Gender, Education, and the Labor Market in Kinshasa*

David Shapiro
The Pennsylvania State University
416 Kern Graduate Building
University Park, PA 16802
USA
dshapiro@psu.edu

Roger Bertrand Pongi Nyuba
Department of Population Sciences and Development
University of Kinshasa
B.P. 176
Kinshasa XI, Democratic Republic of the Congo
mediazone33@yahoo.fr

Mark D. Gough
Bates White, LLC
1300 Eye St., NW, Suite 600
Washington, DC 20005
mark.gough@bateswhite.com

March 2009

Introduction

During the past 35 years or so the Democratic Republic of the Congo (DRC) has experienced a protracted period of poor economic performance, with shorter periods of acute economic crisis. The modern or formal sector of the economy during this period has been largely stagnant or in decline, while the informal sector has grown quite substantially.

While the long-term trend has been one characterized by a deteriorating economy, the population, especially in urban areas, has pursued increasing levels of education. Families in the DRC see education of their children as a means of escaping or avoiding dire economic circumstances, and they make significant investments in the education of their children. But the transition from school to work is especially difficult in this environment. In particular, lengthy periods of job search and heavy reliance on personal contacts for assistance in finding a job characterize the experience of young jobseekers with comparatively high levels of education (completed secondary and university education).

This paper provides an overview of the labor market in Kinshasa, capital of the Democratic Republic of the Congo and the second-largest city in sub-Saharan Africa, with an estimated population as of 2008 in excess of 8 million (United Nations, 2008). More specifically, using data from a 2004 survey carried out by the Institut National de la Statistique in Kinshasa, we examine education in the Kinshasa labor market, and at the same time focus on gender differences in labor market activity. The survey covered in excess of 2,000 households, encompassing more than 12,700 individuals (Institut National del la Statistique, 2005).

The following section provides some descriptive information on the setting – most notably, a discussion of changes over time in the composition of employment in the Kinshasa labor market and in the educational attainment of the population. We then turn to data analysis,

1

beginning with an overview of labor force participation and labor force status (employed, unemployed, out of the labor force), with emphasis on differences by age and by gender. With respect to employment, we distinguish employment in the formal or modern sector of the economy from employment in the informal sector. Following this overview, we examine differences in labor force participation and labor force status by educational attainment, again with highlighting of gender differences. Subsequently, we report and discuss results of multivariate analyses of employment status, with emphasis on schooling, age, gender, and migration status. The concluding section of the paper summarizes our findings regarding gender, education, and the labor market in Kinshasa.

Employment and Education in Kinshasa: Changes Over Time[1]

Prior to independence in 1960, the labor market in Kinshasa (then known as Leopoldville) was fairly tightly controlled by the Belgian colonial authorities. Consequently, there was only a small informal sector, unemployment was quite low, and employment of women was rare. Following considerable political turmoil in the early 1960s, there was a comparatively brief period of economic expansion in the late 1960s and early 1970s. However, by the mid-1970s ill-conceived economic policies and a decline in the price of copper (the major source of export earnings and government revenues at the time) began what turned out to be a long-term economic slide, which was exacerbated by high levels of corruption in the Mobutu regime (1965-1997).

From the mid-1970s to 1990 the economy experienced what we have described elsewhere as chronic crisis, with ongoing high inflation and poor economic performance, and distinctly

---

[1] Much of the discussion in this section is drawn from Shapiro and Tambashe (2003), and in particular chapters 1 ("From Leopoldville to Kinshasa") and 2 ("Education and Employment").

more rapid growth in the informal sector of employment than in the modern sector. Labor force participation of women, primarily in the informal sector, grew especially rapidly. But beginning in 1990 inflation accelerated rapidly, and civil disorder in 1991 and again in 1993 along with continued high inflation resulted in contraction of the modern sector of employment and more rapid expansion of the informal sector. Following a brief civil war (with numerous outside participants as well) the Mobutu regime was overthrown in 1997 and Laurent Kabila came to power. However, by August of 1998 there was a new outbreak of fighting, which continued until 2003.

The long downward slide of the Congolese economy is shown graphically in Figure A1, with estimated GDP per capita in 2004 being only slightly above one quarter of its value in 1973. Figure A2, showing the year-to-year fluctuations in GDP per capita, makes it clear that while the period from the mid-1970s to 1990 was bad, in that for about three-quarters of the years GDP per capita declined while it increased in only about a quarter of the years, the period from 1991-2002 was distinctly worse, with an unbroken 12-year stretch of falling GDP per capita, and with especially sharp declines in the early 1990s.

Over time, the informal sector of the economy expanded sharply, as did women's labor force participation, which was primarily in the informal sector. These changes were accompanied by corresponding changes in the industrial structure of employment. For example, in 1955 manufacturing and construction accounted for just over half of total employment in Kinshasa, whereas the share of commerce was less than 15 percent; by 1984, employment in manufacturing and construction had fallen to under 17 percent of total employment, while employment in commerce had increased to more than 37 percent of all employment (Shapiro and Tambashe, 2003, Table 2.3, p. 40). By 2004 the continuation of these trends had resulted in a

3

substantial majority of total employment being in commerce, an industry where 95 percent of those employed were in the informal sector (Institut National de la Statistique, 2005, Table 2, p. 29).

Despite the economic problems, educational attainment of the population grew rapidly, and gender differences in schooling diminished somewhat. In 1955, more than 85 percent of women aged 20 and over in Kinshasa had never been to school, with almost all of the remainder having attended only primary school. Among their male counterparts, just over 45 percent had had no schooling, another 45 percent had been to primary school, and 9 percent had gone beyond primary school. By 1984, more than 45 percent of women aged 20 and over had been to at least secondary school, another 30 percent had attended primary school, and just over a quarter had never attended school. Among males, fully two-thirds of those aged 20 and over in 1984 had been to secondary school or university, not quite a quarter had only a primary education, and under 10 percent had never been to school (Shapiro and Tambashe, 2003, Table 2.1, p. 34).

During the 1990s economic circumstances were especially adverse, yet the educational attainment of the adult population continued to increase. By 2004 the percentage of women over age 20 with at least some secondary schooling had jumped to 65 percent (and 34 percent of women aged 20 and above had reached at least upper-level secondary school), while only 8 percent had no schooling. Likewise, in 2004 the percentage of men with at least secondary schooling had increased to 83 percent (and fully 57 percent had either upper-level secondary or university education), and only 3 percent of adult men had no schooling.

In sum, then, during the past 35 years the economy of the DRC has experienced an extended period of decline, accompanied by substantial growth in the informal sector and a modern sector that was largely stagnant initially and then declining after 1990. At the same time,

4

educational attainment of the population has increased over this period, with rising numbers of secondary-school graduates and individuals with university education. We turn now to an examination of data on labor force participation and labor force status, first by age and gender and subsequently by educational attainment.

Overview: Labor Force Participation and Labor Force Status, by Age and Gender

Among those aged 15 and over, 56 percent are in the labor force.[2] The labor force participation rate of males 15 and over is 65 percent, while the corresponding figure for females is 48 percent. Labor force participation rates by age and gender are shown in Figure 1. Among males, the percentage of individuals who are in the labor force rises sharply across the first three age groups from 17 percent for those aged 15-19 to 39 percent for those aged 20-24 and 67 percent for those aged 25-29. Labor force participation rates of males continue to increase up to ages 40-44, reaching 97 percent, are essentially stable at that level for the next two age groups, and then fall to 91 percent for those aged 55-59, nearly 84 percent for those aged 60-64, and finally to a little over 50 percent for those aged 65 and over.

---

[2] We report data with no upper age limit. Had we instead limited the age range to, say, 15-54 or 15-64, the results would have been very similar, both because of the comparatively small size of the population aged 55 and over and the relatively high rates of labor force participation of these individuals.

