4). We also find that 16 percent of the urban sample has completed lower secondary school or greater, while this is the case with only 5 percent of the rural sample. This difference is also noticeable when looking at the average number of years of schooling that for urban dwellers is 5.9 years, as compared with only 2.9 for rural individuals (Table 2.5). Likewise, one third of the urban sample has more than six years of schooling, as compared to only 14 percent of the rural sample (Table 2.6). In interpreting these rural-urban differences, it should be kept in mind that they are not due entirely to differences in the availability or quality of services in rural and urban communities. For example, many people educated in rural areas are likely to have moved to urban areas to work.

As shown in the previous section regarding enrollment, religion and ethnicity are also dimensions along which there are marked differences. The generally lower education of Muslims is apparent by looking at average number of years of education. Muslims have on average 3.8 years of education, while Christians have 4.4 years (Table 2.7). When we further disaggregate by gender, we find that Muslim women have only 3.5 years of education on average, while their Christian counterparts have on average 6.4 years of schooling. Regarding ethnicity, the favorable situation of the Diola, and to a lesser extent the Wolof/Lebou with respect to education is again visible (Table 2.8). On the other hand, there is no difference between the education of males in these two groups. Instead, these average differences reflect the fact that Diola women have more years of education (4.8 years) than Wolof/Lébou women (4.2 years).

Table 2.9 indicates that there is a strong positive relationship between education and wealth no matter which of the wealth indicators is considered. Among the lowest wealth quartile defined in terms of dwelling quality, for example, women have only 1.2 years of schooling on average, while for the upper quartile the figure is 5.9 years. Or

when we define wealth using durable good ownership, the average male education is 4.3 years for the lowest quartile, and 7.4 years for the highest quartile. Note the difference here between the education/wealth gradient for men and women, that is, the size of the association of education and wealth: the effect of wealth on women's education is much larger than for men.

Parental education is also positively correlated with education of adults 20-35 in our sample. The impact of mother's education seems greater than that of father's education. For example, when looking at median education level of our sample stratified by the level of education for his/her parents, we find that the mother that completed lower secondary school has a child with 4.5 years of schooling at the median, while the child of a father with the same level of education has a median level of schooling of 3.5 years (Tables 2.10 and 2.11). When we look at the averages, the gradient of mother's education on the child's years of schooling is steeper than that of father's education (Tables 2.12 and 2.13). If the mother has any primary education, the average number of years of schooling of their offspring reaches 3.8 years vs. 5.9 for the father. On the other hand, having a non-educated father is more detrimental for their child's schooling than having a non-educated mother, and particularly so for females. The average number of years of schooling of individuals with a non-educated father is 4.3 years (3.6 for females and 4.6 for males) while it is 4.8 years for individuals with non-educated mother (4.4 for females and 5.1 for males).

Section 3: Grade repetition and interruptions

One of the most striking and well-known features of the education system in Senegal is the high rate of grade repetition. In our sample, for children aged from 6 to 21 years, nearly 53% have repeated at least once during their primary schooling (Table 3.1). This feature is fairly common in French speaking Africa. It is inherited from the French schooling system, where at each class a certain scholastic level needs to be reached before continuing to the next class. It is in many ways a costly characteristic, both to the public education system and to the households. The question is open as to whether the benefits in terms of improved cognitive skills acquisitions, is justified given the psychological and financial costs (to both households and the public sector budget) of holding children back.

Among the population of 12 to 21 year olds that entered school, nearly two-thirds of the children repeat at least one grade. But more startling, 43% of those who repeat one grade repeat more than once (Table 3.1). The average number of repetitions decreases, but only slightly, with the level of education of the parents, for both the mother and father (Tables 3.2 and 3.3). This relatively flat profile is also observed when computing the average number of grades repeated by quartile of the wealth distribution: only the upper quartile shows a markedly lower average number of primary repetitions (Table 3.4). These weak relationships contrast with the other education outcomes we looked at so far. One possible explanation is that those children who perform poorly on cognitive tests, and face the prospect of repeating or dropping out, are more likely to choose the former course if they are from households with higher socioeconomic backgrounds³. Hence repeaters are “negatively” selected for repetition since they fail, but “positively” selected for repetition among those who fail.

For secondary school, 23 percent of those entering lower secondary school repeat at least once at this level, and 15% of those repeat more than once. The same rate of repetition prevails in upper secondary level. Again, ultimate rates may be greater due to kids still being enrolled.

A crucial question is whether there is an impact of grade repetition on grade attainment and cognitive achievement. Because of the various issues of selection mentioned above, it is not possible on the basis of descriptive statistics to answer this question. We can nevertheless look at relationship between being a grade repeater and educational outcomes. It appears, as expected, that repeaters have lower grade attainment. There is a statistically significant difference of half a year of education between primary school repeaters and non-repeaters (Table 3.5). The average level of education is also significantly lower for primary school repeaters. However, among those who finally are able to enter secondary school, those who have repeated at least one grade at primary school are not more likely to repeat in secondary school.

Beyond grade repetition, we are also interested in the prevalence and implications of schooling interruptions, especially those that of long duration (more than a month).

³ This represents another possible cost of a system with high rates of failure/repetition.

Our data suggest that this is a rare phenomenon, affecting less than 4 percent of the children at both primary or at lower secondary level. Where interruptions occur, half are for one month or less, and only one-fifth are for longer than three months (Table 3.6). Illness is given as the reason for the interruption in two-thirds of the cases. Therefore it appears that, unlike repetition and dropout, interruptions are not a major phenomenon. But this may merely mean that serious illnesses or other family events that in other settings might lead children to withdraw from school temporarily instead end up causing them to leave school for good. This will be an important topic for later multivariate analysis.

Section 4: Dropouts and Secondary School Transitions

Next we examine rates of transition from primary to secondary school. We therefore focus our analysis on children 14-20, since this would be the potential cohort that would have transitioned to secondary school in the last few years. First we present some basic descriptive data for this sample. The first row of Table 4.1 shows the share of children 14-20 who have ever been enrolled in school. Overall, 81.6% of the children have been enrolled at some point, a figure that as expected from above is higher for males (86.9%) than females (75.8%). Also as anticipated, the share is higher in Dakar (92.6%) and other urban areas (88.4%) than in rural areas (72.6%). We also find that there is a positive relationship between ever being enrolled and our durable and household goods indices. For example, the share ever enrolled increasing from 65% to 93% of the population from the lowest to highest quintile of the housing index (Table 4.2). We also find that Muslims are less likely to have their children in school, and that the Diola ethnic group has the highest percentage of children ever enrolled, nearly 95%.

Table 4.3 also presents evidence to the effect that 14-20 year olds whose parents have no education are much less likely to have been enrolled in school than other children whose mothers' and fathers' have attended at least some school. However, conditional upon the parents having attended school, their level does not seem to be important in determining the initial enrollment decision.

Among those who have ever been enrolled, the share that completes primary school is 52%. Again males, those living in Dakar, and to a lesser extent in other urban areas, are more like to complete primary school (Table 4.1). Children in this age group from the higher wealth groups are far more likely to have completed primary school, conditional on ever being enrolled (Table 4.2). Again, we find that Muslims performance on this indicator lags behind the Christian population. Primary school completion rates are also strongly related to the educational experience of both mothers and fathers. For example, among mothers with no education, less than half of their children 14 – 20 have completed primary school, in contrast to over 90% for mothers whose education level exceeded lower secondary school (Table 4.3).

