

**School Enrollment in the Democratic Republic of the Congo:
Family Economic Well-Being and Socio-demographic and Other Influencing Factors***

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I. Introduction

The Millennium Development Goals include achieving universal primary education. While there has been progress made toward this goal, it is still the case that in sub-Saharan Africa, much remains to be done to increase the percentage of youth who are enrolled in school. Low incomes and poor economic performance are among the factors that constrain children's participation in school. There is considerable evidence that in developing countries, family economic well-being is a key determinant of children's access to and progress in school (e.g., see Schultz, 1993; Lloyd and Blanc, 1996). Other social and demographic factors, including gender bias, child fostering, household size and composition, and parental educational attainment, among others, also come into play as factors influencing school enrollment.

This paper will examine school enrollment of youth in the Democratic Republic of the Congo (DRC), with a view to identifying the roles of family economic well-being, household socio-demographic factors, and other influences on the school enrollment of children. Results reported below are drawn from the recently-completed doctoral dissertation of Mabika (2010).

We use data from a 1999 survey that covered four provinces in the western portion of the Democratic Republic of the Congo. The survey took place at the end of a disastrous decade for the DRC, during which economic crisis, civil disorder, and then civil war were all prevalent.

There has been research on factors influencing school enrollment and educational attainment in the DRC, but that research has been focused on the capital, Kinshasa (see Shapiro and Tambashe, 1999, 2001, 2003, and Shapiro, 2010). However, Kinshasa is unique within the DRC – it is entirely urban, and its population, relative to the rest of the country, is both economically better off and also better-educated. Kinshasa is one of the four provinces (out of 11 nationally) covered in this study's data. The availability of data for three other provinces,

largely rural but each with some urban centers, provides a more complete picture of levels of and differences in children's access to schooling in the DRC and relevant influencing factors.

The next section of the paper provides a discussion of the economic difficulties experienced by the DRC over the past 35 years. In brief, a protracted period of poor economic performance from the mid-1970s until 1990 was followed by over a decade of an initially more severe and steady economic decline beginning in 1990. Following the overview of the economic situation, the paper examines descriptive data on school enrollments, with a focus on differences by gender, economic well-being, and place of residence. The final substantive section of the paper, after the descriptive analyses, reports results of multivariate analyses of school enrollment. The conclusions will discuss the implications of our research findings.

II. Economic Crisis in the Congo

Following independence from Belgium in 1960, the Congo experienced five years of political instability, including civil war and ethnic strife. In 1965 General Joseph Désiré Mobutu seized power in a coup d'état, and for the better part of a decade the city and the country experienced a period of political stability and economic growth. The former would continue, more or less, but not the latter. In particular, by the mid-1970s the combined effects of poor economic policies (including expropriation of businesses owned by foreigners and turning those businesses over to unqualified nationals, known then as Zairians) and the sharp decline in world copper prices that took place about that time (copper was by far the major source of export earnings and government revenues) were to precipitate a long, downward slide of the Congolese economy. Exacerbating the situation was the fact that the Mobutu regime was characterized by extremely

high levels of corruption at all levels of government – what some political scientists referred to as “kleptocracy.” This further contributed to what came to seem like a period of chronic crisis.

Economic growth from year to year was highly variable, and more often negative than positive. Likewise, inflation was persistent, ranging from roughly 25 to over 100 percent per year (Shapiro and Tollens, 1992), and the standard of living of the population (as measured by real GDP per capita) declined by almost 40 percent between 1973 and 1990 (Heston et al., 2006). This chronic crisis was accompanied by stagnation in the modern sector of the economy and steady growth in the informal sector.

Beginning in the latter half of 1990, the chronic economic crisis became acute. After a number of years of inflation averaging roughly 60 percent per year, very rapid inflation of 2,000-3,000 percent per year quickly emerged, as the country’s monetary authorities essentially abandoned any efforts to adhere to a structural adjustment program that had been adopted in the 1980s. The country was already in turmoil politically, with increasing calls for democracy and the ouster of President Mobutu. Following a little more than a year of very rapid inflation, in late September of 1991 soldiers, who had seen the real value of their salaries shrink to nearly nothing, initiated rioting, looting and generalized civil disorder, first in Kinshasa and then in urban centers elsewhere in the country. The modern sector of the country’s economy, much of it based in Kinshasa, shrank considerably, and foreign donors pulled out of the country. A second round of looting and pillaging, this time only by the military, took place at the end of January in 1993.

A rebellion that began in late 1996 and that was made possible by assistance from neighboring Rwanda resulted in the ouster of President Mobutu in May of 1997, but civil war reemerged in 1998. Rwanda and a number of other African nations were involved in the civil

war, which continued officially until 2003 and resulted in substantial loss of life and destruction of infrastructure. The 1990s, then, was a decade of a severe downward economic spiral in the DRC and in Kinshasa, along with considerable chaos politically.

Estimated real GDP per capita for the Congo for the period since 1970 (data are from the Penn World Tables, Heston et al., 2006) shows that from a peak of nearly \$1,600 in 1973, real GDP per capita fell by almost 75 percent, to only about \$400 in 2004. If one looks at year-to-year changes, it is apparent that between 1975 and 1990 the economic situation was bad: negative growth was realized during about three-quarters of the years. But after 1990 the situation was terrible: there was an unbroken string of negative growth from 1991 through 2002, and GDP per capita fell by more than 60 percent during the period.

