# FAMILY INFLUENCES ON WOMEN'S EDUCATIONAL ATTAINMENT IN KINSHASA

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***Abstract***

*This paper examines women's schooling and educational attainment in Kinshasa, capital of the Democratic Republic of the Congo. The paper uses data from five surveys carried out in the city between 1955 and 1990 to show the evolution of school enrollments of youth and educational attainment of adult women and men. These data highlight a remarkable transformation, especially so for women: in 1955, the typical woman in Kinshasa had never been to school, while by 1990 the typical woman had attended secondary school.*

*Family influences on women's educational attainment are then examined, using the 1990 survey data. Father's education stands out as a particularly strong influence on the educational attainment of daughters. In addition, and in contrast to research findings for the United States, size of family of origin tends to be positively related to a woman's educational attainment.*

*The demographic implications of these findings, as well as the consequences for both women's education and fertility of the acute economic crisis that has characterized Kinshasa and the Congo since 1990, are also discussed. Overall, it seems quite likely that the progress in educational attainment that women had made before 1990 may well have been halted or reversed by ongoing economic crisis.*

***Keywords***: *Women's education, Family influences, Kinshasa, Democratic Republic of the Congo, Sub-Saharan Africa.*

## 1. Introduction[1]

At the International Conference on Population and Development held in Cairo in 1994, considerable emphasis was placed on the importance of women's educational attainment as a factor critical to promoting women's status and development, and as a factor contributing to fertility decline in developing countries (United Nations, 1995). Further, increased educational attainment more broadly has also been identified as a critical factor promoting economic growth (see, e.g., Mankiw *et al.*, 1992).

National governments and the education policies they pursue clearly play a critical role in facilitating or hindering the growth of schooling and increased educational attainment of women. At the same time, family background characteristics are also very important in this regard. For any given individual, the value that parents attach to schooling, the economic well-being of the family of origin, and family size are among the characteristics that are likely to influence her ultimate educational attainment.

This paper looks at educational attainment of women in Kinshasa, capital of the Democratic Republic of the Congo and second-largest city in sub-Saharan Africa. Our goals are to document the remarkable changes that took place in women's schooling during the second half of the 20th century, and to identify the importance of various family background characteristics in contributing to completed levels of education. Knowledge of the historical record and understanding the role of family influences on women's schooling should provide insights into prospects for the future. Following a brief historical overview of schooling in Kinshasa and the Congo, we use data from five surveys carried out in Kinshasa over the period from 1955-1990 in order to examine what has happened to women's education. The paper then provides an analysis of family determinants of women's schooling, using the survey data from

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1990[2]. The concluding section of the paper assesses the demographic implications of our findings, and discusses the consequences of the acute economic crisis that has ravaged Kinshasa and the Congo since 1990.

## 2. Historical overview: From colonial limits to post-independence explosion to economic crisis

During most of the colonial period, access to schooling for Congolese women was extremely limited. At the outset, this policy reflected in large part an effort to meet the rapidly growing needs of the colony for (male) office workers in government and in the private sector, as well as the growing demand for skilled and semi-skilled labor (Bolamba, 1949; Hulstaert, 1951; Mukadi, 1979). In the early 1920s, a commission on education established by the Minister of Colonies recognized the importance of providing schooling to females (Mukadi, 1979). Despite this, however, schooling of females continued to lag far behind that of males. The absence of female teachers has also been cited as a factor contributing to the delay in schooling of females (Bolamba, 1949; Hulstaert, 1951).

The provision of schooling to males had, by the end of World War II, resulted in the emergence of a growing class of educated Congolese men (so-called "évolués"). However, the continued imbalance between the schooling of males and that of females began to attract considerable attention. In addition to the factors cited above, several observers have argued that among many Congolese parents there was a lack of interest in sending their daughters to school (Bolamba, 1949; Hulstaert, 1951; Comhaire-Sylvain, 1968). Many parents simply did not see the point. For example, Comhaire-Sylvain (1968, p. 17), discussing the situation in Léopoldville (now Kinshasa) in 1945, notes that

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2. Four large-scale general household surveys were carried out in 1955, 1967, 1975, and 1984, and a small-scale survey of women of reproductive age (with 2,450 respondents) was conducted in 1990. Data from the 1955 survey, carried out by the Colonial Government, are reported in Congo Belge (1957*a*, 1957*b*). Data from 1967 are reported in Institut National de la Statistique (1969), while data from 1975 are described by Houyoux and Kinavwuidi (1986). The country's 1984 census results are reported in Institut National de la Statistique (1991), while an overview of the 1990 survey is provided in Tambashe and Shapiro (1991). See the Appendix for a summary of the methodology used in the 1990 survey.

> "A mother who was told to send her daughters to school responded: 'After school will they go and work in an office? No. Hence, it's not worth it.'"

By the early 1950s there were numerous voices, Belgian as well as Congolese, calling for a vastly increased effort on the part of the colonial government to provide schooling for girls as well as for boys (see, e.g., Bolamba, 1949; Bukasa, 1951; Wassa, 1951; Van Bulck, 1956). Many of the calls for educating women were oriented not towards providing training that would equip them to enter the labor market, but rather to give them the opportunity and knowledge to become better mothers and housewives (Bolamba, 1949 and Bukasa, 1951). The need for schooling for girls, particularly in urban areas, was manifest, as indicated by Baeck (1956, pp. 626-627):

> "The gap between the level of evolution of women and men is still very large. Women, more than men, remain attached to the traditional milieu... There is no doubt that the promotion and the emancipation of the indigenous woman are the necessary conditions for harmonious evolution in the urban milieu."

Following independence, there was a considerable push to promote schooling throughout the Congo, and with emphasis on provision to girls as well as boys. During the 1960s the country's school enrollments grew at roughly twice the pace of growth of the population at large, and this rapid growth, accompanied by growing proportions of female students, persisted during the 1970s (Kikassa, 1979). After independence as well as before, Kinshasa benefited from its privileged position as capital and hence has consistently had distinctly higher school enrollments and educational attainments than elsewhere in the country.

What proved to be chronic economic crisis began in the mid-1970s. There was a precipitous drop in the price of copper, the country's principal source of foreign exchange, and policies of Zairianization and radicalization (essentially, nationalization of businesses owned by expatriates) adopted in 1973 and 1974 had disastrous consequences (Leslie, 1993). These economic problems created severe difficulties for the education sector during the 1980s. There were sharp reductions in national budgets for education associated with efforts at structural adjustment, and in response to deterioration in the public system private schools (particularly at the primary level) mushroomed throughout Kinshasa. Data from our 1990 survey (which was carried out just prior to the onset of acute economic crisis) indicate that 28 percent of enrolled youth aged 6-9 were

in private schools, as were 14 percent of students aged 10-14. Despite the economic problems, however, enrollment rates in the city continued to increase, and the educational profile of the population changed dramatically.