**Figure 1. Labor Force Participation Rates, Age and Gender**
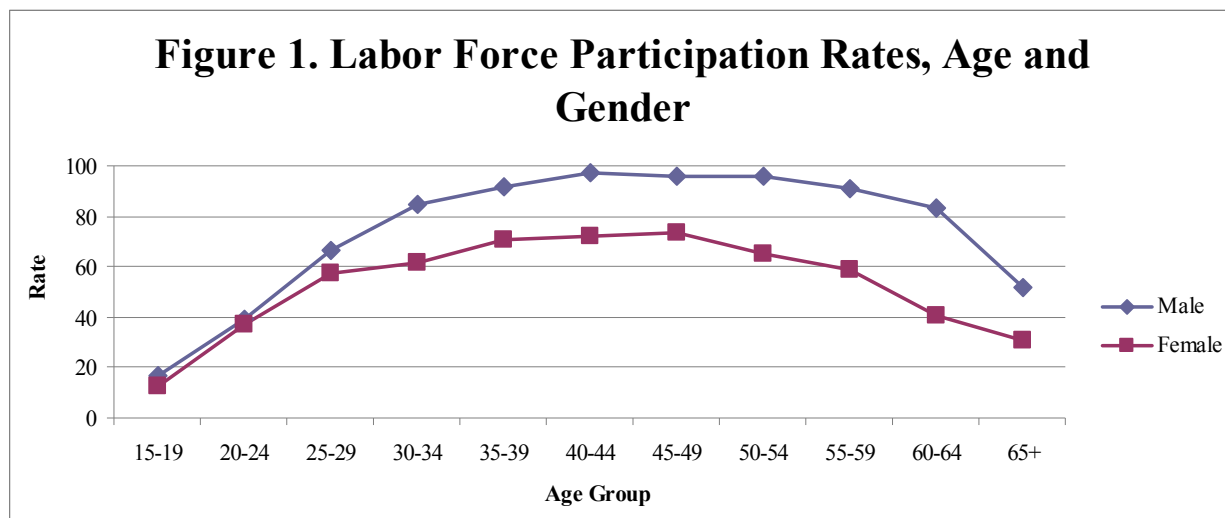
Among females, labor force participation rates are quite similar to those for males for the first two age groups, largely reflecting high rates of school enrollment, as we shall see below. Participation rates rise with age, but they do not get as high as those for men: the maximum participation rate of 74 percent is reached for those aged 45-49, rates fall with age beginning with ages 50-54, first slowly and then more rapidly, and the rate among the oldest individuals (65 and above) is 31 percent. This gender difference reflects the substantially greater propensity of women aged 30 and over to be out of the labor force (presumably as homemakers) as compared to their male counterparts.

As may be seen in Appendix Table 1, nearly 43 percent of the population aged 15 and over is employed, including individuals who are self-employed (primarily in the informal sector) as well as employees in either the modern or informal sectors. The bulk of employment is in the informal sector: 34 percent of individuals over age 15 are employed there, compared to only 9 percent who are employed in the formal sector (private or public). Hence, the informal sector accounts for 79 percent of total employment. There is a distinct gender difference in the distribution of workers by sector of employment: among men, those employed in the formal

sector represent close to 30 percent of total employment, whereas among women those in the formal sector constitute only just a little bit more than 10 percent of total employment.

Another 13 percent of those aged 15 and over are unemployed, while the remaining 44 percent are out of the labor force. Nearly half of males are employed, as compared to 37 percent of females; unemployment characterizes close to 16 percent of males and 11 percent of females. Hence, while 35 percent of males are out of the labor force, nearly 52 percent of females are not in the labor force.

Labor force status by age and sex is shown in Figures 2a and 2b, which are based on the data reported in Appendix Table 1. Employment rates (i.e., employment-to-population ratios) start quite low and rise steadily with age up through the 40s, reaching a maximum of 85 percent for males aged 45-49 and 65 percent for females aged 40-44. Unemployment-to-population ratios also start low and rise with age, for both males and females. The maximum is observed among men aged 30-34 and women aged 25-29, where a little more than one in five individuals is unemployed. At higher ages the percentage unemployed declines, with the drop being much sharper in general for women.

Figure 2a. Male Labor Force Status by Age Group

Figure 2b. Female Labor Force Status by Age Group
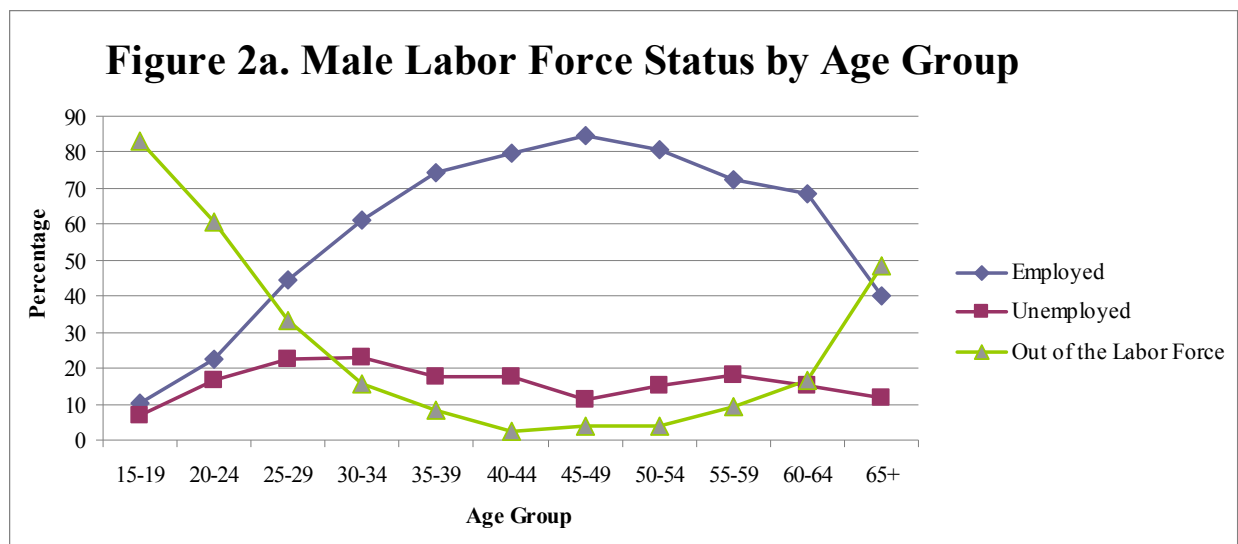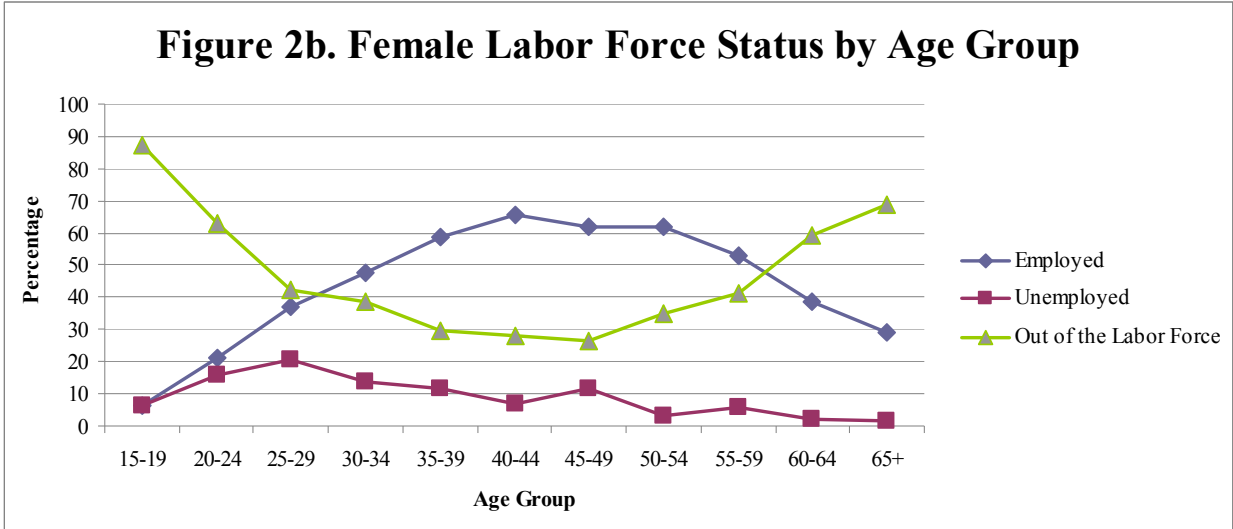
The large but declining-with-age percentages of younger individuals who are out of the labor force reflect school enrollment and declining school enrollment with age, as may be seen in Figure 3. Roughly 90 percent of youth ages 5-14 are enrolled in school, with a negligible gender difference. Beginning with the age group 15-19, enrollment rates fall with age, slowly at first and then more rapidly. This decline is also accompanied by emergence of a gender difference, with enrollment rates of males in their 20s being distinctly higher than the rates for females in their 20s, and especially so for those aged 25-29.