Given the lengthy period of substantial economic deterioration in the DRC, school enrollment data from 1999 will undoubtedly reflect that poor economic performance. We turn now to an overview of relevant data.

III. School Enrollment: A Descriptive Overview

The data analyzed here are from a 1999 survey on the demand for education in the Congo. More than 3,000 households from four provinces in the west of the DRC – Bandundu, Bas-Congo, Kasai Occidental, and Kinshasa – were covered by the survey. There were more than 9,000 youth aged 6-24 in the surveyed households, and data were collected on the school enrollment of these youth as well as on various aspects of the households within which they resided.

Figure 1 below documents that for these youth covered by the survey, school enrollment, which officially is supposed to begin at age 6, in fact rises from age 6 to age 13. This is a reflection of delayed entry to schooling, which is quite prevalent in rural areas in particular.

Beginning at age 15, boys are distinctly more likely to be enrolled than girls, and urban youth have higher enrollment rates than rural youth, with the urban-rural differences being greatest at the youngest ages. The four provinces also differ by enrollment rates, with Kinshasa standing out as having especially high enrollment rates among those aged 6-11 as well as having comparatively high rates for youth aged 15 and above.

Table 1 shows enrollment rates by age (at three-year intervals) and by sex, place of residence, and province. The table confirms some of the relationships in Figure 1. At the youngest ages, enrollment rates of girls slightly exceed those of boys. By age 12, however, enrollment of boys is higher, and the gender gap generally gets larger as youth age. Enrollment rates are higher for urban youth than for their rural counterparts, with the differences being largest at the youngest ages. The highest enrollment rates are usually in Kinshasa, and this is especially the case for the two youngest age groups and for the oldest youth. For other ages, Bandundu shows comparatively high enrollment rates while the rates in Bas-Congo and Kasai Occidental are relatively low.

Enrollment rates by household standard of living and place of residence are shown in Figure 2. The classification of standard of living was based on a variety of housing characteristics (e.g., source of water, type of roof, toilet facilities, etc.), using multiple correspondence analysis (for details, see Mabika, 2010, ch. 5). Three groups are identified: poor, medium, and high. For the overall and rural samples, there is clearly a strong positive relationship between family economic well-being and enrollment rates. In the urban sample, however, this is not the case: children from poor households have a higher enrollment rate than those from medium households. We note, however, that the sample of poor urban children is small, consisting of fewer than 80 individuals.

We also examined bivariate relationships between school enrollment and a number of other factors likely to influence enrollment. These factors reflect household size and composition, sex of the household head, education of the household head and spouse, sex of the child, the child's relationship to the household head, parental survival status, and place of residence, among others. For the most part, these relationships (not shown here) were statistically significant.

IV. Multivariate Analyses of School Enrollment

We turn now to multivariate analyses. Logistic regressions were estimated, with school enrollment as the dependent variable and with a good number of explanatory variables. Results from the overall model that we estimate are shown in Table 2.

That is, Table 2 shows odds ratios of being enrolled in school at the time of the survey from these logistic regressions, for the 6,200 youth aged 6-14 covered by the survey, according to a wide variety of characteristics. These characteristics include sex of the child, relationship to the head of the household, province of residence, household size, education of the household head and education of the spouse of the head, sex of the household head, our three-category measure of family economic well-being, place of residence (urban vs. rural), the child's age, religion, and the number of children in the household under the age of 5. As is apparent in the table, there were significant differences within each set of characteristics except for that of the sex of the household head.

Boys were significantly more likely to be enrolled in school than girls, other things equal, while fostered-in children were less likely to be in school than children of the head of the household. There were significant differences in school attendance by province of residence,

with Bandundu province having higher enrollment rates than the other three provinces, *ceteris paribus*. Enrollment rates were significantly lower for children from households of 13 or more individuals, while greater schooling of the household head and spouse translated into higher school enrollment. Children from households of high economic status were about twice as likely to be enrolled in school as children from the other two family economic well-being groups, and those from urban households were more than twice as likely to be in school. The likelihood of being in school rose sharply with age up through age 13, and Catholics and Protestants were somewhat more likely to be in school than children from other religious groups. Finally, children from households where there were one or more children under age 5 were significantly less likely to be enrolled.

The results from Table 2, our full model, are for all youth aged 6-14. We also estimated models separately by sex, and these models are reported in Table 3. It is still the case that there are significant relationships within most groups of variables. At the same time, there are some differences in the relationships for girls and boys. Age patterns of enrollment show distinctly higher odds ratios for boys than for girls, consistent with the earlier observation of a gender difference in favor of boys emerging only after the first several years of eligibility for school. Girls in very large households are significantly less likely to be enrolled in school, whereas household size is not significantly related to enrollment of boys. Likewise, the presence of young children in the household appears to be more detrimental to girls' schooling. These results presumably reflect the greater likelihood of girls working at home than boys.

Urban youth are more likely to be in school than their rural counterparts, but the urban-rural gap is somewhat greater for girls than for boys. Likewise, higher economic well-being is

generally associated with a greater likelihood of school enrollment for both boys and girls, but differences by economic category are somewhat larger for boys than for girls.