These figures confirm that, rather than low rates of children never enrolling, a major problem in the education sector of Senegal is the large share who dropout, particularly prior to the completion of primary schooling, among those children who begin school. We first look at the reason reported for leaving primary school before the completion of the final year, CM2. Tables 4.4 and 4.5 indicate the reasons reported by boys and girls, respectively, in order of their frequency. Over half of the boys 14-20 years of age report that they dropped out of primary because they performed poorly and did not pass the *entrée en 6^e* exam (the entrance exam for lower secondary). Ten percent indicated that they left school to help their parents, presumably to work at home or in the paid labor force. Among girls, a slightly higher share report that they drop out to help their parents and 7.4 percent indicate they leave school because of an accident or disease.

Once a child manages to complete primary school, the likelihood of going on to the secondary level is fairly high. Just over three-quarters of the children who complete primary school transition into secondary school (Table 4.1). The share is slightly higher among males than females. The share of primary school completers transitioning to secondary school is lowest in Dakar, 70.3%, as compared to other urban areas where the comparable figure is 83.5. There is a small gradient across the wealth distribution in terms of the effect on the probability that a child who completes primary school will transition on to secondary school. Of course much of the effect of wealth on secondary entry comes through the higher primary completion rates of better-off children. We find the expected pattern from earlier with regard to ethnicity: the Diola are far more likely to send their children to secondary school, conditional upon completing primary school, than other ethnic groups. We also find a positive relationship between parental education and the probability of transitioning to secondary school conditional upon completing primary school (Table 4.3).

Among those who do complete primary school but do go on to attend secondary school, the primary reason recorded for both boys (84%) and girls (75%) is that they failed the entrance exam. Among boys, the inability to pay is given as the reason for 4.3%, and for girls for 7.7 % of the respondents who do not continue to secondary school. Nearly 7% of the female respondents report that primary school was a sufficient education, hence there was no need to continue, while this response was reported for less than 2% of the males. Note, however, that overall few respondents of either gender gave this answer.

We have relatively few children in our sample of 14-20 year olds who have left secondary school without completing it (Table 4.6 and 4.7). This in part reflects that the younger children in the age interval of 14-20 examined are still in their early years of secondary school. Among those that do drop-out, the most frequent response for both boys and girls is that they move. A failing performance is the second most frequent response.

Section 5: Test Scores

In this section of the report we discuss the correlations between the original 1996 PASEC test scores and the tests administered in 2003, as well as between the scores on both the 1996 and 2003 tests and the educational attainment of children.

As discussed in the introduction, in 1996, the PASEC administered French and math tests to the students at the end of their second year of schooling. Table 5.1 presents the correlation coefficients between these children's scores on the 1996 tests and their subsequent grade attainment. These are statistically significant, and take on a value of 0.32 for French and 0.36 for math. Tables 5.2 and 5.3 show the relationship between the test performance and subsequent grade attainment in a more nuanced way by dividing the sample into quintiles according to their 1996 test scores. We see that test scores at the end of second grade are positively associated with subsequent schooling attainment; the difference in subsequent attainment between those scoring in the bottom quintile and the top quintile is around two years of schooling. More dramatic is the relationship between second year test score ranking and the probabilities of (1) completing primary school and (2) entering lower secondary school. For example, only one-fifth of the students in the lowest quintile of the math score distribution went on to complete primary school, compared with nearly three-quarters of those students in the highest quintile.

We can similarly look at the relationship between grade attainment and the outcomes of the tests administered in 2003. Note that this sample is different (significantly larger) than the sample reported on above since it includes both children who were in the original PASEC and who could be located seven years later, as well as children who were excluded from the original PASEC. Recall that the latter include children who may never have been to school, or went to a school (including the PASEC school or an alternative) but were not in the original PASEC sample. All of the correlations coefficients in Table 5.4 are significant at the 5% level, and are all remarkably close, around 0.4. When we examine actual grade attainment by quintiles of test performance we find that there is a marked gradient whereby the mean grade attainment is much higher for those in the upper quintiles of the 2003 test score distribution (Table 5.5 through 5.8). Interestingly, the gradient appears to be larger than for the 1996 tests, and in general, is larger among the oral math and life skills tests than the written math and French tests.

As with the 1996 tests, we find a dramatic relationship between test performance on the one hand and primary school completion and lower secondary entry, on the other. For example, only 5.4 percent of the students in the lowest quintile of the oral math scores entered lower secondary schools, compared with more than two-thirds of the students in the upper quintile.

It is also noteworthy that the correlation coefficients between the various math, French and life skill tests are all statistically significant and quite high in both 2003 and 1996 (Table 5.1 and 5.4). The correlation coefficient between written math and French in 2003 is 0.72, almost the same as 0.70 in 1996. The lowest correlation coefficient is

between the life skills test that we administered orally in 2003 and the written math test, with a value of 0.43. This is reassuring as it suggests the tests are able to capture student abilities, which we would expect to be highly correlated across subjects.

In Table 5.9 we directly compare the 1996 and 2003 test scores for the PASEC sample. The inter-period correlation coefficients for each test are statistically significant at the 5% level, with values ranging from 0.29 between the 2003 written French test and both the French and math tests in 1996, to a high of 0.37 between the written oral math in 2003 and the written French in 1996. We look more closely at the relationship of test scores over time in Table 5.10 and 5.11, which gives the 2003 test scores by quintiles of the 1996 French and math score distributions. How a child performed in 1996 turns out to be a strong predictor of test scores in 2003. For example, the mean oral math test score was 50.3 among those scoring in the lowest quintile of the 1996 math test, versus 72.4 in the highest quintile. Also of interest is that the magnitude of the relationship in test scores for all 2003 tests, written and oral, math and French, are quite similar across the quintiles for both the 1996 math and French tests.

Section 6: Perceptions about School

In this section we present the descriptive results of the perceptions of parents and children about schooling. We disaggregate the results by the respondent's position in the household, distinguishing between the head, the spouse of the head, and boys and girls age 12 to 20, which represent the potential age group currently attending (lower or upper) secondary school. Among the heads of household, 27.4 percent are females. Among the spouse of the head, 99.7 percent are females. When presenting the results below, we do not distinguish the gender of the head since there is no difference in the response among male and female heads.

A concern with the interpretation of the results that follow is that not all heads responded to the survey. In some households, for example, it was only the spouse of the head, or the child her/himself. This raises the prospect that there was some sort of selection process going on, whereby, for example, heads whose child did not attend school, or who dropped out early, self-selected not to respond. To address this possibility, we first examined the distribution of households among responding and non-responding according to three mutually exclusive categories: those households where no children ever attended school (9.7 percent of all households); households with at least one child 14-20 who attended school but with no child still in school now (5.4 percent of households); and households with at least one child in this age group still enrolled in school (84.9 percent). We find that there are no differences in the percentages of households in these categories among respondents and non-respondent heads. Likewise, when we stratify the results by these groups, there is no difference in the perceptions reported. This alleviates much of the concern over bias from selective non-response.

Nearly all parents, whether they are the household head or spouse of the head, as well as nearly all boys and girls between 12 and 20, indicate that attending school is important (Table 6.1). Interestingly in view of the gender schooling differences observed in the sample, there is no statistical difference in the response regarding the importance of girls and boys going to school. A similar percentage of household heads believe that good grades are important, although this view is not as universally held by spouses of head, as well as boys and girls. We also find that both mothers and fathers with no education respond less frequently that getting good grades in school is important than parents with any level of education (Table 6.2).

When we ask about the importance of being accomplished in sports or music, three-quarters of the heads gave success in this area as being of importance, although the difference accorded the importance of grades and extra-curricular activities is negligible for boy and girl respondents. When we stratify these responses by ethnicity, we find that one ethnic groups, the Severe, give less importance to excelling both in sports and music, as well as that their children be 'have fun' (either in or out of school) than other groups (Table 6.3). Respondents questioned about the level of schooling that is considered desirable generally show strong support for high education attainment: 90 percent of the heads, 84 percent of the spouses, 87 percent of the boys, and 83 percent of the girls

responding that they would like to see their children receive the baccalaureate (Table 6.4).