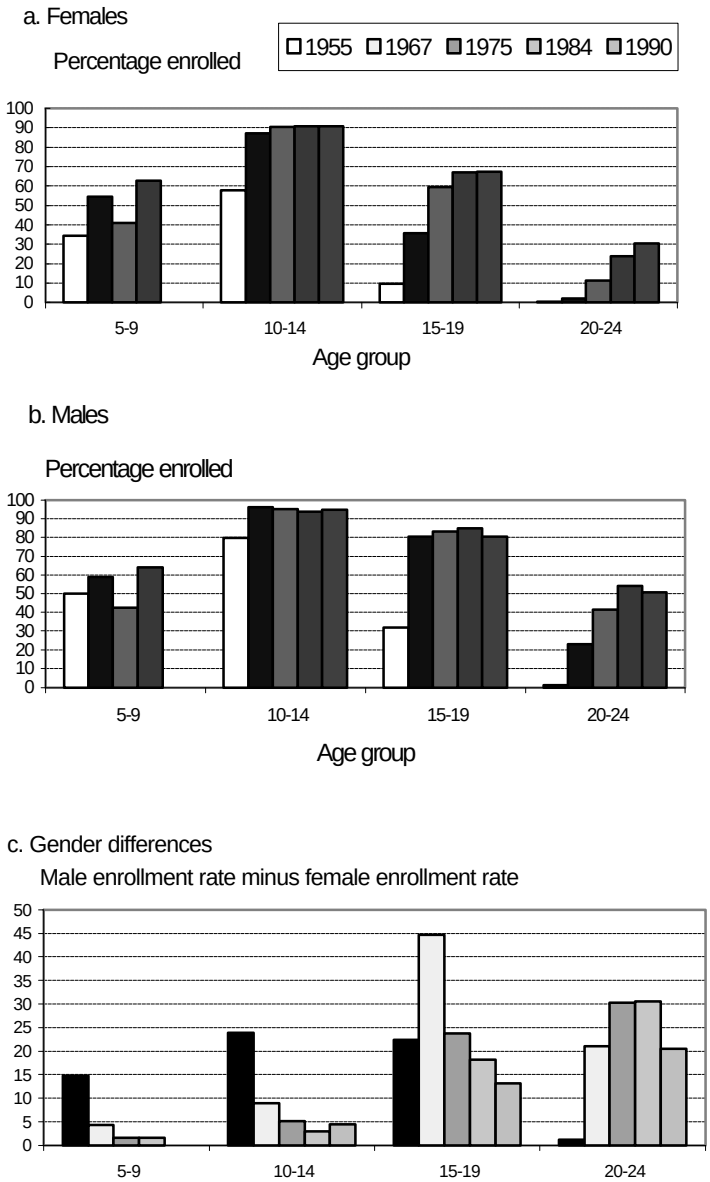
## 3. School enrollment and educational attainment

Figure 1 shows school enrollment rates for five-year cohorts of school age, separately by gender, and gender differences in enrollment rates, for the five surveys from 1955 through 1990.[3] In considering the structure of enrollment rates at any point in time, it is clear that peak enrollment takes place among those aged 10-14. In part this reflects the inclusion of five-year olds in the youngest group, but it also reflects delayed entry to school. That is, many students do not begin their studies at the "normal" age of six but instead a year or two later. When overall enrollments are low (e.g., as was the case in 1955), those aged 5-9 have the second-highest enrollment rates, while at higher overall enrollment levels (as in 1975 and later) the enrollment rates are greater for the 15-19 age group than for those aged 5-9.

Reflecting the effort made by colonial authorities following World War II to bring increasing numbers of girls in urban areas into the educational system (Bukasa, 1951, pp. 175-176), by the mid-1950s over a third of girls aged 5-9 in Kinshasa and well over half of those aged 10-14 were enrolled in school. Not quite 10 percent of those aged 15-19 were in school in 1955 (Fig. 1a). There was a very rapid expansion in enrollment rates between 1955 and 1967, with more than a doubling taking place in the overall enrollment rates of those aged 5-24. Of particular note during this period were substantial increases in female enrollment rates for those

3. Data on school enrollment for 1990 are based on information collected on the enrollment status of more than 8,500 youth aged 6 to 25 residing in the households of survey respondents. Because data were not collected on the enrollment status of five-year olds, for purposes of Figure 1 we have assumed that they have not yet begun school. Since the normal age for beginning school is six, this assumption seems quite plausible.

Figure 1
School enrollment rates by age group, 1955 to 1990




Sources: **1955**: Congo Belge, 1957*a*, Table 21 and Congo Belge, 1957*b*, Table 15. **1967**: Institut National de la Statistique,1969, Annexe XV. **1975**: Calculated from survey data. **1984**: Institut National de la Statistique, 1991, Tables 1 and 9. **1990**: Calculated from survey data.

aged 5-19, such that almost 90 percent of girls aged 10-14 and more than 35 percent of females aged 15-19 were enrolled in school in 1967.[4]

Continued expansion of enrollment of females aged 15-19 is evident between 1967 and 1975, and in the latter year over 10 percent of young women aged 20-24 were in school. Moving forward to 1984, there are further increases in enrollment rates for the youngest and oldest age groups, in particular, and enrollment of young women in their early 20s continued to increase up to 1990. Because of frequent grade repetitions, as well as delayed entry to school, it is typically the case that students in their early 20s are still in high school. In 1984, for example, 87 percent of young women aged 20-24 who were students had not completed high school. The corresponding figure for their male counterparts was 83 percent (Institut National de la Statistique, 1991, Table 9, p. 67).

Overall, then, the period from 1955 to 1990 witnessed quite substantial increases in female school enrollment. Very high enrollment rates for those aged 10-14 were reached early on (by 1967), while enrollment rates for the 5-9 and 15-19 age groups increased over time up through 1984 and enrollment rates for those aged 20-24 continued to increase through 1990.

For males there is a similar general pattern to changes in enrollment rates over time, as shown in Figure 1b. The most obvious difference is that the rates for males are consistently higher than those for females. In addition, the pace of change is more rapid for males in the 15-19 age group (e.g., the 80 percent level is reached early, in 1967), and the increased enrollment rates of young women aged 20-24 after 1984 are not matched by increases in enrollment rates of young men in this age group.