We also estimated models separately for children from urban and rural households, and the results are shown in Table 4. Consider first gender differences. Among urban youth gender is not significant, while among rural youth boys are significantly more likely than girls to be enrolled in school, other things equal. Differences by province are not significant among urban youth, while in rural areas those in Bas-Congo and Kasai Occidental are less likely to be enrolled than those in Bandundu. In both urban and rural places, fostered-in children are less likely to be in school and education levels of the household head and spouse are significantly positively linked to enrollment. Likewise, youth from high-standard-of-living households are 2.5 times more likely than those from medium households to be enrolled, with enrollment rates of those from poor households not being significantly different. Odds ratios increase with age more rapidly for rural youth, reflecting the much lower rural enrollment rates at the youngest school ages. And the presence of children under age five is a significant inhibitor of enrollment among rural youth, but not among their urban counterparts.

The results from the different multivariate analyses are summarized in Figures 3, 4, and 5, showing predicted probabilities of school enrollment for various characteristics. More specifically, Figure 3 shows the predicted probabilities of enrollment by socioeconomic group, separately for girls and boys. In each case, youth from the highest group were distinctly more likely to be enrolled in school than the other two groups, for which the predicted probabilities were close to one another. Further, the differences were greatest at ages 6 and 7. Clearly, children who are not economically advantaged are much less likely to begin school on time as compared to their better-off counterparts.

Figure 4 presents the same data, but with a focus on gender differences. At all three socioeconomic levels, boys tend to have higher predicted enrollment rates than girls. However, among the high socioeconomic status group the advantage for boys disappears after a few years, and gender equity is apparent for most of the age interval.

Finally, Figure 5 shows predicted probabilities of enrollment by province and by urban and rural residence within each province. Not surprisingly, urban youth are more likely to be in school than their rural counterparts. However, it is surprising that the predicted probabilities of enrollment in Kinshasa are smaller than those in urban places in each of the three provinces.

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Figure 1. Enrollment status and rates by age, and other ratios, youth aged 6-24