We also explore the viewpoints of children 12-20 about a number of issues relating to teachers and the classroom experience (Table 6.5). In terms of the degree of encouragement provided students at school, among both boys and girls, nearly 90 percent indicated that the teachers are encouraging to students. However, around one-third of both the boys and girls indicated that they did not think the teachers cared about the academic success of their students, while over four-fifths of the children report that teachers were concerned about completing the curriculum. There was no difference in the view of girls and boys regarding the equality of treatment in the schools – nearly 90 percent reported that there was no gender discrimination. We also asked female respondents directly about sexual harassment in the classroom. Table 6.6 indicates that 40 out of 1200 girls between the ages of 11 and 25 reported having been the victim of sexual harassment in school.

When queried regarding whether there were classes on sexual education or HIV/AIDS in school, 60 percent of both boys and girls answered affirmatively. An overwhelming share, over 95 percent of children 12-20, also report that they felt this is important and necessary. Among persons 25 to 55, approximately 90 percent agreed with this view.

Section 7: Conclusions

In this report we have presented some preliminary findings of our study on schooling and academic performance in Senegal. We examined correlates of education outcomes such as school enrollments, grade repetition, dropping out and progression to secondary school, and cognitive skill acquisition. We also examined some subjective perceptions of both students and their parents about the value of school and the nature of the schools and teachers in their communities. These results are a first step in our efforts to understand the individual, household, school, and community determinants of school behavior and outcomes that ultimately will lead to conclusions on policies to improve access to schooling and learning in Senegal.

The relationships and correlations discussed in the previous sections of this report must be viewed with caution-- firm causal connections cannot be inferred from these descriptive results-- we nevertheless find the results of the descriptive analysis to be quite interesting on their own as well as being suggestive of areas in need of more careful study. For wide range of outcomes, such as enrollment, school attainment, and the probability of dropping out, we find consistent differences by gender: girls are clearly disadvantaged and less successful in the education system relative to boys. Despite this general finding, we also note that in terms of subjective perceptions of parents about education, there is little difference in whether respondent is a male or female. Adults seem to value schooling of girls and boys equally, and highly.

Likewise, the perceptions of the importance and nature of the schooling experience among boys and girls of school age are quite similar for both genders. For example, 90% of both boys and girls report no gender-related discrimination in their schooling experience.

Region is another important factor in schooling outcomes. Rural children are clearly less likely to be enrolled and are less likely to progress through school, whether we consider completing primary school or going on to attend secondary school. Parental education is strongly related to the success of their children in school, as is the wealth of the family. Differences in schooling among ethnic groups are generally small, although some schooling outcomes, such as enrollment probabilities, are slightly better among the Diola than other groups. Muslim children generally perform worse than the Christian population with respect to all outcomes, and these gaps often quite large. However, this observation, as with the others reported in this paper, need to be tempered by the fact that correlations do not control for the range of other factors that may confound such relationships. For example, it is possible that once we control for location, parental education, wealth, etc, that religion may not be an important determinant of schooling and academic performance.

Grade repetition represents a monumental problem in Senegal, as our data confirm: with more than half the children who enter primary school repeating at least once. We find that repeaters perform worse than non-repeaters in terms of subsequent

grade attainment. This may not be a causal relationship, but instead may simply reflect the joint influence of other factors on both these outcomes.

The problem of disentangling association and causation is particularly important in drawing inferences from the interesting correlations we obtain for test scores. Our data show a strong positive relationship between test scores in second grade and the subsequent probability of both completing primary school and continuing on to secondary school. This suggests that early learning and academic performance is a good predictor of subsequent academic achievement. This does not mean there is a causal relationship. It could simply be that the same household characteristics that promote good test outcomes in the early years of education (for example, the degree of parental education and interest in their children's schooling) also raise the likelihood of the child continuing on to secondary school. Subsequent multivariate analysis will help to explain the association of early performance progression through school.

However, regardless of the pathways that relate test score outcomes in early grades to subsequent performance, the strong relationship is nevertheless an important finding: it implies that children who are left behind in early years are at continual risk of failing performance in the educational system. We find as well that these children do relatively poorly in the accumulation of life skills as measured in the oral exam administered in 2003. Therefore the results even as they stand suggest the benefits of targeting poor academic performers early in school for special attention. Other clear policy recommendations for improving educational outcomes and the efficacy of schooling in Senegal, as well as gender equity, will emerge as more sophisticated econometric techniques are brought to bear on the data.

Table 1.1: Having attended or attending school, for individuals aged 6 to 21, by gender

| Group | N | Percent | Std. Err. | Std. Dev. | [95% Conf. Interval] | |
|--------------------|------|---------|-----------|-----------|----------------------|-------|
| Girls | 4434 | 0.74 | 0.01 | 0.44 | 0.73 | 0.76 |
| Boys | 4664 | 0.81 | 0.01 | 0.39 | 0.80 | 0.82 |
| All | 9098 | 0.78 | 0.00 | 0.42 | 0.77 | 0.79 |
| Diff | | -0.07 | 0.01 | | -0.09 | -0.05 |
| Degrees of freedom | 9096 | | | | | |

Ho: mean(girls) - mean(boys) = diff = 0

Ha: diff < 0

Ha: diff != 0

Ha: diff > 0

t = -8.2125

t = -8.2125

t = -8.2125

P < t = 0.0000

P > |t| = 0.0000

P > t = 1.0000

Table 1.2: Share having attended or attending school, for individuals aged 6 to 21, by urban/rural

| Region | N | Percent | Std. Err. | Std. Dev. | [95% Conf. Interval] | |
|--------------------|------|---------|-----------|-----------|----------------------|------|
| Urban | 4104 | 0.88 | 0.01 | 0.33 | 0.87 | 0.89 |
| Rural | 4994 | 0.70 | 0.01 | 0.46 | 0.68 | 0.71 |
| All | 9098 | 0.78 | 0.00 | 0.42 | 0.77 | 0.79 |
| Diff | | 0.18 | 0.01 | | 0.16 | 0.20 |
| Degrees of freedom | 9096 | | | | | |

Ho: mean(urban) - mean(rural) = diff = 0

Ha: diff < 0

Ha: diff != 0

Ha: diff > 0

t = 21.2695

t = 21.2695

t = 21.2695

P < t = 1.0000

P > |t| = 0.0000

P > t = 1.0000

Table 1.3: Probability of having ever attended school, by age

| Age | All | | Urban | | Rural | |
|-----|-----|------|-------|------|-------|------|
| | N | Prob | N | Prob | N | Prob |
| 6 | 482 | 0.28 | 165 | 0.47 | 319 | 0.19 |
| 7 | 498 | 0.67 | 188 | 0.75 | 314 | 0.62 |
| 8 | 575 | 0.76 | 214 | 0.87 | 367 | 0.70 |
| 9 | 497 | 0.82 | 197 | 0.91 | 301 | 0.76 |
| 10 | 559 | 0.81 | 225 | 0.88 | 336 | 0.77 |
| 11 | 516 | 0.85 | 223 | 0.93 | 293 | 0.79 |
| 12 | 583 | 0.81 | 233 | 0.90 | 350 | 0.76 |
| 13 | 577 | 0.85 | 263 | 0.93 | 315 | 0.79 |
| 14 | 857 | 0.85 | 397 | 0.91 | 461 | 0.80 |
| 15 | 816 | 0.84 | 376 | 0.93 | 440 | 0.77 |