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4. The high enrollment rates for those aged 5-9 in 1967 largely are a consequence of the timing of the survey. The 1967 survey was carried out principally during the last quarter of the calendar year, and hence at the outset of the school year. By contrast, the 1975 and 1990 surveys were carried out later in the school year, and the 1984 Census refers to essentially the end of the school year. Since age is calculated by subtracting the year of birth from the survey year, this means that a survey carried out late in the calendar year, like the 1967 survey, will count as six-year olds children who were eligible to begin school at the outset of the school year. However, a survey conducted early in or midway through the calendar year will count as six-year olds children who were only age five when the school year began. Hence, absent any other changes, the latter survey will find lower enrollment rates by age for the 5-9 age group. Indeed, examination of enrollment rates by individual years of age in 1967 and in 1975 reveals that among those age 6, enrollment rates in 1967 were 39-45 percent, compared to only 11-12 percent in 1975. Further, below age 15, the rates for children age $x$ in 1967 are very close to the rates for children age $x+1$ in 1975.

Indeed, the numbers show a decline in enrollment of males aged 20-24 between 1984 and 1990, from 54.5 percent to 51.3 percent. It is possible that this accurately reflects what took place, and in particular shows the effects of prolonged economic crisis in reducing the incentives for young men to invest in education. However, it is useful to recall that the 1990 survey was a comparatively small one. Consequently, we prefer to be conservative in assessing the change since 1984.

Gender differences in enrollment rates in 1955 were relatively large for those aged 10-14 and 15-19, and somewhat smaller among those aged 5-9 (Fig. 1c). The smaller gender gap in enrollment among the younger youth that is evident in the 1955 cross-section reflects the fact that as of 1955, increased access of females to schooling was a relatively recent phenomenon. As is evident from Figure 1c, the modest gender gap in enrollment of children aged 5-9 in 1955 narrowed substantially by 1967, and by 1975 and since it has been very small. There has been a similar decline in gender differences in enrollment among those aged 10-14. As of 1990, enrollment rates of boys under age 15 were higher than those of girls under age 15, but only slightly so. Reflecting larger gains for males than for females, the gender gap in enrollment of 15-19 year-olds widened sharply between 1955 and 1967, dropped almost as sharply by 1975, and has continued to decline since. Among those aged 20-24, a gender gap emerged in 1967, widened as of 1975 and 1984, and then narrowed by 1990.

In effect, then, as enrollment rates rose over time for both males and females, there was a clear tendency for gender gaps in enrollment eventually to diminish. These reductions began with the youngest age groups and spread progressively to older age groups. For the two oldest age groups there was in fact a widening of gender differences during the period examined, but in each case there is evidence of subsequent narrowing of the differences.

A somewhat closer look at enrollment rates is provided by the enrollment profiles by single year of age shown in Figure 2.[5] As indicated in note 4, timing of the 1967 survey resulted in inordinately high enrollment rates for those under age 10 in particular. Taking this into account, the figure may be summarized by noting that over time, for both females and males, the middle portion of the enrollment profile has remained fairly stable, while the left and right "wings" of the profile have drifted upward.

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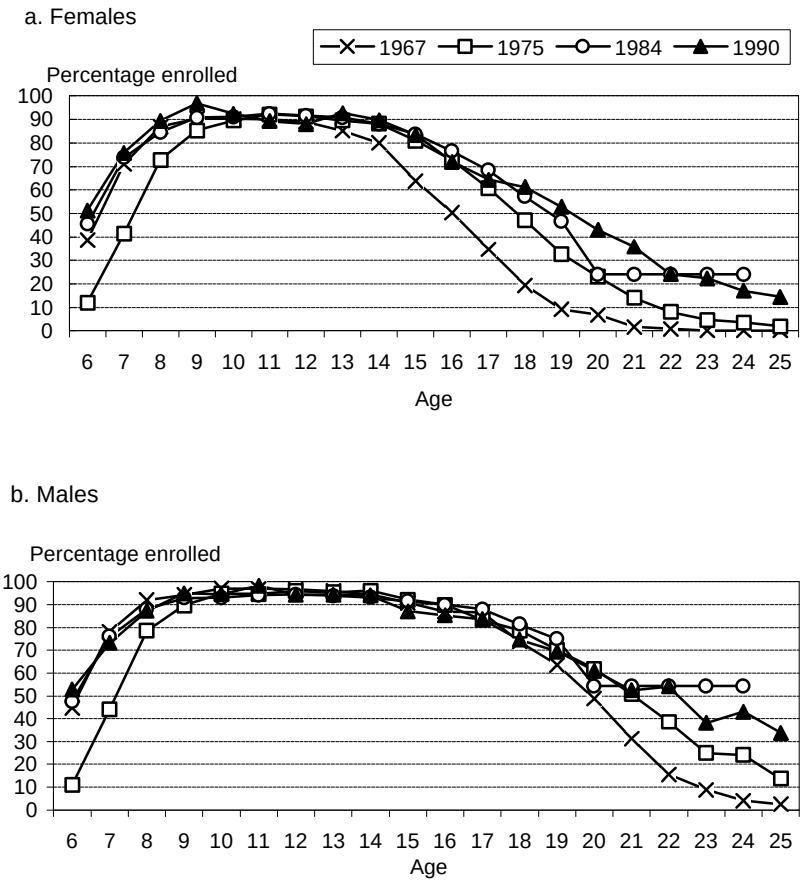
5. Data for 1955 were not available for single years of age, and data for 1984 were not available for single years of age above age 19.

Figure 2
Enrollment rates by age, 1967 to 1990




Sources: **1967**: Institut National de la Statistique, 1969, Annexe XV. **1975**: Calculated from survey data. **1984**: Institut National de la Statistique, 1991, Tables 1 and 9. **1990**: Calculated from survey data.

That is, enrollment rates for those aged 10-14 are high throughout the period from 1967-1990 (and well above the rates prevailing in 1955). For those aged 6-9, there was a distinct increase in the enrollment rates that took place between 1975 and 1984, suggesting that delayed entry to school was becoming increasingly less common during this period. For those aged 15 and over, there are slight differences by gender. Among females, enrollment rates rose from 1967 to 1975 for those aged 15-17 and then did not change much subsequently, while for ages 18 and higher there appears to be a more steady increase in enrollment rates throughout the period being examined. Among males, by contrast, there are already high enrollment rates in 1967 up to age 18 or so that do not increase much subsequently. Beyond age 18 there are increases in enrollment rates up through 1984, but no further increases afterward and if anything there appears perhaps to be a slight decline between 1984 and 1990.