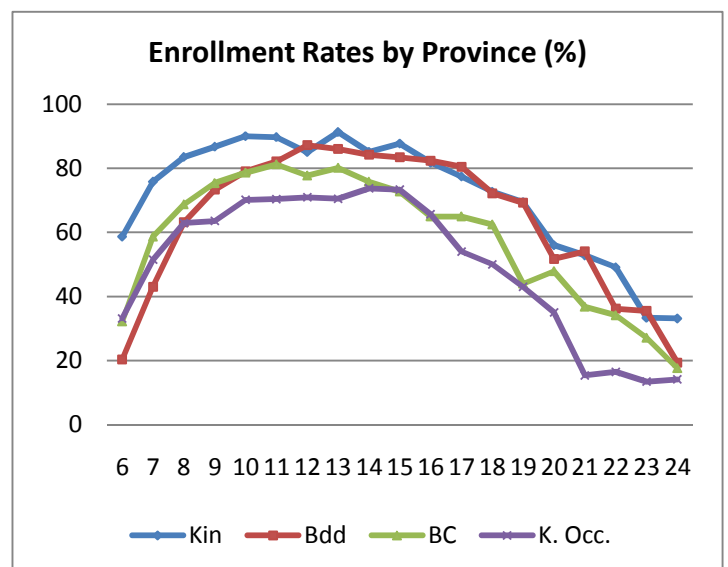
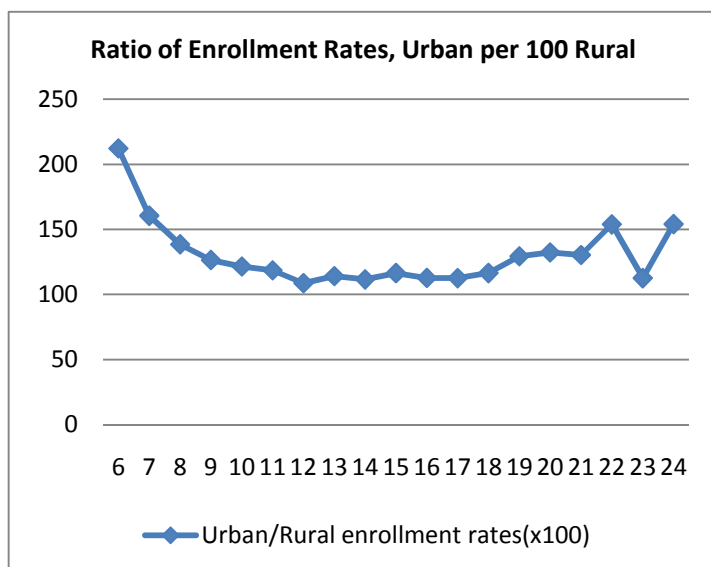
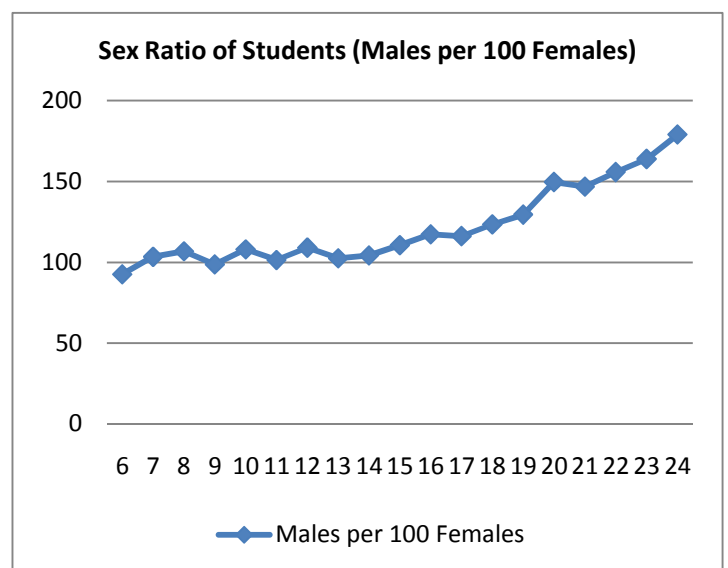
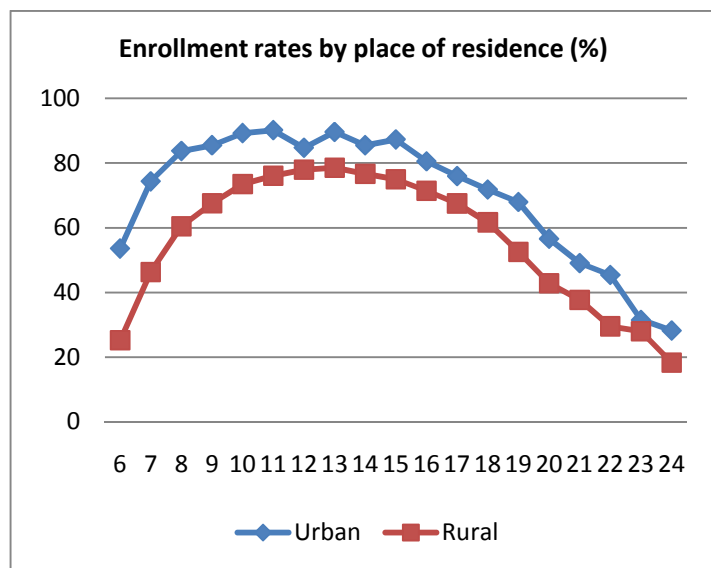
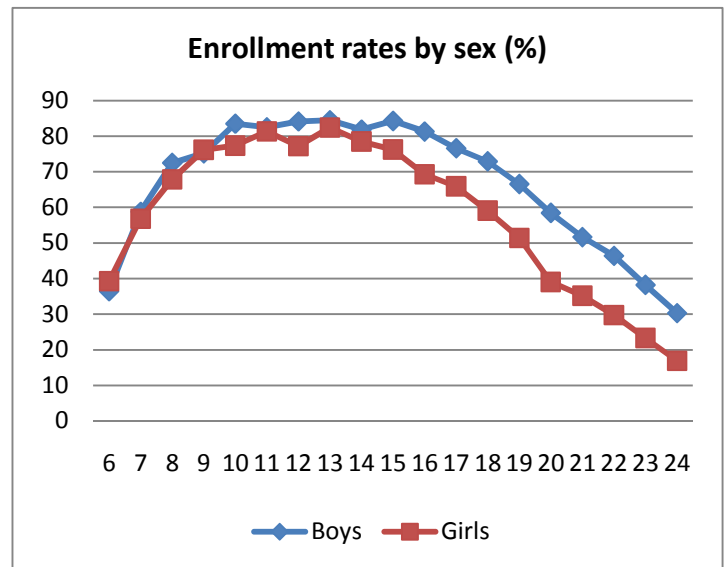
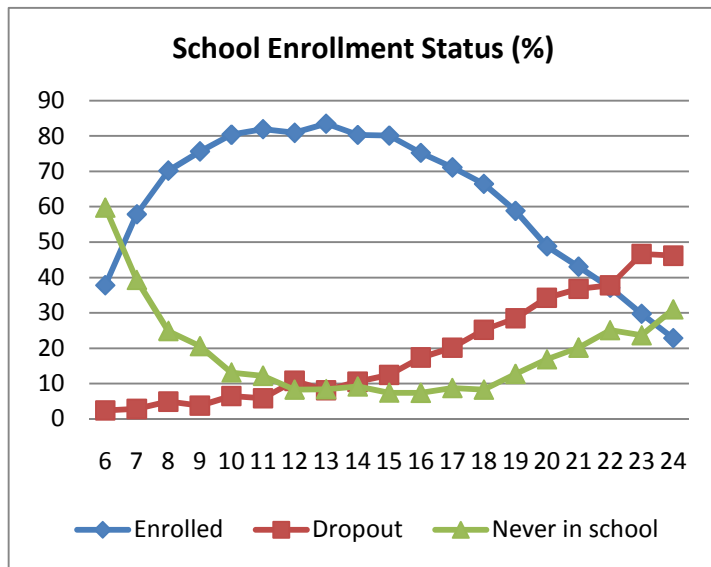


Figure 2. Enrollment rates by household standard of living and place of residence, youth aged 6-14 (%)