Table 1.4: Distribution of ages of entry into school

| Age at Entry | Distribution (%) |
|--------------|------------------|
| ≤5- | 1.21 |
| 6 | 14.15 |
| 7 | 70.27 |
| 8 | 6.91 |
| 9 | 4.02 |
| >10+ | 3.45 |
| Total | 100 |

Table 1.5: Probability of having ever attended school, by ethnic group, children 6 to 21 years of age

| Ethnie du Chef du Menage | Probability | N |
|--------------------------|-------------|-------|
| Wolof/Lébou | 0.81 | 3,149 |
| Poular/Toucouleur | 0.76 | 1,878 |
| Sévère | 0.75 | 1,808 |
| Diola | 0.89 | 575 |
| Mandingue/Sosé | 0.72 | 1,181 |
| Soninké | 0.67 | 120 |
| Autre Sénégalais | 0.88 | 217 |
| Autre non Sénégalais | 0.94 | 54 |
| Français | 0.72 | 65 |

Table 1.6: Probability of having ever attended school, by religious group and by gender, children 6 to 21

| Religion du Chef du Menage | N | Sexe | |
|----------------------------|-------|-------|-------|
| | | Femme | Homme |
| Musulman | 8,611 | 0.73 | 0.81 |
| Chrétienne | 408 | 0.91 | 0.89 |
| Animiste | 79 | 0.81 | 0.90 |

Table 1.7: Probability of having ever attended school, by father's education level, children 6 to 21 years of age

| Level of Schooling | Prob | N |
|--------------------|------|------|
| Aucun | 0.69 | 2967 |
| Primaire incomplet | 0.89 | 947 |
| Primaire complet | 0.89 | 772 |
| College incomplet | 0.92 | 517 |
| College complet | 0.94 | 463 |
| Lycée incomplet | 0.97 | 280 |
| Lycée complet | 0.95 | 272 |
| Université | 0.98 | 298 |

Table 1.8: Probability of having ever attended school, by mother's education level, children 6 to 21 years of age

| Level of schooling | Prob | N |
|--------------------|------|-------|
| Aucun | 0.74 | 4,889 |
| Primaire incomplet | 0.91 | 903 |
| Primaire complet | 0.91 | 702 |
| College incomplet | 0.97 | 333 |
| College complet | 0.95 | 270 |
| Lycée incomplet | 1.00 | 60 |
| Lycée complet | 0.96 | 84 |
| Université | 0.94 | 33 |

Table 1.9: Probability of having ever attended school, by quartile of the wealth distribution, as measured by durable characteristics and dwelling characteristics, children 6 to 21 years of age

| Wealth Distribution | Durable Ownership | | Dwelling Characteristics | |
|---------------------|-------------------|------|--------------------------|------|
| | Prob | N | Prob | N |
| Lowest quartile | 0.64 | 2468 | 0.65 | 2369 |
| Second quartile | 0.69 | 2027 | 0.72 | 2228 |
| Third quartile | 0.82 | 2328 | 0.84 | 2258 |
| Highest quartile | 0.92 | 2298 | 0.91 | 2258 |

Table 1.10: Probability of having ever attended school, by household size, children 6 to 21 years of age

| Household Size | Prob | N |
|----------------|------|------|
| 1-9 | 0.64 | 6203 |
| 10-12 | 0.63 | 4298 |
| 13-16 | 0.59 | 4287 |
| 17-30 | 0.58 | 4296 |

Table 1.11: Probability of having ever attended school, by gender of the head of household, children 6 to 21

| Gender of Head | N | Prob | Std. Err. | Std. Dev. | [95% Conf. Interval] | |
|--------------------|------|-------|-----------|-----------|----------------------|-------|
| Male | 6941 | 0.76 | 0.01 | 0.43 | 0.75 | 0.77 |
| Female | 2162 | 0.84 | 0.01 | 0.37 | 0.82 | 0.85 |
| All | 9103 | 0.78 | 0.00 | 0.42 | 0.77 | 0.79 |
| Diff | | -0.08 | 0.01 | | -0.10 | -0.06 |
| Degrees of freedom | 9101 | | | | | |

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

t = -7.5912 t = -7.5912 t = -7.5912

P < t = 0.0000 P > |t| = 0.0 P > t = 1.0000

Table 1.12: Probability of the head of household being a woman, by quartile of the wealth distribution, measured on durable goods and dwelling characteristics

| Wealth Distribution | Durables Probability | Dwelling characteristics Probability |
|---------------------|-------------------------|---|
| Lowest quartile | 0.21 | 0.14 |
| Second quartile | 0.20 | 0.21 |
| Third Quartile | 0.26 | 0.27 |
| Highest Quartile | 0.27 | 0.33 |

Table 1.13: Mother's education, by gender of the household head

| Gender of Head | N | Prob | Std. Err. | Std. Dev. | [95% Conf. Interval] | |
|--------------------|-------|-------|-----------|-----------|----------------------|-------|
| Male | 9033 | 1.63 | 0.01 | 1.22 | 1.60 | 1.65 |
| Female | 3034 | 2.04 | 0.03 | 1.53 | 1.98 | 2.09 |
| All | 12067 | 1.73 | 0.01 | 1.32 | 1.71 | 1.75 |
| Diff | | -0.41 | 0.03 | | -0.46 | -0.36 |
| Degrees of freedom | 12065 | | | | | |

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0

t = -15.0295 t = -15.0295 t = -15.0295

P < t = 0.0000 P > |t| = 0.000 P > t = 1.0000

Table 2.1: Years of school, individuals aged 20 to 35 years

| Group | N | Mean | Std. Err. | Std. Dev. | [95% Conf. Interval] | |
|--------------------|------|-------|-----------|-----------|----------------------|-------|
| Femme | 2118 | 3.61 | 0.09 | 4.15 | 3.43 | 3.79 |
| Homme | 1624 | 5.69 | 0.11 | 4.43 | 5.47 | 5.91 |
| All | 3742 | 4.51 | 0.07 | 4.40 | 4.37 | 4.65 |
| Diff | | -2.08 | 0.14 | | -2.36 | -1.80 |
| Degrees of freedom | 3740 | | | | | |

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0

Ha: diff != 0

Ha: diff > 0

t = -14.7481

t = -14.7481

t = -14.7481

P < t = 0.0000

P > |t| = 0.0000

P > t = 1.0000

Table 2.2: Years of school, by gender

| Nombre d'Années de Scolarisation | Female | | | Male | | |
|----------------------------------|--------|---------|--------|-------|---------|--------|
| | Freq. | Percent | Cum. | Freq. | Percent | Cum. |
| 0 | 997 | 47.14 | 47.14 | 403 | 24.85 | 24.85 |
| 1 | 14 | 0.66 | 47.80 | 14 | 0.86 | 25.71 |
| 2 | 34 | 1.61 | 49.41 | 24 | 1.48 | 27.19 |
| 3 | 75 | 3.55 | 52.96 | 63 | 3.88 | 31.07 |
| 4 | 89 | 4.21 | 57.16 | 67 | 4.13 | 35.20 |
| 5 | 126 | 5.96 | 63.12 | 126 | 7.77 | 42.97 |
| 6 | 396 | 18.72 | 81.84 | 393 | 24.23 | 67.20 |
| 7 | 28 | 1.32 | 83.17 | 31 | 1.91 | 69.11 |
| 8 | 35 | 1.65 | 84.82 | 50 | 3.08 | 72.19 |
| 9 | 59 | 2.79 | 87.61 | 64 | 3.95 | 76.14 |
| 10 | 114 | 5.39 | 93.00 | 146 | 9.00 | 85.14 |
| 11 | 21 | 0.99 | 94.00 | 26 | 1.60 | 86.74 |
| 12 | 33 | 1.56 | 95.56 | 43 | 2.65 | 89.40 |
| 13 | 86 | 4.07 | 99.62 | 147 | 9.06 | 98.46 |
| ≥14 | 1 | 0.38 | 100.00 | 1 | 1.64 | 100.00 |
| Total | 2115 | 100 | | 1622 | 100 | |