Figure 3. School Enrollment, by Age Group and Gender
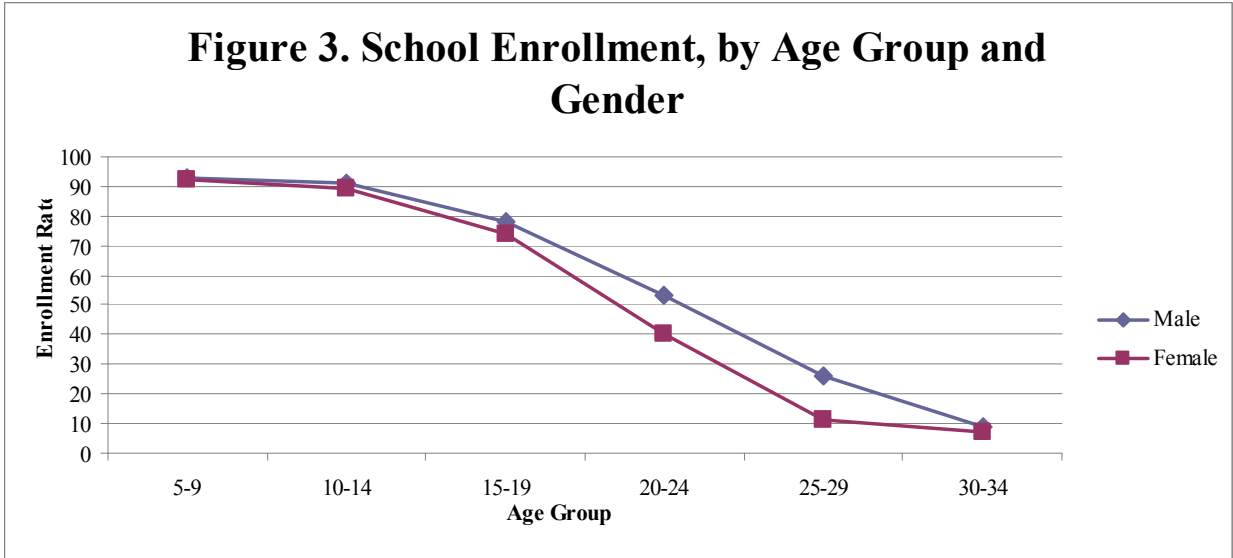
Gender differences in labor force status are highlighted in Figure 4. Prior to age 25 gender differences are negligible, but they begin to emerge among those aged 25-29 and become pronounced afterwards. Men are more likely than women to be either employed or unemployed, with, for the most part, particularly large gender differences in unemployment from age 30 on. Correspondingly, women are distinctly more likely than men to be out of the labor force from age 30 on.

Figure 4a. Percentage Employed, by Age Group and Gender

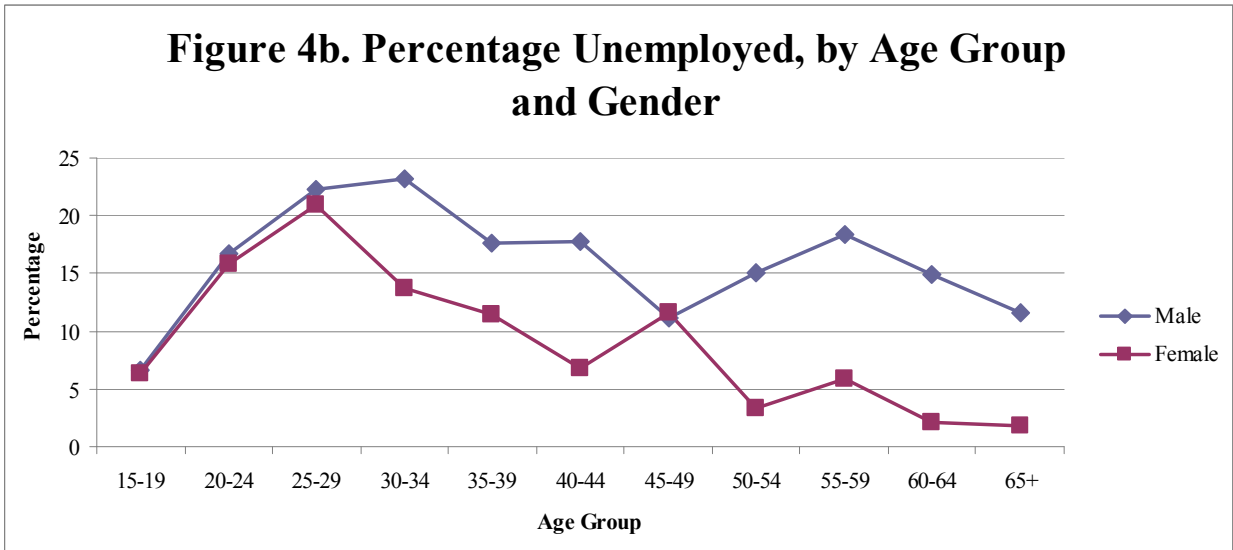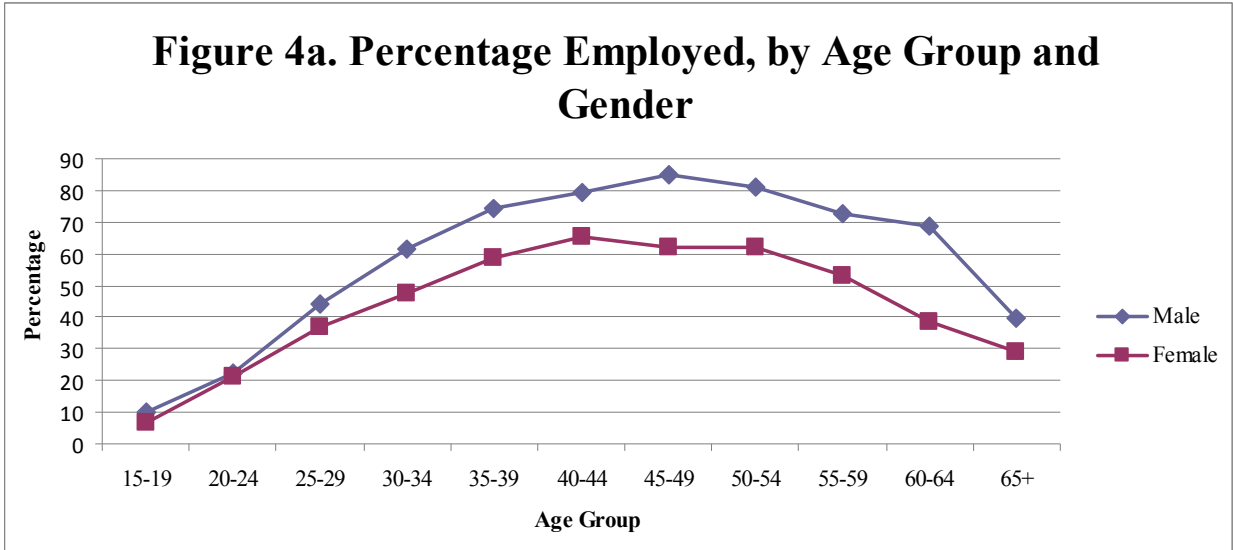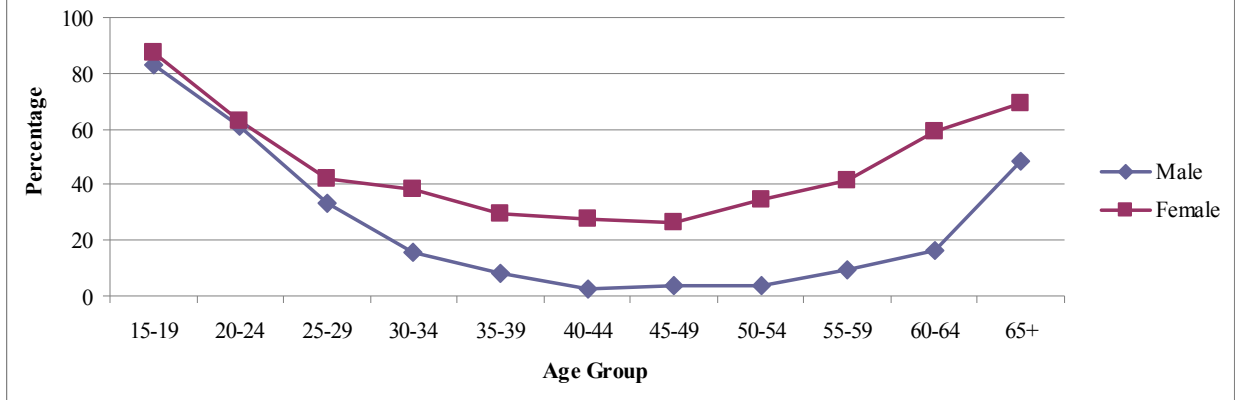Figure 4b. Percentage Unemployed, by Age Group and Gender

Figure 4c. Percentage Out of the Labor Force, by Age Group and Gender

The overall unemployment rate (the unemployed as a percentage of the labor force, counting as unemployed both individuals who meet the International Labor Office definition of unemployment, requiring some search effort, and also discouraged workers) is close to 24 percent. There is virtually no gender difference in unemployment rates overall.