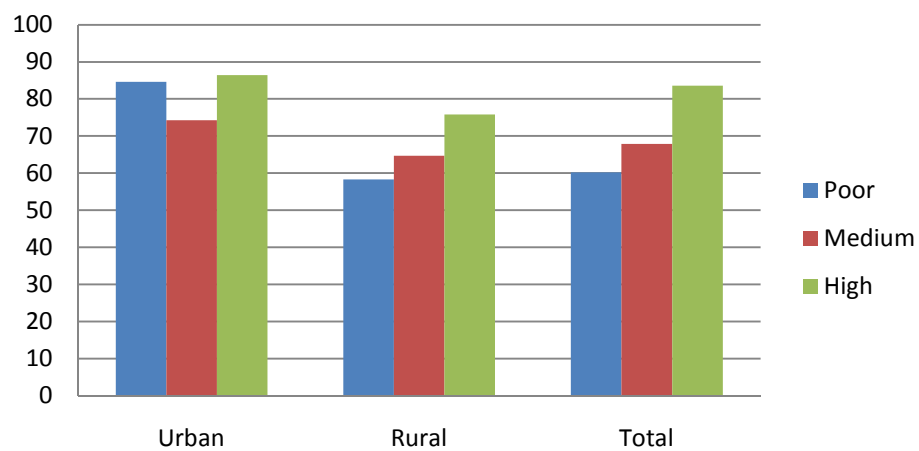
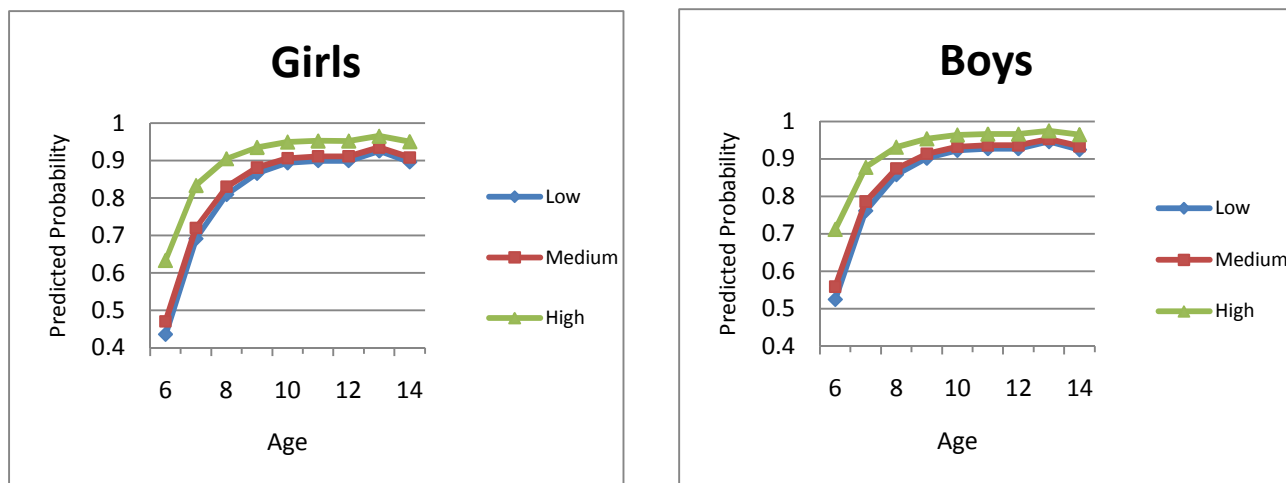
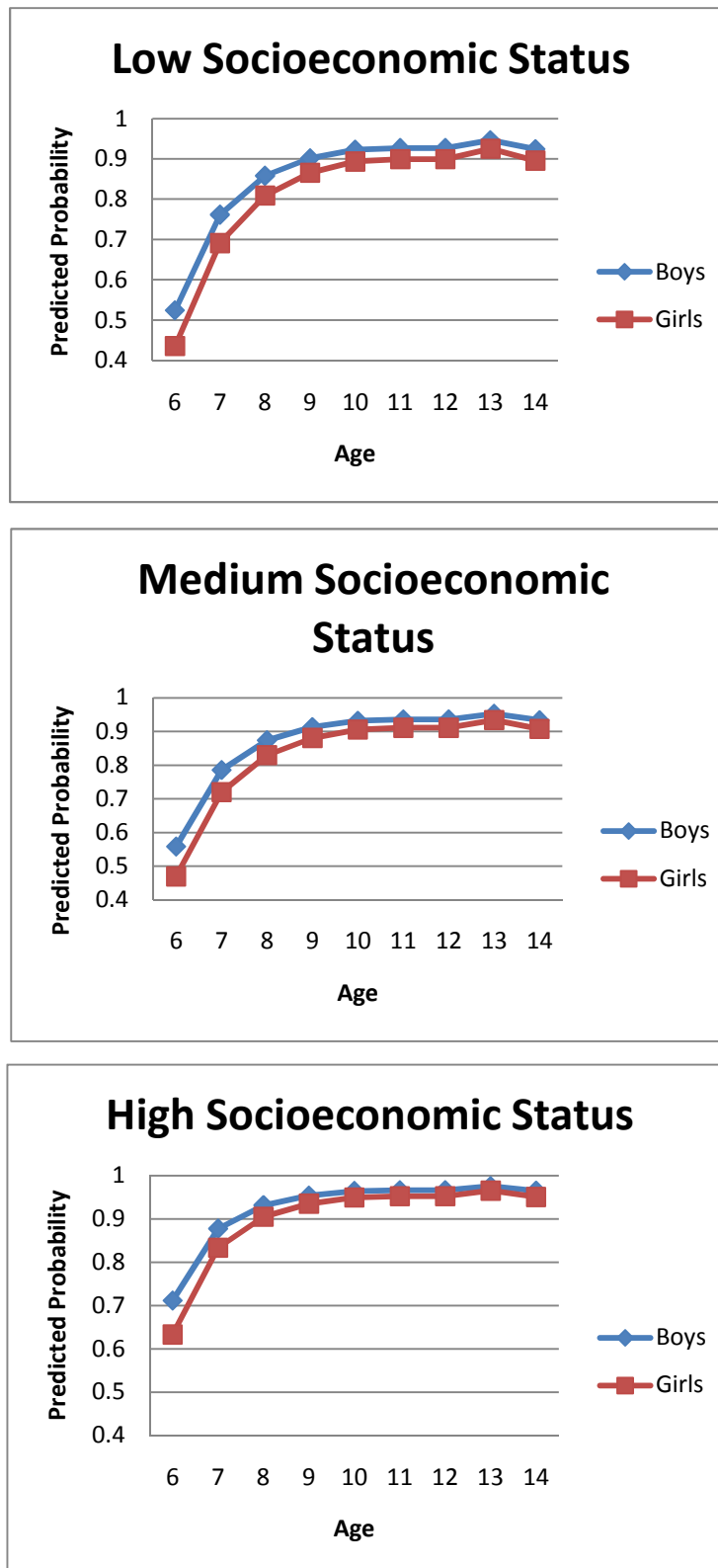