Table 2.3: Level of schooling achieved, by gender, 20 to 35 years old

| Level of Education | Female | | | Male | | |
|--------------------|--------|---------|--------|------|---------|--------|
| | N | Percent | Cum. | N | Percent | Cum. |
| Aucun | 990 | 46.37 | 46.37 | 400 | 24.42 | 24.42 |
| Primaire incomplet | 391 | 18.31 | 64.68 | 391 | 23.87 | 48.29 |
| Primaire complet | 359 | 16.81 | 81.50 | 300 | 18.32 | 66.61 |
| College incomplet | 130 | 6.09 | 87.59 | 175 | 10.68 | 77.29 |
| College complet | 108 | 5.06 | 92.65 | 123 | 7.51 | 84.80 |
| Lycée incomplet | 101 | 4.73 | 97.38 | 143 | 8.73 | 93.53 |
| Lycée complet | 30 | 1.41 | 98.78 | 35 | 2.14 | 95.67 |
| Université | 26 | 1.22 | 100.00 | 71 | 4.33 | 100.00 |
| Total | 2135 | 100 | | 1638 | 100 | |

Table 2.4: Level of schooling, 20 to 35 years old, by rural/urban

| Level of Education | Urban | | | Rural | | |
|--------------------|-------|---------|--------|-------|---------|--------|
| | N | Percent | Cum. | N | Percent | Cum. |
| Aucun | 434 | 21.60 | 21.60 | 956 | 54.20 | 54.20 |
| Primaire incomplet | 501 | 24.94 | 46.54 | 281 | 15.93 | 70.12 |
| Primaire complet | 387 | 19.26 | 65.80 | 272 | 15.42 | 85.54 |
| College incomplet | 205 | 10.20 | 76.01 | 100 | 5.67 | 91.21 |
| College complet | 163 | 8.11 | 84.12 | 68 | 3.85 | 95.07 |
| Lycée incomplet | 196 | 9.76 | 93.88 | 48 | 2.72 | 97.79 |
| Lycée complet | 47 | 2.34 | 96.22 | 18 | 1.02 | 98.81 |
| Université | 76 | 3.78 | 100.00 | 21 | 1.19 | 100.00 |
| Total | 2009 | 100 | | 1764 | 100 | |

Table 2.5: Numer of years of schooling, by rural/urban, 20 to 35 years of age

| Region | N | Mean | Std. Err. | Std. Dev. | [95% Conf. Interval] | |
|--------------------|------|------|-----------|-----------|----------------------|------|
| Urban | 1988 | 5.89 | 0.10 | 4.35 | 5.70 | 6.08 |
| Rural | 1754 | 2.95 | 0.09 | 3.91 | 2.77 | 3.13 |
| All | 3742 | 4.51 | 0.07 | 4.40 | 4.37 | 4.65 |
| Diff | | 2.94 | 0.14 | | 2.67 | 3.21 |
| Degrees of freedom | 3740 | | | | | |

Ho: mean(urban) - mean(rural) = diff = 0

Ha: diff < 0

Ha: diff != 0

Ha: diff > 0

t = 21.6391

t = 21.6391

t = 21.6391

P < t = 0.0000

P > |t| = 0.0000

P > t = 1.0000

Table 2.6: Number of years of education, by rural/urban, 20 to 35 years of age

| Nombre d'Années de Scolarisation | Urban | | | Rural | | |
|----------------------------------|-------|---------|--------|-------|---------|--------|
| | N | Percent | Cum. | N | Percent | Cum. |
| 0 | 439 | 22.10 | 22.10 | 961 | 54.88 | 54.88 |
| 1 | 12 | 0.60 | 22.71 | 16 | 0.91 | 55.80 |
| 2 | 33 | 1.66 | 24.37 | 25 | 1.43 | 57.22 |
| 3 | 84 | 4.23 | 28.60 | 54 | 3.08 | 60.31 |
| 4 | 94 | 4.73 | 33.33 | 62 | 3.54 | 63.85 |
| 5 | 150 | 7.55 | 40.89 | 102 | 5.83 | 69.67 |
| 6 | 508 | 25.58 | 66.47 | 281 | 16.05 | 85.72 |
| 7 | 36 | 1.81 | 68.28 | 23 | 1.31 | 87.04 |
| 8 | 52 | 2.62 | 70.90 | 33 | 1.88 | 88.92 |
| 9 | 78 | 3.93 | 74.82 | 45 | 2.57 | 91.49 |
| 10 | 193 | 9.72 | 84.54 | 67 | 3.83 | 95.32 |
| 11 | 38 | 1.91 | 86.46 | 9 | 0.51 | 95.83 |
| 12 | 62 | 3.12 | 89.58 | 14 | 0.80 | 96.63 |
| 13 | 179 | 9.01 | 98.59 | 54 | 3.08 | 99.71 |
| ≥14 | 28 | 1.41 | 100.00 | 5 | 0.29 | 100.00 |
| Total | 1986 | 100 | | 1751 | 100 | |

Table 2.7: Average number of years of education, by religious group, 20 to 35 years old

| Religion du Chef du Menage | Sexe | | All |
|----------------------------|-------|-------|------|
| | Femme | Homme | |
| Musulman | 3.50 | 5.63 | 4.42 |
| Chrétienne | 6.38 | 7.22 | 6.77 |
| Animiste | 4.14 | 5.67 | 5.11 |

Table 2.8: Average number of years of education, by ethnic group, 20 to 35 years of age

| Ethnie du Chef du Menage | Sexe | | All |
|--------------------------|-------|-------|------|
| | Femme | Homme | |
| Wolof/Lébou | 4.24 | 6.36 | 5.14 |
| Poular/Toucouleur | 3.04 | 4.93 | 3.87 |
| Sévère | 3.32 | 5.30 | 4.22 |
| Diola | 4.78 | 6.30 | 5.55 |
| Mandingue/Sosé | 2.39 | 5.02 | 3.43 |
| Soninké | 3.24 | 3.56 | 3.39 |
| Autre Sénégalais | 4.68 | 6.66 | 5.54 |
| Autre non Sénégalais | 5.56 | 11.63 | 8.41 |
| Français | 2.48 | 6.14 | 3.39 |

Table 2.9: Median level of education, by wealth quartiles, 20 to 35 years of age

| Wealth Distribution | Dwelling Characteristics | | | Durables | | |
|---------------------|--------------------------|------|------|----------|------|------|
| | Women | Men | All | Women | Men | All |
| Lowest quartile | 1.23 | 3.57 | 2.26 | 2.22 | 4.27 | 3.08 |
| Second quartile | 2.42 | 4.84 | 3.45 | 1.96 | 4.02 | 2.87 |
| Third quartile | 3.87 | 6.24 | 4.88 | 4.06 | 6.13 | 4.93 |
| Highest quartile | 5.92 | 7.28 | 6.52 | 5.47 | 7.43 | 6.36 |

Table 2.10: Median level of education, by mother's education, 20 to 35 years of age

| Education of Mother | Median Education of Child | N |
|---------------------|---------------------------|-------|
| Aucun | 2.00 | 1,507 |
| Primaire incomplet | 3.00 | 252 |
| Primaire complet | 3.00 | 201 |
| College incomplet | 4.00 | 88 |
| College complet | 4.50 | 110 |
| Lycée incomplet | 6.00 | 15 |
| Lycée complet | 5.00 | 18 |
| Université | 8.00 | 4 |