We present unemployment rates by age and gender in Figure 5. These rates are quite high early on, approaching 50 percent for teenage girls and 40 percent for teenage boys, who are typically youth with comparatively low levels of schooling. Unemployment rates exceed 40 percent for young adults in their early 20s (due to grade repetitions, which are quite common in the school system, individuals in their early 20s in Kinshasa are often completing their secondary education, so unemployment in this age group includes recent secondary graduates or secondary school leavers). The unemployment rates decline slowly with age, with not much gender difference up to age 40 but afterward a tendency for the most part to be about 15-20 percent among men and around 10 percent among women.

Figure 5. Unemployment Rates, by Age Group and Gender
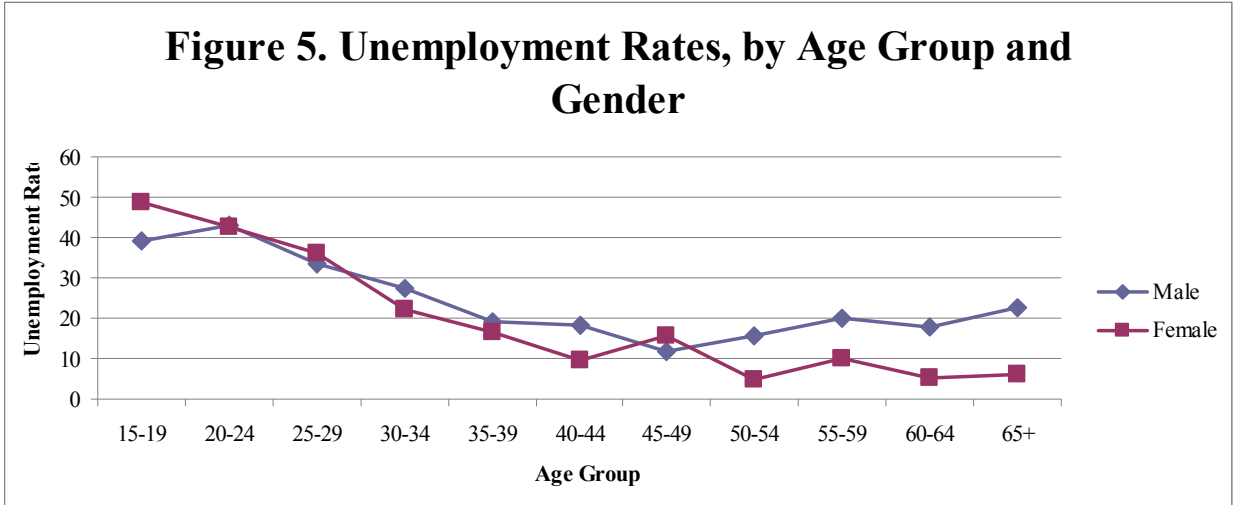
Education, Labor Force Participation, and Labor Force Status: A Descriptive Overview

In this section we provide a descriptive overview of labor force participation and labor force status and how they are related to educational attainment. As may be seen in Figure 6, among individuals who are no longer enrolled in school, there is a clear tendency for those with greater educational attainment (measured by highest grade attended) to be in the labor force, for both men and women.[3] About two-thirds of men with no schooling are in the labor force, compared to nearly three-quarters of those with primary schooling and more than 85 percent of those with a secondary education but not more. Among men with university education more than 90 percent are in the labor force. The percentages in the labor force are consistently lower for women, but with the particularly low participation rate of those with no schooling (47 percent) and the high rate for university-educated women (84 percent), there is again a clear positive relationship between labor force participation and educational attainment.

---

[3] Our interest here is in ascertaining differences in labor force participation and status associated with differences in educational attainment for individuals who have completed their schooling. Hence, we restrict the universe to those out of school.

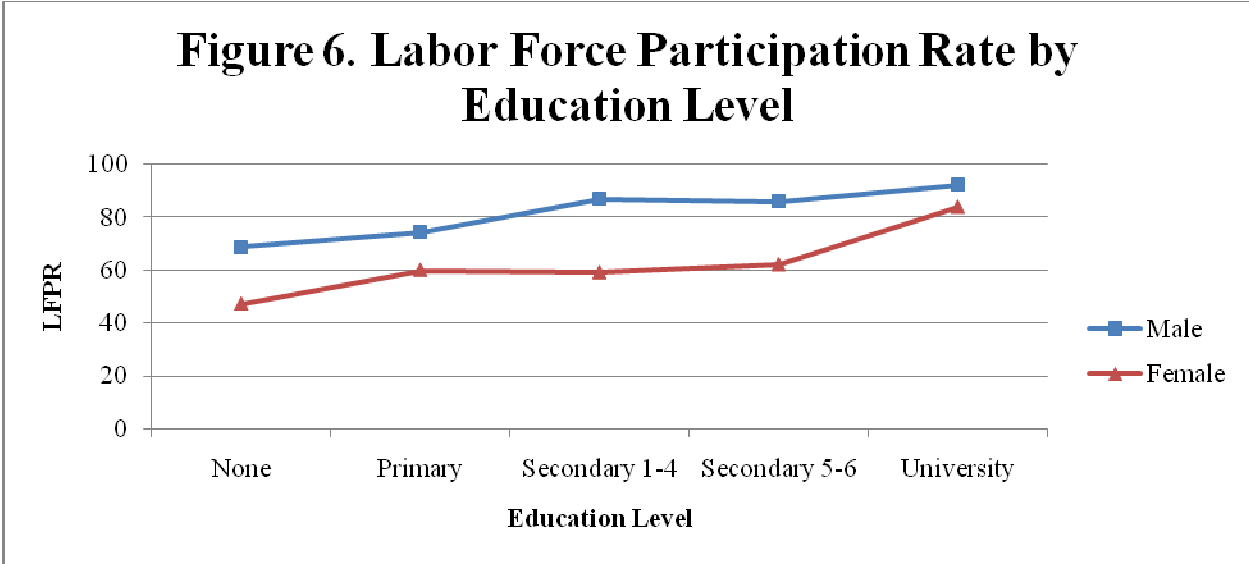**Figure 6. Labor Force Participation Rate by Education Level**

Figure 7 shows the labor force status of individuals within each educational attainment group, separately by sex, for those not in school. Among males, there is a clear tendency as educational attainment increases for the percentage of individuals employed to rise while the percentage out of the labor force falls. For those with no schooling, employed individuals modestly outnumber those out of the labor force; for all other groups the employed substantially outnumber those out of the labor force, with twice as many employed per individual out of the labor force for those with primary schooling, close to five times as many among those with secondary education, while among those with at least some university education the employed are nearly 10 times more numerous than those out of the labor force.

The percentage of males who are unemployed varies inversely with educational attainment. The highest percentage of unemployed is among those with no schooling (27 percent), while the lowest percentage is for those with at least some college (16 percent). Nineteen to 21 percent of those in the intermediate groups are unemployed.

Figure 7a. Male Labor Force Status by Education Level
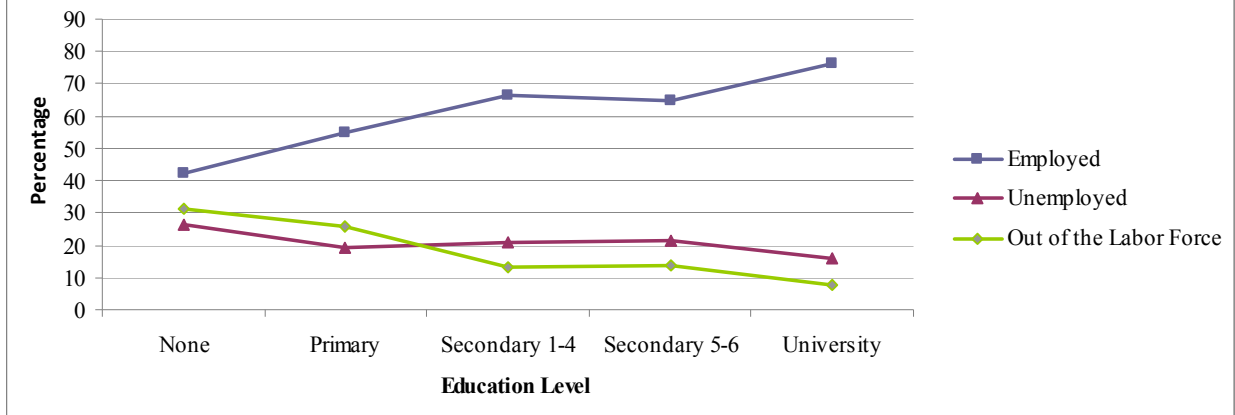
Among women, there is also a tendency for employment to rise with education, but the differences are not nearly as substantial as those among men. The percentage out of the labor force likewise declines as educational attainment increases, but the decline is greater than that for men and is especially substantial in going from completed secondary to some university education. In contrast to the situation for men, there is a tendency among women for the percentage unemployed to rise as educational attainment increases.