Figure 3. Predicted Probability of School Enrollment, by Gender and by Socioeconomic Status



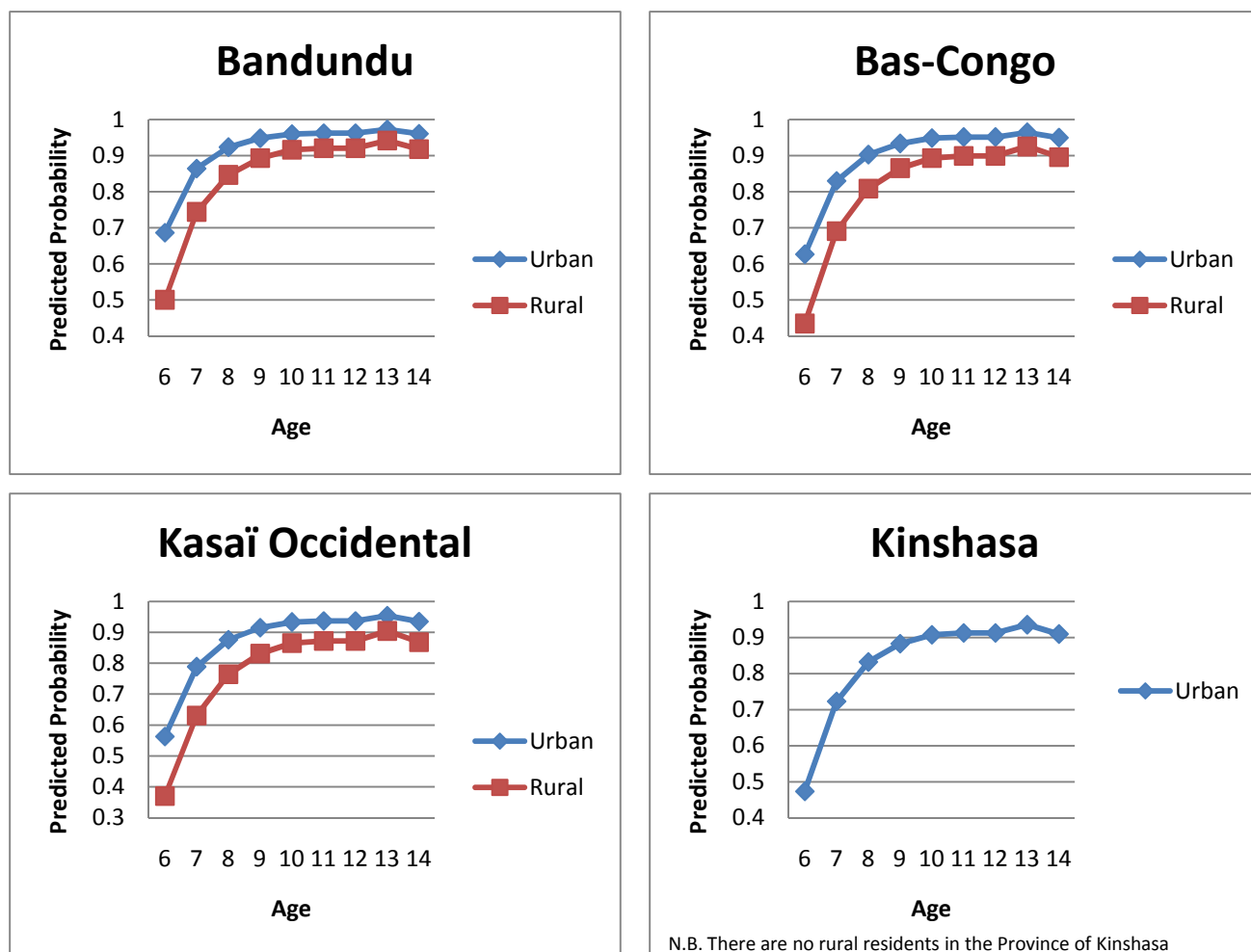
*Calculated from data in Table 3.