Table 2.11: Median level of education, by father's education, 20 to 35 years of age

| Education of Father | Median Education of Child | N |
|---------------------|---------------------------|-----|
| Aucun | 2.00 | 852 |
| Primaire incomplet | 3.00 | 354 |
| Primaire complet | 3.00 | 283 |
| College incomplet | 4.00 | 145 |
| College complet | 3.50 | 160 |
| Lycée incomplet | 4.00 | 79 |
| Lycée complet | 4.00 | 96 |
| Université | 5.00 | 59 |

Table 2.12: Average number of years of education, by father's education, 20 to 35 years of age

| Education of Father | Sexe | | All | N |
|---------------------|-------|-------|------|-----|
| | Femme | Homme | | |
| Aucun | 3.64 | 4.68 | 4.31 | 852 |
| Primaire incomplet | 5.24 | 6.64 | 5.94 | 354 |
| Primaire complet | 5.36 | 7.06 | 6.04 | 283 |
| College incomplet | 6.76 | 8.08 | 7.42 | 145 |
| College complet | 7.36 | 8.42 | 7.81 | 160 |
| Lycée incomplet | 8.29 | 9.14 | 8.77 | 79 |
| Lycée complet | 7.77 | 8.53 | 8.12 | 96 |
| Université | 9.94 | 9.83 | 9.90 | 59 |

Table 2.13: Average number of years of education, by mother's education, 20 to 35 years of age

| Education of Mother | Sexe | | All | N |
|---------------------|-------|-------|-------|-------|
| | Femme | Homme | | |
| Aucun | 4.39 | 5.09 | 4.78 | 1,507 |
| Primaire incomplet | 6.02 | 7.68 | 6.78 | 252 |
| Primaire complet | 5.45 | 7.79 | 6.70 | 201 |
| College incomplet | 7.42 | 8.41 | 7.90 | 88 |
| College complet | 8.20 | 8.47 | 8.31 | 110 |
| Lycée incomplet | 12.29 | 9.50 | 10.80 | 15 |
| Lycée complet | 7.30 | 8.50 | 7.83 | 18 |
| Université | 10.00 | 14.00 | 13.00 | 4 |

Table 3.1: Number of grades repeated at primary school, children 12 to 21 years of age

| Number of Times a Child Repeated a Grade | N | Percent |
|--|------|---------|
| 0 | 1664 | 34.8 |
| 1 | 1769 | 37.0 |
| 2 | 989 | 20.7 |
| 3 | 272 | 5.7 |
| ≥4 | 85 | 1.8 |
| Total | 4779 | 100 |

Table 3.2: Average number of grade repetitions at primary school, by father's education level, 12 to 21 years of age

| Education of Father | Average Number of Grades Repeated |
|---------------------|-----------------------------------|
| Aucun | 1.63 |
| Primaire incomplet | 1.64 |
| Primaire complet | 1.64 |
| College incomplet | 1.44 |
| College complet | 1.48 |
| Lycée incomplet | 1.39 |
| Lycée complet | 1.44 |
| Université | 1.35 |

Table 3.3: Average number of grade repetitions at primary school, by mother's education level, children 12 to 21 years of age

| Education of Mother | Average Number of Grades Repeated |
|---------------------|-----------------------------------|
| Aucun | 1.50 |
| Primaire incomplet | 1.50 |
| Primaire complet | 1.61 |
| College incomplet | 1.37 |
| College complet | 1.38 |
| Lycée incomplet | 1.39 |
| Lycée complet | 1.24 |
| Université | 1.13 |

Table 3.4: Average number of grades repeated in primary school, by quartile of the wealth distributions (measured by consumption of durable goods and housing characteristics), children 12 to 21 years of age

| Wealth Distribution | Durables | Housing |
|---------------------|-----------------------------------|---------|
| | Average number of grades repeated | |
| Lowest quartile | 1.65 | 1.67 |
| Second quartile | 1.70 | 1.66 |
| Third quartile | 1.55 | 1.64 |
| Highest quartile | 1.43 | 1.35 |

Table 3.5: Average number of years of education, by repeater status, children 12 to 21 years of age

| Group | N | Mean | Std. Err. | Std. Dev. | [95% Conf. Interval] | |
|--------------------|------|-------|-----------|-----------|----------------------|-------|
| Repeaters | 2093 | 6.44 | 0.05 | 2.28 | 6.35 | 6.54 |
| Non-repeaters | 977 | 6.96 | 0.10 | 3.07 | 6.77 | 7.16 |
| All | 3070 | 6.61 | 0.05 | 2.57 | 6.52 | 6.70 |
| Diff | | -0.52 | 0.10 | | -0.71 | -0.33 |
| Degrees of freedom | 3068 | | | | | |

Ho: mean(0) - mean(1) = diff = 0

Ha: diff < 0

Ha: diff != 0

Ha: diff > 0

t = -5.2510

t = -5.2510

t = -5.2510

P < t = 0.0000

P > |t| = 0.0000

P > t = 1.0000

Table 3.6: Length of interruption at primary school, in months, children 12 to 21 years of age

| Duration of Interruption (in Months) | N | Percent | Cum. |
|--------------------------------------|-----|---------|--------|
| 0 | 7 | 2.50 | 2.50 |
| 1 | 128 | 45.71 | 48.21 |
| 2 | 54 | 19.29 | 67.50 |
| 3 | 28 | 10.00 | 77.50 |
| 4 | 11 | 3.93 | 81.43 |
| 5 | 4 | 1.43 | 82.86 |
| 6 | 11 | 3.93 | 86.79 |
| 7 | 5 | 1.79 | 88.57 |
| 8 | 4 | 1.43 | 90.00 |
| 9 | 21 | 7.50 | 97.50 |
| ≥10 | 7 | 2.50 | 100.00 |
| Total | 280 | 100 | |

Table 4.1: Enrollments, Primary School completion and secondary school transition rates by gender and region

| Share of Children Aged 14-20 who: | Region | | | Gender | | |
|--|----------------|---------------|----------------|----------------|----------------|----------------|
| | Rural | Dakar | OtUrban | Male | Female | All |
| ...have ever been enrolled | 72.6 n=2197 | 92.6 n=935 | 88.4 n=1366 | 86.9 n=2343 | 75.8 n=2155 | 81.6 n=4498 |
| .. complete primary school (conditional upon having ever been enrolled) | 39.0 n=1596 | 67.2 n=866 | 58.2 n=1208 | 54.1 n=2037 | 49.3 n=1633 | 52.0 n=3670 |
| ... transition to lower secondary (conditional upon having ever been enrolled and having completed primary school) | 73.3 n=622 | 70.3 n=582 | 83.5 n=703 | 78.0 n=1102 | 73.5 n=805 | 76.1 n=1907 |