The trends of rising enrollment rates and narrowing of gender differences in enrollment over time will influence the educational attainment of the adult population as well. However, the impact is gradual. This may be seen in Table 1, which shows the educational attainment of the population aged 20 and over, by age and gender, in 1955, 1967, 1975, and 1984.6 There are several clear implications of the data. Consider first a cross-sectional perspective. At each point in time younger cohorts have higher levels of schooling than their older counterparts. This phenomenon may be seen most easily by considering variations in the percentages with no schooling or in the percentages with secondary schooling as one moves across cohorts (age groups). Thus, for example, in 1955 nearly 95 percent of women aged 45-54 had never been to school, while among those aged 20-24 the corresponding figure was distinctly lower, at 79 percent.

The rising levels of educational attainment of successive cohorts at each observation point reflect the increased provision of schooling over time. Hence, for any given age group educational attainment rises as one moves from earlier to later years. This increased exposure to schooling is evident as well from considering the time-series changes through the years in the educational profile of the adult population. That is, in each successive period covered by the table the adult population has distinctly higher levels of educational attainment than in the preceding period. In 1955, for example, more than 85 percent of women aged 20 and over had

6. Age groups and schooling categories differ slightly from year to year, reflecting differences in the nature of the available data.

Table 1
Educational attainment of the population aged 20 and over,
by age group and gender, 1955-1984 (percentage distributions)

| Age | **Females** | | | | **Males** | | | |
|---|---|---|---|---|---|---|---|---|
| ***1955*** | None | Primary | Post-Primary | | None | Primary | Post-Primary | |
| 20-24 | 78.9 | 17.5 | 3.6 | | 35.1 | 53.0 | 11.9 | |
| 25-29 | 84.9 | 13.2 | 2.0 | | 39.5 | 50.4 | 10.1 | |
| 30-34 | 87.4 | 11.4 | 1.2 | | 44.2 | 46.1 | 9.7 | |
| 35-44 | 90.3 | 8.6 | 1.0 | | 50.7 | 41.6 | 7.7 | |
| 45-54 | 94.8 | 5.2 | 0.0 | | 65.6 | 29.3 | 5.1 | |
| 55+ | 96.0 | 4.0 | 0.0 | | 73.5 | 23.2 | 3.4 | |
| otal | 85.7 | 12.4 | 1.9 | | 45.6 | 45.2 | 9.2 | |
| ***1967*** | None | Primary | Second. | Higher | None | Primary | Second. | Higher |
| 20-24 | 37.7 | 39.3 | 22.6 | 0.4 | 7.5 | 25.9 | 64.1 | 2.5 |
| 25-29 | 57.4 | 30.5 | 11.3 | 0.8 | 13.7 | 40.8 | 41.2 | 4.3 |
| 30+ | 73.0 | 20.1 | 5.8 | 1.1 | 30.8 | 44.2 | 21.7 | 3.4 |
| otal | 61.2 | 27.0 | 11.0 | 0.9 | 23.2 | 40.0 | 33.3 | 3.4 |
| ***1975*** | None | Primary | Second. | Higher | None | Primary | Second. | Higher |
| 20-24 | 16.0 | 38.6 | 44.5 | 1.0 | 2.3 | 18.5 | 74.8 | 4.4 |
| 25-29 | 29.4 | 41.5 | 27.8 | 1.3 | 3.6 | 26.4 | 61.0 | 9.2 |
| 30-34 | 42.9 | 39.0 | 16.7 | 1.3 | 5.9 | 34.5 | 48.7 | 10.9 |
| 35-39 | 57.9 | 32.7 | 8.7 | 0.8 | 9.6 | 44.5 | 38.1 | 7.8 |
| 40-44 | 62.9 | 30.6 | 5.8 | 0.7 | 12.7 | 51.3 | 31.7 | 4.3 |
| 45-49 | 72.8 | 22.4 | 4.1 | 0.7 | 19.6 | 52.1 | 25.7 | 2.7 |
| 50-54 | 76.7 | 19.4 | 3.7 | 0.2 | 23.3 | 51.3 | 21.6 | 3.8 |
| 55+ | 88.7 | 9.3 | 1.9 | 0.2 | 48.2 | 39.5 | 11.1 | 1.3 |
| otal | 42.1 | 34.4 | 22.7 | 1.0 | 11.0 | 34.9 | 47.8 | 6.3 |
| ***1984*** | None | Primary | Second. | Higher | None | Primary | Second. | Higher |
| 20-24 | 7.5 | 25.4 | 63.3 | 3.8 | 2.7 | 13.3 | 73.7 | 10.3 |
| 25-29 | 13.0 | 30.3 | 52.7 | 3.9 | 3.6 | 14.4 | 64.3 | 17.7 |
| 30-34 | 20.8 | 36.8 | 39.5 | 2.9 | 5.4 | 17.4 | 60.7 | 16.5 |
| 35-39 | 33.9 | 38.6 | 26.3 | 1.2 | 8.2 | 24.0 | 52.7 | 15.1 |
| 40-44 | 48.5 | 34.5 | 16.1 | 0.9 | 11.9 | 33.7 | 42.7 | 11.7 |
| 45-49 | 60.3 | 28.7 | 10.5 | 0.7 | 15.8 | 44.9 | 31.7 | 7.5 |
| 50-54 | 69.7 | 22.6 | 7.2 | 0.5 | 22.0 | 45.4 | 28.8 | 3.8 |
| 55-59 | 72.8 | 23.2 | 4.0 | 0.0 | 27.9 | 43.7 | 25.9 | 2.5 |
| 60+ | 85.6 | 10.8 | 3.6 | 0.0 | 46.0 | 36.6 | 15.7 | 1.7 |
| otal | 26.3 | 29.9 | 41.1 | 2.7 | 9.3 | 23.1 | 55.3 | 12.3 |

Sources: **1955**: Congo Belge, 1957*a*, Table 21 and Congo Belge, 1957*b*, Table 15. **1967**: Institut National de la Statistique, 1969, Annexe XV, p. 171, Annexe VIII, pp. 158-160. **1975**: Calculated from survey data. **1984**: Institut National de la Statistique, 1991, Table 8, p. 65.

never been to school, and this percentage dropped to 61 in 1967, to 42 in 1975, and to 26 in 1984. Conversely, fewer than 2 percent of adult women had gone beyond primary school in 1955, whereas the corresponding percentages in 1967, 1975, and 1984 were 12, 24, and 44, respectively.