Figure 4. Gender Differences in School Enrollment, by Socioeconomic Status



*Calculated from data in Table 3.

Figure 5. Predicted Probability of School Enrollment, by Province and by Place of Residence



*Calculated from data in Table 4.

Table 1. Enrollment Rates by Age, Sex, Place of Residence, and Province

Characteristics	Age						
	6	9	12	15	18	21	24
Sex							
Male	36	75	84	84	73	52	30
Female	39	76	77	76	59	35	17
Place of residence							
Urban	54	85	85	87	72	49	28
Rural	25	68	78	75	62	38	18
Province							
Bandundu	20	73	87	83	72	54	19
Bas-Congo	32	75	78	73	62	37	18
Kinshasa	59	87	85	88	73	53	33
Kasai-Occidental	33	64	71	73	50	15	14
Rate (%)	38	76	81	80	66	43	23

Table 2. Odds Ratios for school enrollment. full model

Variables	Observations	Odds ratio
Child's sex		
Male	3204	1.27 ^{**}
Female	2996	RC
Relationship to household head		
Child of head and spouse	4060	RC
Child of one parent	1034	0.79 ^{ns}
Fostered-in child	1106	0.59 ^{***}
Province		
Bandundu	1680	RC
Bas-Congo	1375	0.77 [*]
Kasaï Occidental	1272	0.59 ^{***}
Kinshasa	1873	0.41 ^{***}
Household size		
1-4	520	0.84 ^{ns}
5-6	1532	0.88 ^{ns}
7-9	2417	RC
10-12	1060	1.11 ^{ns}
13 +	671	0.68 ^{**}
Education-head		
None	794	0.42 ^{***}
Incomplete primary	1005	0.46 ^{***}
Completed primary	611	0.82 ^{ns}
Incomplete secondary	853	0.80 ^{ns}
Completed secondary	2185	RC
University	752	2.42 ^{***}
Education-spouse of head		
None	1343	0.38 ^{***}
Incomplete primary	981	0.52 ^{***}
Completed primary	570	0.65 ^{**}
Incomplete secondary	727	0.72 [*]
Completed secondary or more	1461	RC
Sex of household head		
Female	931	1.13 ^{ns}
Male	5269	RC
Standard of living		
Poor	1063	0.87 ^{ns}
Medium	3052	RC
High	2085	1.95 ^{***}
Place of residence		

Urban	2638	2.18 ^{***}
Rural	3562	RC
Child's age		
6	706	RC
7	674	2.90 ^{***}
8	677	5.50 ^{***}
9	717	8.35 ^{***}
10	711	10.88 ^{***}
11	649	11.56 ^{***}
12	689	11.56 ^{***}
13	703	16.05 ^{***}
14	674	11.14 ^{***}
Religion		
Catholic	2687	1.25 [*]
Protestant	1566	1.27 [*]
Kimbanguist	274	0.91 ^{ns}
Prayer group	1475	RC
Other	198	1.19 ^{ns}
Children under the age of 5		
None	1737	RC
1	1856	0.72 ^{**}
2	1595	0.72 [*]
3 +	1012	0.72 ^{**}
N	6200	
Prob>Chi2	0.000	

RC = reference category

Table 3. Odds ratios for school enrollment. separate models by sex

Variables	Girls		Boys	
	Observations	Odds ratio	Observations	Odds ratio
Relationship to household head				
Child of head and spouse	1936	RC	2124	RC
Child of one parent	491	0.71 ^{ns}	543	0.88 ^{ns}
Fostered-in child	569	0.54 ^{***}	537	0.67 ^{**}
Province				
Bandundu	765	RC	915	RC
Bas-Congo	694	0.83 ^{ns}	681	0.72 [*]
Kasaï Occidental	588	0.58 ^{**}	684	0.62 ^{**}
Kinshasa	949	0.46 ^{**}	924	0.40 ^{***}
Household size				
1-4	243	0.81 ^{ns}	277	0.91 ^{ns}
5-6	758	0.87 ^{ns}	774	0.87 ^{ns}
7-9	1184	RC	1233	RC
10-12	502	0.97 ^{ns}	558	1.27 ^{ns}
13 +	309	0.57 ^{**}	362	0.83 ^{ns}
Education-head				
None	348	0.44 ^{***}	446	0.39 ^{***}
Incomplete primary	458	0.50 ^{***}	547	0.41 ^{***}
Completed primary	277	0.72 ^{ns}	334	0.92 ^{ns}
Incomplete secondary	411	0.82 ^{ns}	442	0.78 ^{ns}
Completed secondary	1124	RC	1061	RC
University	378	2.49 ^{***}	374	2.40 ^{**}
Education-spouse of head				
None	622	0.39 ^{***}	721	0.36 ^{***}
Incomplete primary	505	0.50 ^{***}	476	0.54 ^{**}
Completed primary	253	0.56 ^{**}	317	0.73 ^{ns}
Incomplete secondary	374	0.76 ^{ns}	353	0.67 ^{ns}
Completed secondary or more	726	RC	735	RC
Sex of household head				
Female	438	1.05 ^{ns}	493	1.15 ^{ns}
Male	2558	RC	2711	RC
Standard of living				
Poor	490	1.02 ^{ns}	573	0.73 [*]
Medium	1465	RC	1587	RC
High	1041	1.90 ^{***}	1044	2.01 ^{***}