Table 4.2: Enrollment, Completion and Transition rates for children 14 to 20 year of age

| | Share of 14-20 year olds who have ever been enrolled in school | | Share of all 14-20 ever enrolled children who complete primary | | Share of all 14-20 primary completers who transition to lower secondary | |
|---------------------------|--|------|--|------|--|------|
| | % | N | % | N | % | N |
| Durable good index | | | | | | |
| Lowest quintile | 72.27 | 743 | 35.57 | 537 | 74.87 | 191 |
| Second quintile | 74.03 | 978 | 39.78 | 724 | 69.79 | 288 |
| Third quintile | 77.22 | 869 | 43.67 | 671 | 69.97 | 293 |
| Fourth quintile | 88.82 | 921 | 60.76 | 818 | 75.86 | 497 |
| Highest quintile | 93.24 | 991 | 69.16 | 924 | 82.47 | 639 |
| Housing index | | | | | | |
| Lowest quintile | 65.10 | 851 | 31.77 | 554 | 69.89 | 176 |
| Second quintile | 75.89 | 846 | 37.38 | 642 | 76.67 | 240 |
| Third quintile | 80.18 | 878 | 46.31 | 704 | 74.23 | 326 |
| Fourth quintile | 91.09 | 954 | 59.15 | 869 | 73.93 | 514 |
| Highest quintile | 93.01 | 973 | 72.04 | 905 | 80.37 | 652 |
| Religion | | | | | | |
| Muslims | 80.91 | 4258 | 51.35 | 3445 | 75.64 | 1769 |
| Christians | 94.39 | 196 | 60.54 | 185 | 82.14 | 112 |
| Animists | 92.68 | 41 | 60.53 | 38 | 86.96 | 23 |
| Ethnicity | | | | | | |
| Wolof | 85.13 | 1600 | 56.31 | 1362 | 73.01 | 767 |
| Pular | 75.85 | 911 | 53.26 | 691 | 76.09 | 368 |
| Sévère | 79.60 | 853 | 44.92 | 679 | 75.41 | 305 |
| Diola | 94.67 | 319 | 54.64 | 302 | 90.30 | 165 |
| Mande | 75.20 | 617 | 44.61 | 464 | 75.36 | 207 |
| Other | 89.88 | 168 | 56.95 | 151 | 81.40 | 86 |

Table 4.3: Enrollment, Completion and Transition rates, by parental education, children 14 to 20 year of age

| | Share of 14-20 year olds who have ever been enrolled in school | | Share of all 14-20 ever enrolled children who complete primary | | Share of all 14-20 primary completers who transition to lower secondary | |
|---------------------------|--|------|--|------|--|------|
| | % | N | % | N | % | N |
| Father's Education | | | | | | |
| None | 72.43 | 2666 | 43.45 | 1931 | 71.04 | 839 |
| Incomplete primary | 93.30 | 463 | 56.02 | 432 | 72.73 | 242 |
| Complete primary | 93.26 | 386 | 46.11 | 360 | 71.08 | 166 |
| Incomplete lower second. | 95.80 | 262 | 64.14 | 251 | 85.09 | 161 |
| Complete lower second. | 97.88 | 236 | 64.94 | 231 | 79.33 | 150 |
| Upper second and above | 98.79 | 413 | 76.96 | 408 | 89.17 | 314 |
| Mother's Education | | | | | | |
| None | 76.43 | 3296 | 45.53 | 2519 | 73.50 | 1147 |
| Incomplete primary | 95.23 | 419 | 60.65 | 399 | 71.49 | 242 |
| Complete primary | 97.21 | 323 | 56.37 | 314 | 76.27 | 177 |
| Incomplete lower second. | 98.82 | 170 | 81.55 | 168 | 87.59 | 137 |
| Complete lower second. | 96.40 | 139 | 72.39 | 134 | 87.63 | 97 |
| Upper second and above | 98.91 | 92 | 91.21 | 91 | 93.98 | 83 |

Table 4.4: Reason for dropping out of primary school, Boys 14 to 20 years of age

| Reason | N | Percent |
|----------------------------------|-----|---------|
| Echec scolaire | 218 | 54.36 |
| Autre | 103 | 25.69 |
| Aider les parents | 40 | 9.98 |
| Malad./accident | 15 | 3.74 |
| Ne peut pas payer | 8 | 2.00 |
| Deménagement | 8 | 2.00 |
| Le niveau suivant n'existait pas | 6 | 1.50 |
| Mariage | 2 | 0.50 |
| Harcelement sexuel | 1 | 0.25 |
| Total | 401 | 100 |

Table 4.5: Reason for dropping out of secondary school, Boys 14 to 20 years of age

| Reason | N | Percent |
|-------------------|----|---------|
| Demenagement | 24 | 43.64 |
| Echec scolaire | 21 | 38.18 |
| Ne peut pas payer | 4 | 7.27 |
| Malad./accident | 3 | 5.45 |
| Aider les parents | 3 | 5.45 |
| Total | 55 | 100 |

Table 4.6: Reason for dropping out of primary school, Girls 14-20 years old

| Reason | 4.6 | Percent |
|----------------------------------|-----|---------|
| Echec scolaire | 176 | 46.93 |
| Autre | 81 | 21.60 |
| Aider les parents | 50 | 13.33 |
| Malad./accident | 28 | 7.47 |
| Le niveau suivant n'existait pas | 11 | 2.93 |
| Ne peut pas payer | 10 | 2.67 |
| Demenagement | 8 | 2.13 |
| Mariage | 8 | 2.13 |
| Grossesse | 3 | 0.80 |
| Total | 375 | 100 |

Table 4.7: Reason for dropping out of secondary school, Girls 14 to 20 years of age

| Reason | N | Percent |
|----------------------------------|----|---------|
| Demenagement | 14 | 38.89 |
| Echec scolaire | 9 | 25.00 |
| Ne peut pas payer | 6 | 16.67 |
| Grossesse | 3 | 8.33 |
| Aider les parents | 2 | 5.56 |
| Le niveau suivant n'existait pas | 1 | 2.78 |
| Mariage | 1 | 2.78 |
| Total | 36 | 100 |

Table 5.1: Correlation matrix of 1996 tests and grade attainment

| 2003 | 1996 Tests | | |
|-------------|----------------|----------------|------------------|
| | French | Math | Grade Attainment |
| French n | 1 639 | | |
| Math n | 0.7029* 638 | 1 639 | |
| Grade n | 0.3258* 611 | 0.3560* 610 | 1 2384 |

*: significant at 5% level
n: number of observations

Table 5.2: Grade attainment, primary school completion rate, and secondary school students by 1996 French test scores

| 1996 French Test | Grade attainment | | | Primary completers % | Secondary starters % |
|------------------|------------------|--------|-----|----------------------|----------------------|
| | Mean | Median | N | | |
| Lowest quintile | 5.04 | 6.0 | 126 | 20.49 | 10.66 |
| Second quintile | 5.56 | 6.0 | 126 | 29.27 | 20.33 |
| Third quintile | 5.72 | 6.0 | 118 | 46.09 | 34.78 |
| Fourth quintile | 6.45 | 7.0 | 114 | 63.06 | 54.05 |
| Highest quintile | 6.86 | 7.0 | 127 | 73.17 | 65.85 |
| All | 5.92 | 6.0 | 611 | 46.13 | 36.87 |

Table 5.3: Grade attainment, primary school completion rate, and secondary school students by 1996 Math test scores

| 1996 Math Test | Mean | Median | N | Primary completers | Secondary starters |
|------------------|------|--------|-----|--------------------|--------------------|
| Lowest quintile | 5.11 | 5.0 | 136 | 21.05 | 13.53 |
| Second quintile | 5.36 | 6.0 | 112 | 33.33 | 26.85 |
| Third quintile | 6.04 | 6.0 | 108 | 44.76 | 35.24 |
| Fourth quintile | 5.94 | 6.0 | 127 | 56.56 | 46.72 |
| Highest quintile | 7.16 | 7.0 | 127 | 76.00 | 64.00 |
| All | 5.92 | 6.0 | 610 | 46.21 | 36.93 |

Table 5.4: Correlation matrix of 2003 tests and grade attainment

| | 2003 Tests | | | | Grade Attainment |
|-------------------|-----------------|-----------------|-----------------|-----------------|------------------|
| | Life Skills | Oral Math | French | Written Math | |
| Life Skills n | 1 2379 | | | | |
| Oral Math n | 0.5416* 2162 | 1 2227 | | | |
| French n | 0.5128* 1670 | 0.6008* 1579 | 1 1718 | | |
| Written Math n | 0.4329* 1599 | 0.6030* 1574 | 0.7199* 1593 | 1 1653 | |
| Grade n | 0.4028* 2288 | 0.4041* 2144 | 0.4108* 1654 | 0.3972* 1597 | 1 2384 |