Consideration of the cross-sectional and time-series data jointly reveals what at first glance may appear to be an anomaly: variability in the schooling of a given birth cohort over time. That is, for example, 16 percent of 20-24 year old women in 1975 had no schooling, while nine years later, 21 percent of women aged 30-34 (almost the same birth cohorts) had no schooling. Conversely, while 79 percent of 20-24 year old women had no schooling in 1955, 20 years later the corresponding percentage for 40-44 year old women had fallen to 63 percent. These variations reflect the effects of migration: in the first case, female migrants to Kinshasa between 1975 and 1984 who were aged 20-24 in 1975 had lower schooling levels than women that age who resided in Kinshasa in 1975, while in the second case female migrants between 1955 and 1975 who were aged 20-24 in 1955 had higher schooling levels than those residing in Kinshasa in 1955.

An additional observation of note concerns the gender gap in educational attainment. In each period covered, males have higher schooling levels than females. However, there is a clear tendency toward diminution of this gender gap over time. For example, in 1955 males aged 20 and over were nearly five times more likely than females to have gone beyond primary school (9.2 percent compared to 1.9 percent). By 1967, this ratio had fallen to 3, and it fell further to about 2.3 in 1975 and to just over 1.5 in 1984. This narrowing of the gender gap in educational attainment, in turn, reflects in large part the more rapid growth in female school enrollments than in enrollments of males.

While the gender gap overall has been narrowing, one area that has not seen narrowing is in the relative proportions of females and males with higher education. Across surveys and across cohorts within surveys, proportions of both males and females with post-secondary education rose over time. However, they rose at least as rapidly for men as for women. Hence, the magnitude of the relative differences has not diminished and the absolute differences have grown as the overall proportions with post-secondary education have increased.

It is worth reiterating that within the Congo, Kinshasa has traditionally drawn a disproportionate share of resources devoted to schooling.

This can readily be seen by considering the educational attainments of young adults aged 20-24 as of the 1984 Census (Institut National de la Statistique, 1991, pp. 31, 65). In Kinshasa, five-sixths of males and two-thirds of females had completed at least some secondary schooling, and under 3 percent of males and 8 percent of females had no schooling. By contrast, in the remainder of the country just under half of males aged 20-24 and less than one fifth of females that age had been to secondary school, while over 13 percent of males and nearly 42 percent of females had no schooling.

In effect, the 1984 schooling distribution for 20-24 year old females outside of Kinshasa was quite similar to the 1967 schooling distribution in Kinshasa for females that age, while for males the 1984 figures for those outside of Kinshasa entail slightly lower levels of educational attainment than those for males that age in Kinshasa in 1967. From this perspective, then, educational attainment in the rest of the country may be seen as lagging that in Kinshasa by perhaps 17-20 years.

The magnitudes of the changes over time in the educational attainment of the "typical" adult are worth considering. In 1955, a woman in Kinshasa would most likely have never been to school, while by 1984 the modal group in the education distribution of women is the secondary level. For men, in 1955 there were almost equal percentages of those with no schooling and with primary schooling; by 1984, the majority of men had had secondary schooling. Hence, over a period of less than 30 years there were huge changes in the educational levels of both women and men. It is worth noting, however, that among those with secondary schooling in 1984 there is still a gender gap (not shown in Table 1): women are almost equally divided between those with 1-4 years of secondary schooling and those with 5-6 years, while two thirds of men have attained 5-6 years of secondary education (Institut National de la Statistique, 1991, Table 8, p. 65).

## 4. Determinants of women's educational attainment

In this section we examine the factors associated with the educational attainment of women of reproductive age in Kinshasa as of 1990. Of particular interest here is the influence of family background characteristics on women's educational attainment. The characteristics used in the analyses below have been shown to be related to the timing of key

early life course transitions in Kinshasa, including initiation of sexual activity, entry into a first union, and onset of childbearing (Tambashe and Shapiro, 1996). There is good reason to believe that they will also influence educational attainment.

More specifically, parental educational attainment, and especially father's education, is expected to be positively related to the schooling of daughters. Father's education is a crude proxy for economic well-being, and increased well-being should translate into increased demand for schooling. Parental education also is likely to be positively linked to tastes for education and to parents' aspirations for the schooling of their children (see, e.g., Shapiro and Tambashe, 2003, ch. 8). Family size, as measured by the number of siblings, has often been found to be negatively related to the schooling acquired by children, presumably reflecting a "resource dilution" effect associated with large families (Parish and Willis, 1993). However, there is also some evidence from sub-Saharan Africa (Chernichovsky, 1985) indicating that school enrollment rates tend to be higher for children from larger families. This evidence is consistent with the presence of sibling chains of educational assistance (Simons, 1994), in which older siblings often are called upon to assist in financing the cost of education of their younger siblings.

Migration, depending on when it takes place, may also influence educational outcomes. Typically, access to secondary and higher education is much easier in urban environments than in rural settings. Hence, we anticipate that the older a young woman is prior to becoming a resident of Kinshasa, the lower her level of education is likely to be. The loss of a parent can often have a substantial adverse impact on a young woman's educational attainment. However, in an African context in which the extended family is frequently ready to provide assistance (Shapiro *et al.*, 1995), it will not necessarily be the case that death of a parent will have a substantial adverse impact on a young woman's educational attainment (Lloyd and Blanc, 1996). Finally, ethnic group and religious background are additional factors likely to influence the educational attainment of young women.

The sample that we analyze consists of women aged 25 and over, so as to make sure that schooling is more or less completed. The data presented in the preceding section lead us to anticipate that younger women will have more schooling than older women, reflecting the secular increase in women's schooling. This is borne out by the data in Table 2. Among the women aged 25-29, one in four has reached at least the last

two years of secondary school, a comparable proportion has completed 3-4 years of secondary education, and fewer than one in ten has no schooling. Among women over age 40, by contrast, fewer than five percent have reached upper-level secondary school, and nearly one in four has no schooling. Overall, with 60 percent of the women having been exposed to at least some secondary schooling, this group in 1990 shows the continued effects of the long-term trend of increased schooling, as may be seen by comparing the educational distribution of the women in 1990 with that for 1984 shown in Table 1.

Table 2
Educational attainment by age group, 1990 (percentage distributions)

| Age | None | Primary | Secondary | | | University | Total |
|---|---|---|---|---|---|---|---|
| | | | 1-2 years | 3-4 years | 5-6 years | | |
| 25-29 | 7 | 23 | 20 | 26 | 17 | 8 | 100 |
| 30-34 | 7 | 31 | 20 | 23 | 13 | 5 | 100 |
| 35-39 | 11 | 42 | 19 | 15 | 10 | 4 | 100 |
| 40-44 | 19 | 51 | 15 | 10 | 4 | 2 | 100 |
| 45-49 | 29 | 39 | 1 | 29 | 1 | 0 | 100 |
| Total | 9 | 31 | 19 | 22 | 13 | 6 | 100 |

Source: Calculated from survey data.