Figure 7b. Female Labor Force Status by Education Level
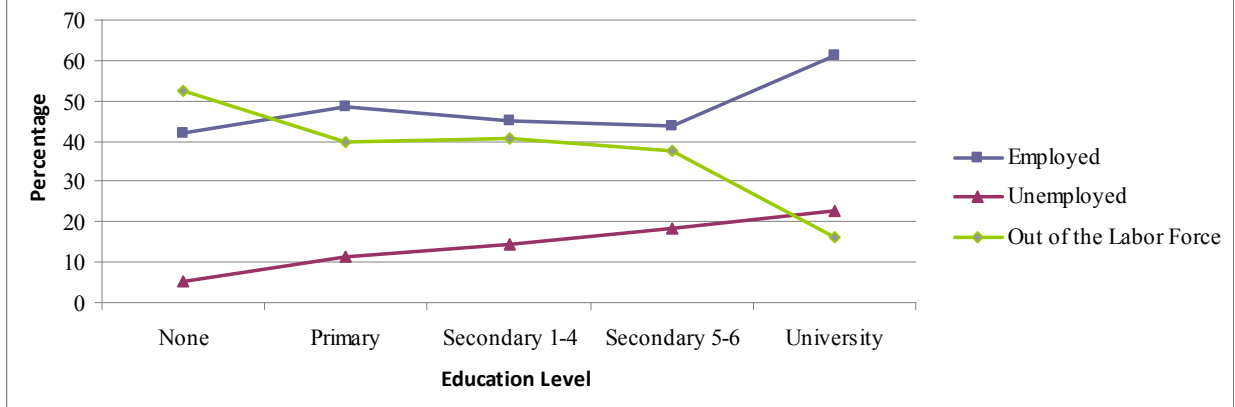
We noted earlier that overall, about one-fifth of employment is in the modern sector, with the bulk of employment being in the informal sector. This is especially the case among women: only 10 percent of employed women have modern-sector jobs, compared to almost 30 percent of employed men. As may be seen in Figure 8, for both men and women the likelihood that an individual is employed in the formal sector of the economy increases with education for the most part,[4] especially as one moves to the high-level secondary and then university groups. That is, while about 20 percent or less of employed men with low-level secondary schooling or less are employed in the formal sector, the figure jumps to over 30 percent for those with upper-level secondary schooling and to more than 55 percent for those with at least some university education. Among women the differences by educational attainment are even sharper: fewer than five percent of the employed in the lowest three educational attainment groups work in the modern sector, compared to more than 17 percent of those with upper-level secondary education and almost 65 percent of employed women with university education.

Figure 8. Formal Sector Employment as Share of Total Employment, by Education Level

---
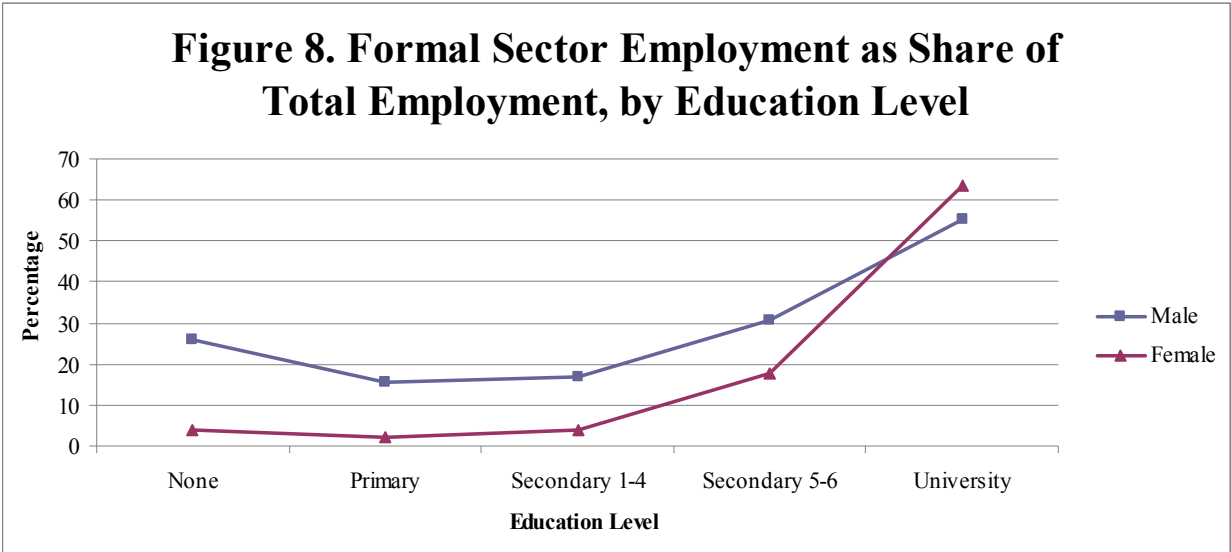
[4] The exception to this statement is among men, where more than a quarter of those with no schooling who are employed work in the formal sector compared to only 16-17 percent for those with primary or low-level secondary schooling.

Unemployment rates by educational level and by age group are shown in Figure 9.[5] There is a clear general tendency for these rates to decline with age up to ages 40-44. Excluding workers with no schooling, of whom there were only a total of 145 in the ten age groups younger than 65), we find that among workers aged 25-29 and 30-34, unemployment rates are broadly inversely related to educational attainment, with the highest rates for those with university education and the lowest rates for those with only primary schooling. These differences presumably reflect much more difficult access to employment in the formal sector (the destination of choice for better-educated individuals) than in the informal sector (essentially the only destination that is viable for those with little or no schooling). By ages 35-39 and beyond, however, there is no longer an inverse relationship between unemployment rates and education: differences in unemployment rates among the different schooling groups are rather modest, and with no systematic pattern.
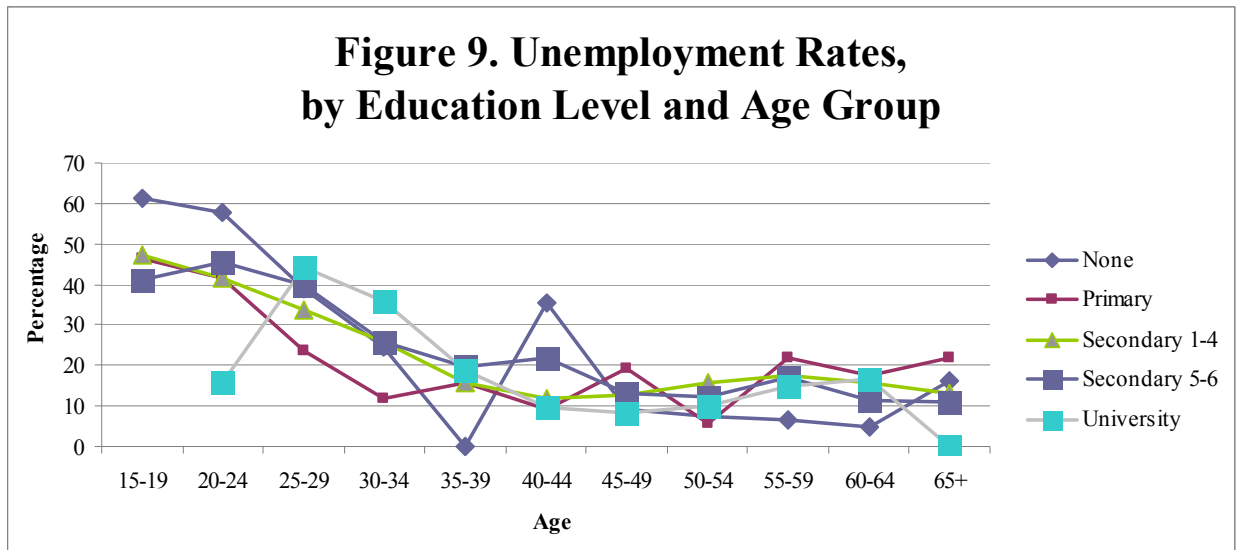
Figure 9. Unemployment Rates, by Education Level and Age Group

---

Educational Attainment and Employment Status: Multivariate Analyses

As illustrated in the preceding section, the employment status of individuals is clearly linked to their educational attainment. At the same time, we saw earlier that age and gender are also relevant to determination of labor force status. Given an individual's schooling, age serves as a broad indicator of exposure to the labor market. Better-educated workers who are relatively young and hence have only limited exposure to the labor market experience especially high unemployment rates. These rates eventually diminish with age. And these differences are undoubtedly related to differences by education group in the likelihood of finding employment in the formal sector of the economy. Further, given the long-term increase in educational attainment that has taken place in the Congo, better-educated individuals tend, on average, to be younger than those with lower levels of schooling. To sort out the effects of age, gender, and education on labor force status, then, multivariate analysis is most appropriate.