*: significant at 5% level

n: number of observations

Table 5.5: Mean and Median grade attainment by quintile of 2003 Written French test

| 2003 Written French Test | Mean | Median | N | Primary completers | Secondary starters |
|--------------------------|------|--------|------|--------------------|--------------------|
| Lowest quintile | 4.80 | 5.0 | 362 | 21.49 | 10.75 |
| Second quintile | 6.15 | 6.0 | 244 | 44.30 | 35.44 |
| Third quintile | 6.32 | 6.0 | 308 | 46.82 | 42.47 |
| Fourth quintile | 6.90 | 7.0 | 405 | 63.54 | 60.00 |
| Highest quintile | 7.17 | 7.0 | 335 | 71.34 | 67.68 |
| All | 6.28 | 6.0 | 1654 | 50.56 | 44.04 |

Table 5.6: Mean and Median grade attainment by quintile of 2003 Written Math test

| 2003 Written Math Test | Mean | Median | N | Primary completers | Secondary starters |
|------------------------|------|--------|------|--------------------|--------------------|
| Lowest quintile | 4.93 | 5.0 | 339 | 22.78 | 10.44 |
| Second quintile | 5.71 | 6.0 | 239 | 38.33 | 29.52 |
| Third quintile | 6.50 | 6.0 | 390 | 53.02 | 46.19 |
| Fourth quintile | 6.84 | 7.0 | 181 | 67.42 | 60.67 |
| Highest quintile | 7.13 | 7.0 | 448 | 70.21 | 68.36 |
| All | 6.26 | 6.0 | 1597 | 51.14 | 44.30 |

Table 5.7: Mean and Median grade attainment by quintile of 2003 Oral Math test

| 2003 Oral Math Test | Mean | Median | N | Primary completers | Secondary starters |
|---------------------|------|--------|------|--------------------|--------------------|
| Lowest quintile | 3.67 | 4.0 | 424 | 12.35 | 5.42 |
| Second quintile | 4.41 | 5.0 | 382 | 32.91 | 21.09 |
| Third quintile | 5.30 | 6.0 | 498 | 41.82 | 34.09 |
| Fourth quintile | 6.18 | 6.0 | 483 | 58.04 | 50.22 |
| Highest quintile | 6.86 | 7.0 | 357 | 73.65 | 67.96 |
| All | 5.27 | 6.0 | 2144 | 44.67 | 36.74 |

Table 5.8: Mean and Median grade attainment by quintile of 2003 Life Skills test

| 2003 Life Skills Test | Mean | Median | N | Primary completers | Secondary starters |
|-----------------------|------|--------|------|--------------------|--------------------|
| Lowest quintile | 3.66 | 5.0 | 483 | 14.60 | 6.34 |
| Second quintile | 4.57 | 5.0 | 568 | 28.93 | 21.17 |
| Third quintile | 5.45 | 6.0 | 453 | 49.01 | 39.90 |
| Fourth quintile | 6.30 | 6.0 | 438 | 61.12 | 52.57 |
| Highest quintile | 6.81 | 7.0 | 346 | 70.12 | 66.16 |
| All | 5.22 | 6.0 | 2288 | 43.72 | 36.21 |

Table 5.9: Correlation matrix of 1996 and 2003 tests

| 1996 Tests | 2003 Tests | | | |
|------------|-------------|-----------|---------|--------------|
| | Life Skills | Oral Math | French | Written Math |
| French | 0.3463* | 0.3754* | 0.2938* | 0.3043* |
| n | 611 | 580 | 498 | 480 |
| Math | 0.3577* | 0.3454* | 0.2860* | 0.3292* |
| n | 611 | 580 | 498 | 480 |

*: significant at 5% level

n: number of observations

Table 5.10: Relationship between 1996 French test scores and 2003 test scores

| Quantiles of French Test 1996 | Mean Test Scores 2003 | | | |
|-------------------------------|-----------------------|--------------|----------------|-------------|
| | Oral Math | Written Math | Written French | Life Skills |
| Lowest quintile | 50.3 | 70.9 | 75.1 | 55.9 |
| Second quintile | 57 | 72.3 | 78.1 | 60.8 |
| Third quintile | 59.6 | 69.1 | 77 | 64.2 |
| Fourth quintile | 66.6 | 81 | 83.9 | 68.4 |
| Highest quintile | 72.4 | 85.2 | 87.7 | 72.2 |

Table 5.11: Relationship between 1996 Math test scores and 2003 test scores

| Quantiles of Math Test 1996 | Mean Test Scores 2003 | | | |
|-----------------------------|-----------------------|-----------------|-------------------|----------------|
| | Oral Math | Written Math | Written French | Life Skills |
| Lowest quintile | 51 | 68.9 | 73.7 | 55.9 |
| Second quintile | 58.7 | 72.4 | 79.6 | 61.8 |
| Third quintile | 62.1 | 74.4 | 80 | 63.8 |
| Fourth quintile | 63.2 | 76.6 | 82.9 | 89.4 |
| Highest quintile | 70.7 | 85.9 | 86.5 | 71.7 |

Table 6.1: Percent of respondents who believe it is important for your child to attend school, get good grades, and succeed in sports or music

| Respondent | Attend School | | Good Grades | Sports |
|-----------------------------|---------------|-------|-------------|--------|
| | Boys | Girls | | |
| Head of household | 99.8 | 97.8 | 99.8 | 75.1 |
| Spouse of head of household | 99.7 | 95.8 | 72.9 | 67.3 |
| Boys 12-20 | 99.8 | 98.5 | 83.4 | 85.9 |
| Girls 12-20 | 99.9 | 98.7 | 82.2 | 78.5 |

Table 6.2: Percent of mothers and fathers who believe it is important for children to get good grades in school

| Education Level | Mother | Father |
|-------------------------|--------|--------|
| None | 79.50 | 78.30 |
| Incomplete primary | 87.70 | 86.10 |
| Complete primary | 86.50 | 84.80 |
| Incomplete lower second | 86.70 | 89.20 |
| Complete lower second | 88.90 | 85.70 |
| Upper second and above | 88.90 | 87.80 |

Table 6.3: Perceptions by ethnic group

| Ethnic Group | Percent Who Believe It Is Important for Children to: | |
|--|--|--------------------------|
| | Be Amused in School | Excel in Sports or Music |
| Wolof/Lébou | 84.9 | 82.0 |
| Poular/Toucouleur | 84.9 | 76.9 |
| Sévère | 67.5 | 69.5 |
| Diola | 79.8 | 89.3 |
| Mandingue/Sosé, Soninké | 82.2 | 82.2 |
| Autre Sénégalais, Autre non Sénégalais, Français | 83.3 | 77.1 |

Table 6.4: Percent of respondents that desire that their children achieve the bacculaureate

| Respondent | Percent |
|-----------------------------|---------|
| Head of household | 89.7 |
| Spouse of head of household | 83.7 |
| Boys 12-20 | 86.9 |
| Girls 12-20 | 82.9 |

Table 6.5: Perceptions of boys and girls 12-20 about schooling

| Percent Who Responded That Teachers: | Boys | Girls |
|---|------|-------|
| Encourage students | 89.2 | 88.4 |
| Care about the academic success of children | 69.1 | 66.8 |
| Care about completing the curriculum | 85.4 | 82.9 |
| Treat boys and girls equally | 87.8 | 86.9 |

Table 6.6: Percentage of girls that report being a victim of sexual harrasment by age

| Age Group in Years | Percent | n |
|--------------------|---------|-----|
| 11-13 years old | 0.00 | 72 |
| 14-17 years old | 4.24 | 590 |
| 18-25 years old | 4.01 | 274 |