The data analysis consists of regressing the number of years of schooling of each woman on a series of explanatory variables. In view of the secular trend in women's schooling, we control for the woman's (five-year) age cohort in all of the analyses. Three models are estimated. In the first case, the only family characteristic that we control for is parental educational attainment. A second model controls for additional aspects of the woman's family background, including the number of siblings, place of residence during her youth, and the survival status of her parents when she was age 15. Finally, the third model also adds controls for ethnic group and religious background. The results of these analyses are reported in Table 3.

Table 3
Determinants of women's educational attainment

| Independent variables | | Equation | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Father's education | None | -2.269** | -1.713** | -1.462** |
| | Primary | --- | --- | --- |
| | Secondary | 1.111** | 0.860* | 0.677* |
| | University | 3.245** | 2.860** | 2.265** |
| | Other | 0.279 | -0.014 | 0.144 |
| | Don't know/literate | -0.909** | -0.808** | -0.755** |
| | Don't know/illiterate | -2.817** | -1.935** | -1.734** |
| Mother's education | None | -0.864** | -0.643* | -0.558+ |
| | Primary | --- | --- | --- |
| | Secondary+ | 0.243 | 0.352 | 0.499 |
| | Other | 2.104** | 1.804** | 1.654** |
| | Don't know/literate | -0.368 | -0.307 | -0.364 |
| | Don't know/illiterate | 0.037 | 0.109 | -0.266 |
| Cohort | Age 25-29 | --- | --- | --- |
| | 30-34 | -0.664** | -0.488* | -0.534* |
| | 35-39 | -1.519** | -0.993** | -1.293** |
| | 40-44 | -2.600** | -1.882** | -2.112** |
| | 45-49 | -2.840** | -2.160** | -2.685** |
| No. of siblings | 0-3 | --- | -0.752** | -0.606** |
| | 4-6 | --- | --- | --- |
| | 7+ | --- | 0.706** | 0.689** |
| Place of residence up to age 12 | Large city | --- | --- | --- |
| | Small urban center | --- | -0.138 | -0.045 |
| | Village | --- | -1.491** | -1.269** |
| Place of residence ages 12-18 | Large city | --- | --- | --- |
| | Small urban center | --- | -0.796* | -0.907* |
| | Village | --- | -0.983* | -0.913* |
| Parental survival status at age 15 | Both alive | --- | --- | --- |
| | Father only deceased | --- | -0.458 | -0.440 |
| | Mother only deceased | --- | 0.119 | 0.123 |
| | Both deceased | --- | -1.491** | -1.833** |
| Ethnic group | Kwilu - Kwango | --- | --- | --- |
| | Bakongo - North | --- | --- | 1.547** |
| | Bakongo - South | --- | --- | 0.919** |
| | Mongo | --- | --- | 0.485 |
| | Ubangi | --- | --- | 0.649+ |
| | Luba | --- | --- | 0.684** |

| | | | | |
|---|---|---|---|---|
| | Other | --- | --- | 1.863** |
| | Non-Congolese | --- | --- | 0.172 |
| Religious background | Catholic | --- | --- | --- |
| | Protestant | --- | --- | -0.929** |
| | Kimbanguist | --- | --- | -1.683** |
| | Other | --- | --- | -1.858** |
| | Misc. | --- | --- | -0.813 |
| Parameters | Constant | 9.043** | 9.281** | 8.930** |
| | $R^2$ / Adjusted $R^2$ | 0.232 / 0.223 | 0.311 / 0.298 | 0.350 / 0.332 |
| | F-Ratio | 26.4** | 24.5** | 19.9** |

(---) Reference category or not included in model. (**) significant at the .01 level. (*) significant at the .05 level. ( + ) significant at the .10 level. Sample size = 1,327; mean of dependent variable = 7.1.

As shown in the first model, father's educational attainment has a very strong influence on the schooling of daughters. Relative to women whose fathers had primary schooling, those whose fathers had no schooling or were illiterate completed roughly 2-3 fewer years of education, while women whose fathers had secondary schooling completed a bit more than an additional year and those whose fathers had university education completed an extra 3 years. Clearly, then, higher levels of schooling of fathers were translated into higher levels of educational attainment of their daughters.

Mother's schooling is also a significant factor, but it has a much smaller impact than father's education. Relative to women whose mothers had primary schooling, those whose mothers had not been to school had almost a year less education, while those whose mothers had secondary schooling or higher did not show any significant difference. Controlling for parents' schooling, cohort clearly is also relevant. Other things equal, younger women tend to have progressively higher levels of education than their older counterparts. With the exception of the two oldest five-year cohorts, the difference in educational attainment across adjacent cohorts tends to be in the range of from two thirds to just over a full year of schooling.

In model 2, variables for the number of siblings, place of residence in both childhood and adolescence, and parental survival status are included, and they each are also significantly related to women's educational attainment. Women from relatively large families tend to acquire somewhat more schooling, and those from relatively small families end

up with less schooling, other things equal, as compared to women from medium-sized families. This finding contrasts sharply with evidence from the United States, where size of family of origin tends to be inversely related to educational attainment (see, e.g., Blake, 1989). It suggests that in Kinshasa, support for education from siblings and members of the extended family provides assistance to children from large families that more than offsets any resource dilution effect at the level of the nuclear family.

Women who spent their childhood (up to age 12) living in a village complete about a year and a half less schooling than women from urban places, and those who spent their adolescence (ages 12-18) in either a village or a small urban center completed close to one year less of schooling as compared to those who spent their adolescence in Kinshasa or another large city. Young women who experienced the death of one parent prior to age 15 did not appear to be adversely affected in terms of their educational attainment, suggesting that in such situations extended-family support networks have functioned effectively to preserve access to schooling. However, in cases where both parents were deceased, educational attainment was lower by about a year and a half, other things equal. Inclusion of these additional variables in model 2 results in some modest declines in the magnitudes of the coefficients for parental education and for cohort. However, significant coefficients for these variables remain.