This section of the paper reports results of multivariate analyses of labor force status. More specifically, we consider individuals who are not in school as being in one of the following labor force status groups: employed in the formal sector, employed in the informal sector, unemployed, and out of the labor force. We estimate multinomial logit equations in which age and educational attainment are the principal explanatory variables in determining the labor force status of individuals. Migrant status is also included in these equations. The equations are estimated first for all individuals, with an additional variable included that identifies women, and then they are estimated separately for men and women.

Table 1 reports the results of the multinomial logit estimates for the sample of out-of-school individuals aged 15 and above. The coefficients in the first column of numbers in the table show the impact of age, educational attainment, migrant status, and gender on the

likelihood of being employed in the modern sector as opposed to working in the informal sector. The second column of coefficients shows the effects of those variables on the likelihood of being unemployed relative to being employed in the informal sector, while the third column indicates the impact of the variables on the likelihood of being out of the labor force as opposed to working in the informal sector.

The importance of educational attainment as a means of gaining access to jobs in the modern sector is evident in the first column of coefficients. Among individuals with either upper-level secondary or university education the likelihood of employment in the modern sector as compared to work in the informal sector is significantly greater than that for individuals with lower-level secondary schooling. Those with either no schooling or only primary schooling are less likely to be in the modern sector, cet. par., with the difference being significant for the primary-school group.

The likelihood of employment in the modern sector relative to work in the informal sector rises with age, other things equal, but at a declining rate. The maximum is reached at about age 53, after which further increases in age are associated with a reduced likelihood of modern sector employment as compared to work in the informal sector. There is a slight tendency for migrants to be more likely to be employed in the modern sector (the coefficient is not quite significant at the 10 percent level), and other things equal, women are significantly less likely than men to be employed in the modern sector rather than in the informal sector.

As may be seen in the second set of coefficients in the table, increasing educational attainment tends to make for a greater likelihood of being unemployed as compared to being employed in the informal sector. Three of the four schooling coefficients are significant, and they increase in magnitude as the level of schooling increases. The coefficients on age and age

squared imply a negative effect of age on the likelihood of being unemployed rather than working in the informal sector, with the effect diminishing in magnitude (becoming less negative) as age increases up to about 54, and then increasing afterwards. Migrants appear to be a bit less prone to be unemployed, but the difference is not significant. And women are significantly less likely than men, other things equal, to be unemployed rather than working in the informal sector.

The third set of coefficients pertains to the likelihood of being out of the labor force as opposed to working in the informal sector. With the exception of those with upper-level secondary education, who have a significantly greater likelihood of being out of the labor force, there are no significant differences by education group. As in the previous case age has a negative but diminishing effect up to a point, here, age 44, and then a positive effect. Especially highly significant is the gender difference: other things equal, women are substantially more likely than men to be out of the labor force as compared to working in the informal sector.

Overall, the equations yield a highly significant set of results. At the same time the pseudo R^2 is less than .13. Clearly, other factors that we have not taken into consideration are pertinent as well to determination of labor force status.

The results in Table 1 are from a sample including males and females, with gender differences captured by a single dummy variable. Table 2 reports estimates from two more flexible and less restrictive equations, namely, separate equations by gender. This separation allows for gender-specific effects of all of the explanatory variables.

Consider the estimates by gender for the likelihood of being employed in the modern sector as compared to being employed in the informal sector. For both men and women the individuals in the two highest schooling groups are significantly more likely than others to be
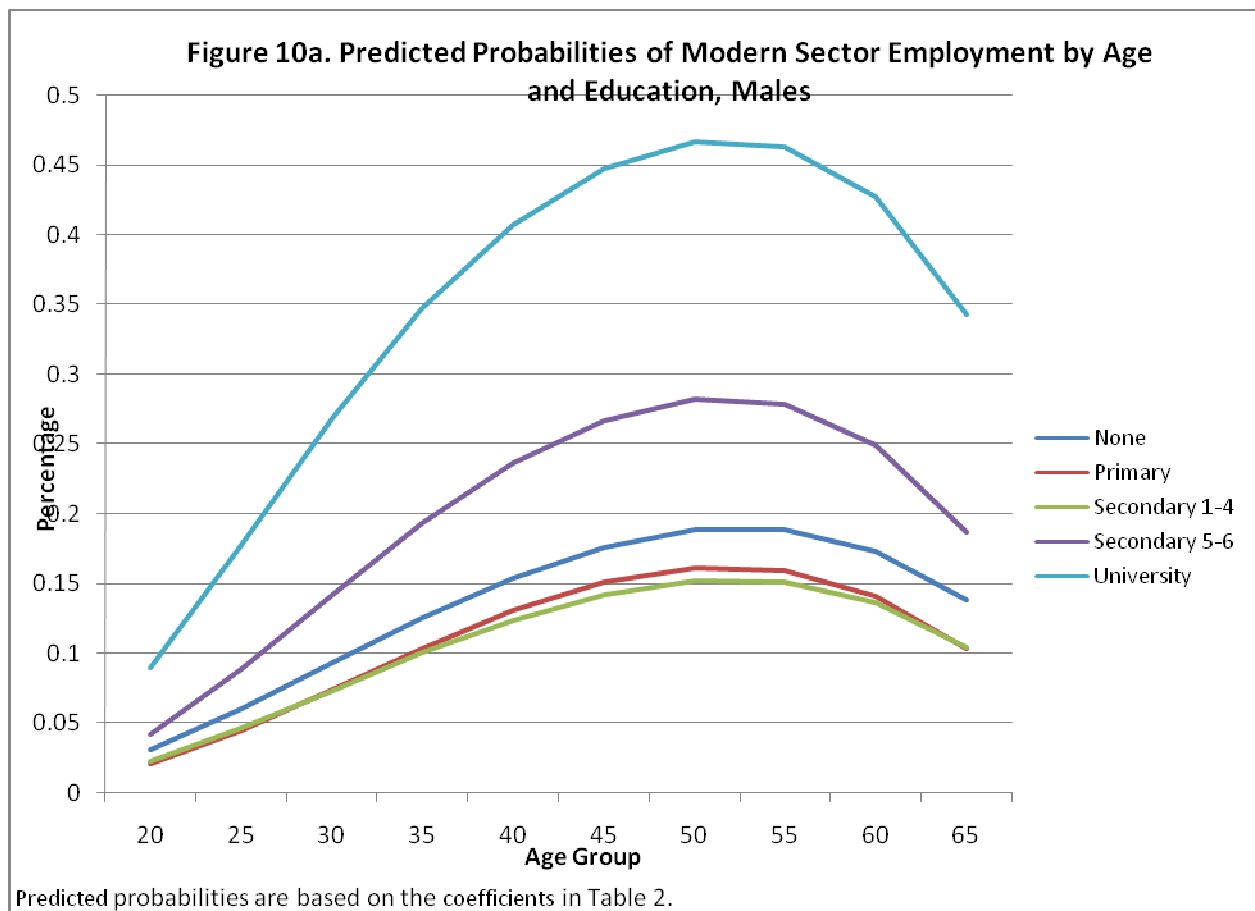
18