Place of residence				
Urban	1342	2.34 ^{***}	1296	1.95 ^{**}
Rural	1654	RC	1908	RC
Child's age				
6	344	RC	362	RC
7	317	2.50 ^{***}	357	3.43 ^{***}
8	337	4.19 ^{***}	340	7.34 ^{***}
9	324	7.44 ^{***}	393	9.84 ^{***}
10	363	8.37 ^{***}	348	14.92 ^{***}
11	329	9.74 ^{***}	320	14.14 ^{***}
12	322	7.90 ^{***}	367	17.72 ^{***}
13	353	12.27 ^{***}	350	22.98 ^{***}
14	307	10.01 ^{***}	367	13.15 ^{***}
Religion				
Catholic	1308	1.34 [*]	1379	1.15 ^{ns}
Protestant	734	1.25 ^{ns}	832	1.21 ^{ns}
Kimbanguist	118	0.75 ^{ns}	156	1.06 ^{ns}
Prayer group	747	RC	728	RC
Other	89	1.39 ^{ns}	109	0.89 ^{ns}
Children under the age of 5				
None	803	RC	934	RC
1	904	0.64 ^{**}	952	0.83 ^{ns}
2	802	0.69 [*]	793	0.76 ^{ns}
3 +	487	0.75 ^{ns}	525	0.66 [*]
N	2996		3204	
Prob>Chi2	0.000		0.000	

RC = reference category

Table 4. Odds ratios for school enrollment. separate models by place of residence.

Variables	Urban		Rural	
	Observations	Odds ratio	Observations	Odds ratio
Relationship to household head				
Child of head and spouse	1622	RC	2438	RC
Child of one parent	434	0.81 ^{ns}	600	0.76 ^{ns}
Fostered-in child	582	0.49 ^{***}	524	0.67 ^{***}
Province				
Bandundu	96	RC	1584	RC
Bas-Congo	265	1.42 ^{ns}	1110	0.71 ^{***}
Kasaï Occidental	404	0.52 ^{ns}	868	0.62 ^{***}
Kinshasa	1873	0.47 ^{ns}	<i>na</i>	<i>na</i>
Child's sex				
Male	1296	1.15 ^{ns}	1908	1.32 ^{***}
Female	1342	RC	1654	RC
Household size				
1-4	172	0.68 ^{ns}	348	0.92 ^{ns}
5-6	597	0.55 ^{***}	935	1.10 ^{ns}
7-9	1126	RC	1291	RC
10-12	425	0.80 ^{ns}	635	1.31 ^{**}
13 +	318	0.57 ^{***}	353	0.77 ^{ns}
Education-head				
None	168	0.43 ^{***}	626	0.40 ^{***}
Incomplete primary	283	0.42 ^{***}	722	0.46 ^{***}
Completed primary	233	1.03 ^{ns}	378	0.78 ^{ns}
Incomplete secondary	300	1.12 ^{ns}	553	0.74 ^{**}
Completed secondary	1018	RC	1167	RC
University	636	2.06 ^{***}	116	3.72 ^{***}
Education-spouse of head				
None	218	0.32 ^{***}	1125	0.40 ^{***}
Incomplete primary	294	0.58 ^{**}	687	0.52 ^{***}
Completed primary	224	0.47 ^{***}	346	0.71 ^{ns}
Incomplete secondary	345	0.62 ^{**}	382	0.80 ^{ns}
Completed secondary or more	996	RC	465	RC
Standard of living				
Poor	79	1.16 ^{ns}	984	1.23 ^{ns}
Medium	1013	RC	2039	RC
High	1546	2.50 [*]	539	2.50 ^{***}
Child's age				
6	309	RC	397	RC
7	275	2.74 ^{***}	399	3.44 ^{***}

8	279	5.11 ^{***}	398	6.70 ^{***}
9	318	7.39 ^{***}	399	10.49 ^{***}
10	308	9.92 ^{***}	403	13.73 ^{***}
11	265	8.80 ^{***}	384	15.29 ^{***}
12	296	6.47 ^{***}	393	18.14 ^{***}
13	308	11.04 ^{***}	395	22.79 ^{***}
14	280	6.46 ^{***}	394	16.06 ^{***}
Religion				
Catholic	933	1.51 ^{**}	1754	1.24 ^{ns}
Protestant	712	0.92 ^{ns}	854	1.43 [*]
Kimbanguist	79	0.94 ^{ns}	195	0.91 ^{ns}
Prayer group	810	RC	665	RC
Other	104	1.26 ^{ns}	94	1.17 ^{ns}
Children under the age of 5				
None	817	RC	920	RC
1	815	0.84 ^{ns}	1041	0.68 ^{**}
2	620	1.39 ^{ns}	975	0.55 ^{***}
3 +	386	0.85 ^{ns}	626	0.62 ^{**}
N	2638		3562	
Prob>Chi2	0.000		0.000	

RC = reference category