Model 3 adds a series of dummy variables for ethnic group and for religious background. Other things equal, women from the matrilineal Bakongo tribes to the west of Kinshasa tend to acquire roughly 1-1.5 more years of education than women from the Kwilu-Kwango region to the east of the city. From among the major ethnic groups in Kinshasa, Luba and Ubangi women also attain significantly higher levels of education. Relative to women who grew up in Catholic households (the majority in the sample), those from other religious groups tended to have significantly lower educational attainment, with the difference being on the order of one to two years. As in going from model 1 to model 2, the addition of new variables in model 3 results in modest changes in coefficients for some of the variables previously included, but the substantive significance of those variables remains.

## 5. Summary and discussion

Within a context of long-term increases in the overall level of education and in the education of women relative to men, this paper has documented the changes in school enrollment of youth and in the educational attainment of adults in Kinshasa over the period from 1955 to 1990. In addition, we have examined the determinants of educational attainment among adult women as of 1990. We find that other things equal, younger women tend to have distinctly higher levels of education than their older counterparts. In addition, numerous characteristics of a woman's family background are important influences on educational attainment.

In particular, increased parental education, and especially that of the father, is associated with greater education of the daughter. Women from large families tend to have somewhat higher levels of schooling completed than those from small families, and women who migrated to Kinshasa tend to have less schooling than Kinshasa natives. The evidence suggests that the later the migration, the larger the difference in educational attainment. Loss of one parent while a girl is young does not seem to adversely affect completed schooling, but loss of both parents does. Finally, ethnic group and religious background also are significantly related to educational attainment.

The impact of parents' schooling on the educational attainment of their daughters can be expected to have important demographic implications. Given the trend toward increased schooling, each generation's parents are better-educated than their predecessors, and their daughters would be expected correspondingly to reach higher levels of schooling. We have shown elsewhere that fertility in Kinshasa fell from a high level (total fertility rate of 7.2-7.5) to a moderate level (about 5.7) between 1975 and 1990, and that this decline was closely linked to the growth over time in the proportion of women who had acquired some secondary schooling (Shapiro, 1996). More recent work (Shapiro and Tambashe, 1998, 2003) shows that there is an especially large fertility differential by education once a minimum of three years of secondary schooling has been reached.

Examination of the data in Table 2 makes it clear that among women in their late 20s in Kinshasa in 1990, more than half had achieved at least three years of secondary education. All other things equal, then, we would expect that younger cohorts would have even greater educa-

tional attainment. Consequently, there should be further downward pressure on fertility in Kinshasa on this count.

However, all other things have not been equal. In particular, since the latter part of 1990, Kinshasa (as well as the rest of the Congo) has experienced acute economic crisis. It seems likely that the economic difficulties have slowed the secular trend toward increased schooling; indeed, the trend may have even been reversed. One study done in mid-1995 (Lututala *et al.*, 1996) found enrollment rates for both female and male youth that were moderately lower than those that prevailed in 1990. Whether these declines have persisted (and perhaps increased) remains to be seen. However, if the trend toward greater educational attainment has been reversed, this would slow the tendency toward reduced fertility.

In addition, the economic crisis may have its own effects on fertility in Kinshasa, by delaying entry into marriage and childbearing (National Research Council, 1993) and perhaps also by leading parents to alter their intended childbearing (Lesthaeghe, 1993; see also Eloundou-Enyegue *et al.*, 2000). Whether or not the likely adverse impact of the crisis on educational attainment of women, which in and of itself constitutes a factor contributing to a slowdown in fertility decline in Kinshasa, is offset with respect to the impact on fertility by the effects of economic crisis influencing fertility behavior is an empirical question. In any case, though, there is cause for real concern that the progress in educational attainment that women had made has most likely at least been slowed, and may well have been halted or reversed by ongoing economic crisis.

**References**

BAECK, L. (1956), "Léopoldville, phénomène urbain africain", *Zaïre*, vol. X, no. 6, p. 613-636.

BLAKE, J. (1989), *Family Size and Achievement*, University of California Press, Berkeley.

BOLAMBA, A.-R. (1949), *Les problèmes de l'évolution de la femme noire*, Éditions de l'Essor du Congo, Élisabethville.

BUKASA, A.G. (1951), "De l'éducation de la femme noire", *La Voix du Congolais*, vol. 7, no. 61, p. 172-177.

CHERNICHOVSKY, D. (1985), "Socioeconomic and demographic aspects of school enrollment and attendance in rural Botswana", *Economic Development and Cultural Change*, vol. 34, no. 2, p. 319-332.

COMHAIRE-SYLVAIN, S. (1968), *Femmes de Kinshasa : hier et aujourd'hui*, Mouton, Paris.

CONGO BELGE, Service des Affaires Indigènes et de la Main-d'Œuvre (A.I.M.O.) (1957*a*), *Enquêtes démographiques. Cité Léopoldville*, A.I.M.O., Léopoldville (fascicule n° 1).

CONGO BELGE, Service des Affaires Indigènes et de la Main-d'Œuvre (A.I.M.O.) (1957*b*), *Enquêtes démographiques. Territoire suburbain de Léopoldville*, A.I.M.O., Léopoldville (fascicule n° 2).

ELOUNDOU-ENYEGUE, P.M., C.S. STOKES and G.T. CORNWELL (2000), "Are there crisis-led fertility declines? Evidence from central Cameroon", *Population Research and Policy Review*, vol. 19, no. 1, p. 47-72.

HOUYOUX, J., and N. KINAVWUIDI (1986), *Étude démographique de Kinshasa*, originally published in 1977, reprinted in 1986 as *Kinshasa 1975*, Bureau d'Études, d'Aménagement et d'Urbanisme, Kinshasa, and ICHEC, Brussels.

HULSTAERT, G. (1951), "L'instruction des filles", *Aequatoria*, vol. 14, no. 4, p. 129-130.

INSTITUT NATIONAL DE LA STATISTIQUE, avec la coopération de l'Assistance Technique Française (1969), *Étude socio-démographique de Kinshasa 1967 - Rapport général*, Office National de la Recherche et du Développement, République Démocratique du Congo, Kinshasa.

INSTITUT NATIONAL DE LA STATISTIQUE (1991), *Zaïre/Kinshasa. Recensement scientifique de la Population - Juillet 1984 - Caractéristiques démographiques. Volume I*, Institut National de la Statistique, Ministère du Plan et Aménagement du Territoire, République du Zaï re, Kinshasa.

KIKASSA, M. (1979), "La population scolaire zaï roise 1960-75", *Zaïre-Afrique*, no. 134, p. 209-220.

LESLIE, W.J. (1993), *Zaire: Continuity and Political Change in an Oppressive State*, Westview Press, Boulder, CO.

LESTHAEGHE, R.J. (1993), "Are there crisis-led fertility transitions?", Paper presented at the 1993 annual meeting of the Population Association of America, Cincinnati, OH.