employed in the modern sector. However, the magnitude of the differences is distinctly greater for women than for men. Age effects appear to be similar via the linear term, but the larger (in absolute value) coefficient for women on the squared term corresponds to a much earlier turning point (38.3 years vs. 56.4 years). That is, among women the likelihood of being in the modern sector rises with age only to about 38, and falls thereafter, whereas among men the increase persists up to age 56.
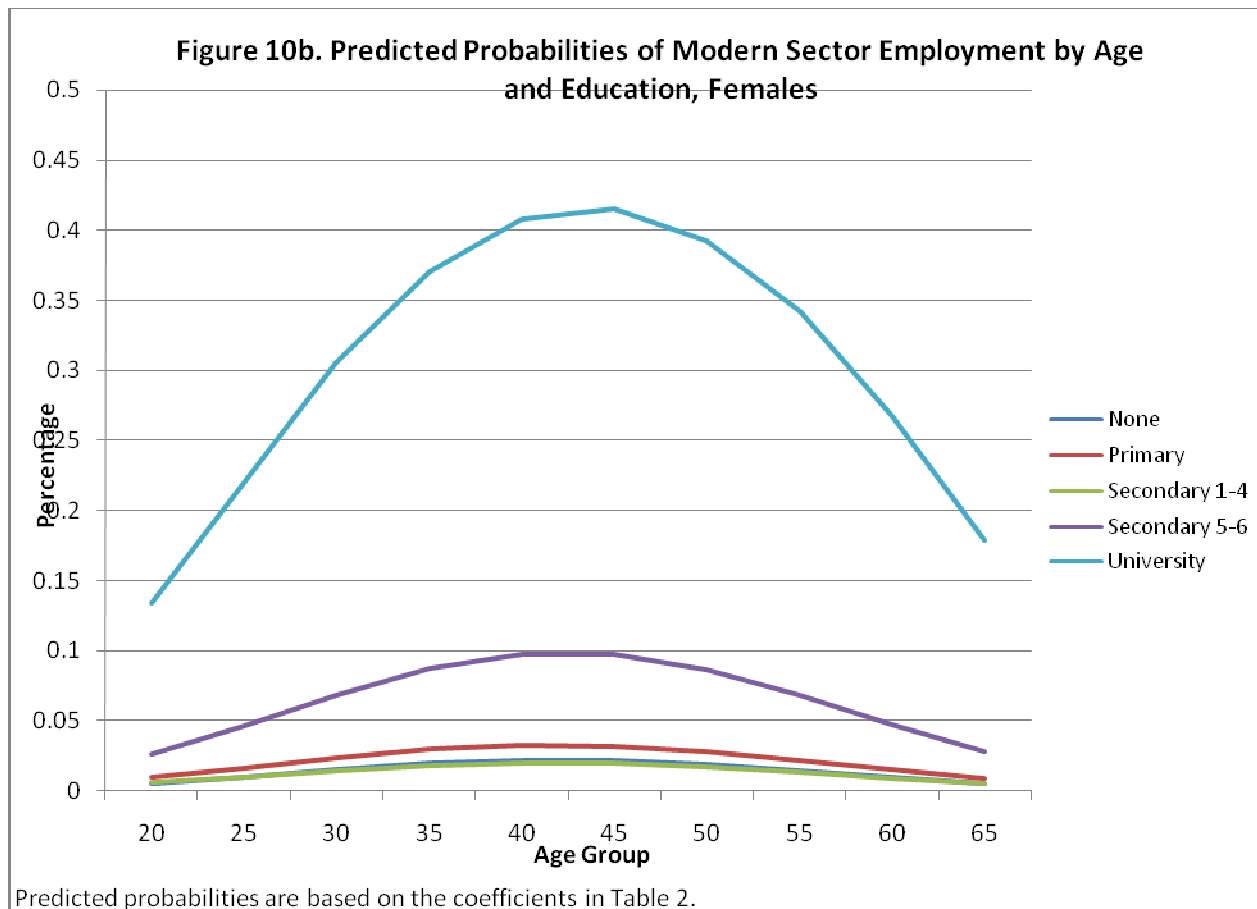
With respect to the likelihood of being unemployed as compared to being employed in the informal sector, both men and women in the two highest schooling groups are significantly more likely than their lesser-educated counterparts to be unemployed. Again, however, the magnitudes of the differences are considerably greater among women than among men. The linear age coefficients are similar, but for men there is a larger squared term, indicating that the likelihood of being unemployed diminishes with age more rapidly among men and actually increases over age 50, whereas among women that likelihood decreases up to age 72.

The status of being out of the labor force is the one with the most substantial gender differences. Among men, all schooling groups have positive coefficients, and three of the four are significant, indicating a U-shaped relationship between schooling and the likelihood of being out of the labor force. Among women, however, there is only one significant coefficient, indicating that women with primary schooling are a bit less likely to be out of the labor force than other women. The age and age squared coefficients are also quite different by gender. In both cases the coefficients imply a negative effect of age on the likelihood of being out of the labor force that becomes positive around age 44 or 45, but for men the initial negative effect is considerably greater than for women. Thus, aging up to the mid-40s is associated with a reduced likelihood of being out of the labor force, but with greater impact for men than for women.

19

Migrant men are significantly less likely than Kinshasa natives to be out of the labor

force, other things equal; there are no significant migrant-nonmigrant differences among women.

And as in the pooled equation, the overall explanatory power of the equations is comparatively

low (pseudo R^2 of .11 for men and .09 for women), despite the significant age coefficients and a

number of significant education coefficients.

To better grasp the implications of these estimates, it is useful to consider predicted

probabilities of being in various labor force status categories by gender, educational attainment,

and age. In particular, here we consider the predicted probabilities of being employed in the

modern sector, shown in Figure 10 below.

Figure 10a. Predicted Probabilities of Modern Sector Employment by Age and Education, Males

Predicted probabilities are based on the coefficients in Table 2.

Figure 10b. Predicted Probabilities of Modern Sector Employment by Age and Education, Females

Predicted probabilities are based on the coefficients in Table 2.

Among both men and women, these probabilities rise with increasing education and, up to a point, with increasing age. However, the gender differences are notable. For any given educational group, the probabilities are lower for women than for men, particularly so for all those with less than a university education. And the age at which the probabilities begin to decline is distinctly younger among women than among men.

In essence, then, while it is true that more schooling enhances the prospects of both men and women for securing modern sector employment, there are much stronger effects of increased education among men, up through upper-level secondary education. Among women, the only strong effect is apparent in going from upper-level secondary to university education: peak predicted employment in the modern sector among women in the upper-secondary group is

21

only 10 percent (compared to nearly 30 percent for men), while among university-educated women peak predicted employment is over 40 percent (compared to just over 45 percent for men).

Summary and Conclusions

This paper has provided an extensive overview of the labor market in Kinshasa. We have documented differences in labor market outcomes by age, gender, and educational attainment. Despite the persistence of a labor market with limited opportunities for modern sector employment and a rapidly-growing informal sector, educational attainment of the adult population has risen sharply over time. Increased educational attainment is associated with greater labor force participation and tends to improve access to the highly-coveted jobs in the modern sector. However, there is a gender dimension to the link between schooling and the prospects of landing a modern-sector job: below university-level education, men are substantially more likely than women to have modern sector employment. The vast majority of employed women with less than a university education are working in the informal sector of the economy. Only among the best-educated individuals is the gender gap small. Like many other struggling economies in the developing world, then, the Congo is characterized by a population with rising education and aspirations, but severely limited opportunities.

References

Heston, Alan, Robert Summers, and Bettina Aten. 2006. *Penn World Table Version 6.2.* Center for International Comparisons of Production, Income and Prices, University of Pennsylvania.

Institut National de la Statistique. 2005. *Enquête 1-2-3 de Kinshasa sur l'emploi, le secteur informel et les conditions de vie des ménages de 2004: Principaux resultats.* Kinshasa: Institut National de la Statistique, Ministère du Plan, République Démocratique du Congo (June).

Pongi Nyuba, Roger Bertrand. 2007. *Influence des caractéristiques socio-démographiques et économiques des jeunes à l'accès au premier emploi dans la ville de Kinshasa: Analyse des données de l'enquête 1-2-3 de 2004.* Kinshasa: Département des Sciences de la Population et du Développement, Université de Kinshasa.

Shapiro, David with B. Oleko Tambashe. 2003. *Kinshasa in Transition: Women's Education, Employment, and Fertility.* Chicago: University of Chicago Press.

United Nations Population Division. 2008. *World Urbanization Prospects: The 2007 Revision - Highlights.* New York: United Nations Population Division. http://www.un.org/esa/population/publications/wup2007/2007WUP_Highlights_web.pdf

Table 1. Multivariate Analyses of Employment Status, Men and Women

Variable	Modern sector vs. informal sector	Unemployed vs. informal sector	Out of labor force vs. informal sector
Age	.084**	-.146**	-.272**
Age squared	-.00080**	.00136**	.0031**
Schooling			
None	-.33	-.15	.07
Primary	-.40*	-.25*	-.10
Secondary, 1-4 years	--	--	--
Secondary, 5-6 years	.89**	.35**	.18*
University	1.94**	.64**	-.21
Migrant	.17	-.14	-.12
Female	-.83**	-.18*	1.19**
Parameters			
Intercept	-3.73**	2.35**	4.04**
Log Likelihood	-6303.1		
Model chi square	1830.3**		
Pseudo R square	.127		

Sample size = 5702.
Universe: Individuals not in school and aged 15 and over.

**   Significant at the .01 level.
*   Significant at the .05 level.
+   Significant at the .10 level.

Table 2. Multivariate Analyses of Employment Status, by Gender

A. Men

Variable	Modern sector vs. informal sector	Unemployed vs. informal sector	Out of labor force vs. informal sector
Age	.108**	-.127**	-.407**
Age squared	-.0010**	.00127**	.00463**
Schooling			
None	-.02	.49	.61+
Primary	-.25	-.08	.25
Secondary, 1-4 years	--	--	--
Secondary, 5-6 years	.64**	.27*	.65**
University	1.45**	.35*	.59*
Migrant	.08	-.18	-.51**
Parameters			
Intercept	-4.18**	1.84**	6.25**
Log Likelihood	-3010.9		
Model chi square	773.0**		
Pseudo R square	.114		

Sample size = 2644.
Universe: Individuals not in school and aged 15 and over.

**	Significant at the .01 level.
*	Significant at the .05 level.
+	Significant at the .10 level.

B. Women

Variable	Modern sector vs. informal sector	Unemployed vs. informal sector	Out of labor force vs. informal sector
Age	.106+	-.131**	-.209**
Age squared	-.00139+	.00091*	.0023**
Schooling			
None	.39	-.29	-.04
Primary	-.18	-.28+	-.25*
Secondary, 1-4 years	--	--	--
Secondary, 5-6 years	1.68**	.47**	.10
University	3.66**	1.30**	-.11
Migrant	.28	-.12	.01
Parameters			
Intercept	-5.26**	2.10**	4.10**
Log Likelihood		-3195.5	
Model chi square		632.2**	
Pseudo R square		.090	

Sample size = 3058.
Universe: Individuals not in school and aged 15 and over.

**   Significant at the .01 level.
*   Significant at the .05 level.
+   Significant at the .10 level.

Fig. A1. Real GDP per Capita, 1970-2004

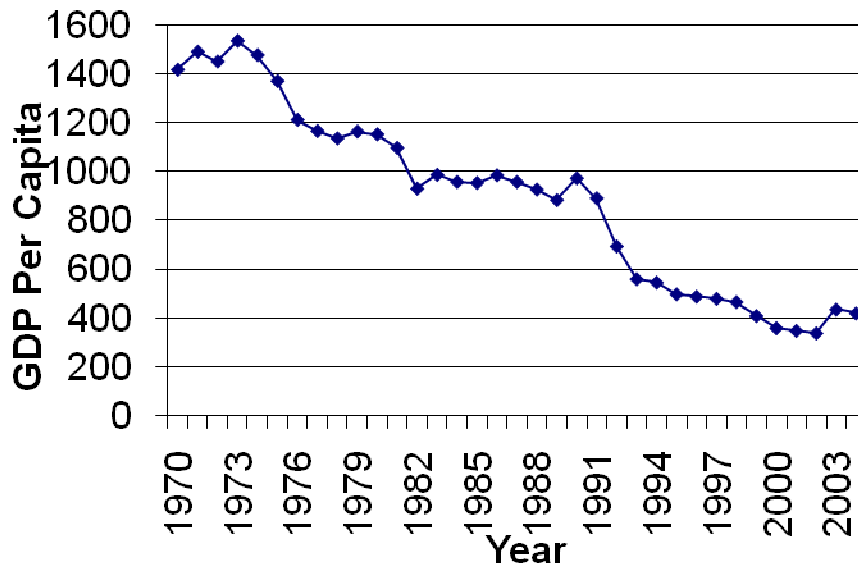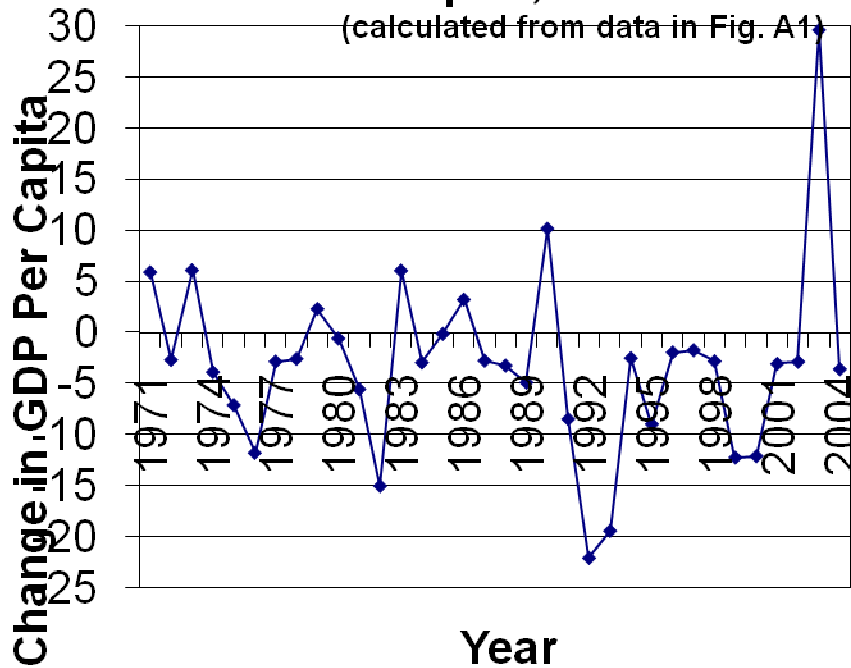Source: Penn World Tables (Heston et al., 2006)

Fig. A2. Percent Change in GDP per Capita, 1971-2004

(calculated from data in Fig. A1)

Appendix Table 1. Employment Status by Age Group, Overall and by Gender

A. Employment Status by Age Group (Total)

Age Group	Formal Sector	Informal Sector	Unemployed	Out of Labor Force	Total
15-19	0.5	7.8	6.4	85.3	100
20-24	2.3	19.5	16.3	62.0	100
25-29	6.8	33.3	21.5	38.4	100
30-34	9.4	44.5	18.0	28.2	100
35-39	15.3	50.8	14.4	19.5	100
40-44	19.3	53.6	12.6	14.5	100
45-49	21.1	52.0	11.4	15.5	100
50-54	17.9	53.2	8.9	20.0	100
55-59	13.3	51.9	13.6	21.2	100
60-64	19.1	37.0	9.6	34.3	100
65+	4.7	30.5	7.2	57.7	100
Total	**9.0**	**33.7**	**13.4**	**43.9**	**100**

B. Employment Status by Age Group (Males)

Age Group	Formal Sector	Informal Sector	Unemployed	Out of Labor Force	Total
15-19	1.0	9.3	6.6	83.1	100
20-24	2.2	20.2	16.8	60.8	100
25-29	10.2	34.3	22.3	33.3	100
30-34	14.1	47.1	23.2	15.6	100
35-39	23.8	50.5	17.6	8.1	100
40-44	29.6	50.0	17.8	2.6	100
45-49	31.9	53.0	11.1	4.0	100
50-54	33.5	47.5	15.1	4.0	100
55-59	21.0	51.5	18.3	9.1	100
60-64	32.8	35.8	15.0	16.5	100
65+	8.0	31.9	11.6	48.5	100
Total	**14.5**	**34.5**	**15.7**	**35.4**	**100**

C. Employment Status by Age Group (Females)

Age Group	Formal Sector	Informal Sector	Unemployed	Out of Labor Force	Total
15-19	0.1	6.5	6.3	87.2	100
20-24	2.3	18.9	15.8	63.0	100
25-29	4.3	32.5	20.9	42.4	100
30-34	5.5	42.3	13.8	38.5	100
35-39	7.7	51.1	11.5	29.7	100
40-44	7.9	57.6	6.8	27.8	100
45-49	11.0	51.1	11.6	26.4	100
50-54	3.5	58.5	3.2	34.8	100
55-59	0.6	52.4	5.8	41.2	100
60-64	0.0	38.6	2.2	59.2	100
65+	0.5	28.7	1.8	69.0	100
Total	**3.9**	**33.1**	**11.3**	**51.8**	**100**