LLOYD, C.B., and A.K. BLANC (1996), "Children's schooling in sub-Saharan Africa: The role of fathers, mothers, and others", *Population and Development Review*, vol. 22, no. 2, p. 265-298.

LUTUTALA, M., NGONDO a P., and B. MUKENI (1996), *Dynamique des structures familiales et accès des femmes à l'éducation au Zaïre : Cas de la ville de Kinshasa*, Département de Démographie, Université de Kinshasa, Kinshasa.

MANKIW, N.G., D. ROMER and D.N. WEIL (1992), "A contribution to the empirics of economic growth, *Quarterly Journal of Economics*, vol. 107, p. 407-421.

MUKADI, L.N. (1979), "Aperçu historique de l'enseignement au Zaï re (1880-1960)", *Zaïre-Afrique*, no. 134, p. 199-208.

NATIONAL RESEARCH COUNCIL, Working Group on Demographic Effects of Economic and Social Reversals (1993), *Demographic Effects of Economic Reversals in Sub-Saharan Africa*, National Academy Press, Washington, D.C.

PARISH, W.L., and R.J. WILLIS (1993), "Daughters, education, and family budgets: Taiwan experiences", *Journal of Human Resources*, vol. 28, no. 4, p. 863-898.

SHAPIRO, D. (1996), "Fertility decline in Kinshasa", *Population Studies*, vol. 50, no. 1, p. 89-103.

SHAPIRO, D., and B.O. TAMBASHE (1998), "Ethnicity, education, and fertility transition in Kinshasa, Congo", Paper presented at the IUSSP Seminar on Reproductive Change in Sub-Saharan Africa, Nairobi. Forthcoming in: P.M. Eloundou-Enyegue and J. Phillips, eds., *Reproductive Change in Sub-Saharan Africa*, Clarendon Press, Oxford.

SHAPIRO, D., and B.O. TAMBASHE (2003), *Kinshasa in Transition: Women's Education, Employment, and Fertility*, Forthcoming, University of Chicago Press, Chicago.

SHAPIRO, D., G. SIMONS, and B.O. TAMBASHE (1995), "Extended-family solidarity: interhousehold resource transfers for children's schooling and child fostering in Kinshasa", Paper presented at the annual meeting of the Population Association of America, San Francisco, CA, Department of Economics *Working Paper*, Pennsylvania State University, University Park, PA.

SIMONS, G. (1994), "Extended family structure and interhousehold resource transfers for child rearing", unpublished Master's paper, Department of Economics, Pennsylvania State University, University Park, PA.

TAMBASHE, B.O., and D. SHAPIRO (1991), *Employment, Education, and Fertility Behavior: Evidence from Kinshasa. Final Report to The Rockefeller Foundation*, Département de Démographie, Université de Kinshasa, Kinshasa.

TAMBASHE, B.O., and D. SHAPIRO (1996), "Family background and early life course transitions in Kinshasa", *Journal of Marriage and the Family*, vol. 58, no. 4, p. 1029-1037.

UNITED NATIONS, Department for Economic and Social Information and Policy Analysis (1995), *Population and Development: Programme of Action Adopted at the International Conference on Population and Development, Cairo, 5-13 September 1994*, United Nations, New York.

VAN BULCK, G. (1956), "La promotion de la femme au Congo belge et au Ruanda-Urundi. À propos de la XII$^{e}$ Session du Congrès Colonial National (23-24 novembre 1956)", *Zaïre*, vol. X, no. 10, p. 1067-1074.

WASSA, F. (1951), "Éducation de la femme noire", *La Voix du Congolais*, vol. 7, no. 59, p. 81-82.

## Appendix

The four large-scale general household surveys carried out between 1955 and 1984 were random samples of the population (e.g., obtained by taking a 10 percent sample of households in the city). Our own small-scale survey was carried out from March to July of 1990. Our survey was not a general household demographic and socioeconomic survey; rather, it was focused on women of reproductive age (ages 13-49, reflecting -- at the low end -- the age range used to study fertility in earlier surveys). Our sample consists of 2,450 women, and the sample was drawn after stratifying the population by three broad socioeconomic levels and by sector of employment. The three socioeconomic levels were high, medium, and low, containing (based on preliminary 1984 census data) roughly 4, 36, and 60 percent of the city's population, respectively.

More specifically, we began the process of drawing the sample with a list of the 264 quartiers that constitute the smallest administrative divisions of the city (urban region) of Kinshasa. From this list we eliminated those quartiers from the two rural zones that are part of the urban region but effectively are quite remote from the rest of the city of Kinshasa. We also excluded quartiers that are military camps, as well as a limited number of quartiers on the periphery of the city that are essentially of a rural character. (These procedures were followed in some of the earlier large-scale surveys as well.) This process yielded a total of 229 quartiers, representing roughly 95 percent of Kinshasa's total population. These 229 quartiers were then grouped into three strata, corresponding to high, medium, and low socioeconomic status, and consisting of 21, 96, and 112 quartiers, respectively.

A total of 19 quartiers were chosen at random for inclusion in the sample, using a systematic sampling procedure within each stratum. The 19 sample quartiers consisted of two quartiers from the high-status stratum, seven quartiers from the medium-status stratum, and ten quartiers from the low-status stratum. They are located in 17 of the 22 zones of Kinshasa that constituted the sample frame.

Within each sample quartier, half of the parcelles (units in which one or more households may reside) were covered by a household screening, carried out by the 22 interviewers who worked on the project. This screening sought to identify all women aged 13 to 49 residing in the covered parcelles, and for each woman we also sought to determine whether or not she was employed in the modern or formal sector of the economy. All told, the household screening covered a total of more than 22,850 women; this figure included more than 850 women employed in the formal sector and just under 22 thousand women not employed in the modern sector. Reflecting our interest in modern-sector employment, we heavily oversampled women employed in the modern sector, and have consequently used sample weights to generate all population estimates.

Because our 1990 survey covers a much smaller sample than the earlier surveys, standard errors are larger and the precision of estimates is lower, particu-

larly for certain subgroups (e.g., older women with higher levels of education). Despite this, however, we believe that the 1990 data provide a good indication of changes that took place after 1984. One obvious limitation of the 1990 data, though, is that there is not systematic information on men, so we are unable to go beyond the 1984 data in looking at the educational attainment of adult males. However, we did collect information on the school enrollment status of youth aged 6-25 in the households in which our sampled women resided. Hence, in the descriptive data reported in the paper we have provided information for 1990 where such information was available.