

Reconstruction of trends in level of education in sub-Saharan Africa since 1950

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Introduction

During the development process, the level of education of the population tends to increase steadily. In Europe, a significant proportion of the population knew to read and write at the beginning of the 19th century. Then, schooling became compulsory and universal (at the end of the 19th century in France). The level of education continued to increase during the whole 20th century because of the increasing length in duration of schooling. At the beginning of the 21st century, the average number of years of schooling reached high values in developed countries, ranging from 9 to 12 depending on the country.



.../... With respect to sub-Saharan Africa, the level of education at the beginning of colonization (1880) was virtually nil. Beyond a few Europeans and Asians living in the continent, the few persons who knew how to read and write were the elites in the towns and settlements along the coast, religious elites literate in Arabic in the Sahelian band, and Ethiopian elites. However, most Africans were totally illiterate. Modern schooling started slowly with colonization, then developed during the whole 20th century, thanks to Christian Mission schools, and to public schools which were created all along the century.

The aim of this work is to reconstruct the long term trends of level of education in sub-Saharan Africa. It includes two phases: a study of changes in the level of education for persons born between 1890 and 1985 (birth cohorts), followed by a reconstruction of the level of education of the labour force for the period 1950-2005.

► Data and methods

Data used for this study were provided by the Demographic and Health Surveys (DHS). These are standardized demographic sample surveys, based on fairly large representative samples of national populations, and usually of high quality. They provide data on the level of education (primary, secondary, higher) and the number of years schooling for all the persons living in interviewed households, by age and sex, which allow one to reconstruct changes over long periods of time.

For the cohort study, the average number of years schooling was calculated for all available birth cohorts, by year, between 1890 and 1985, for each sex separately. These data were smoothed by 5-year moving average. For the earlier years (1890-1910), where data were missing or deficient, trends were projected backwards, or simply put to 0 in the numerous countries where the level was nil for later cohorts.

For the period study, the level of education was reconstructed for the labour force, that is for the population aged 20-59, for each year between 1950 and 2005, from the level of education of cohorts and the age structure of the population. The age structure was smoothed by a simple exponential in most cases, and by a double exponential in countries where the age structure changed dramatically in the recent years (Lesotho, Swaziland). Here again, the DHS data were used for these calculations.

► Results

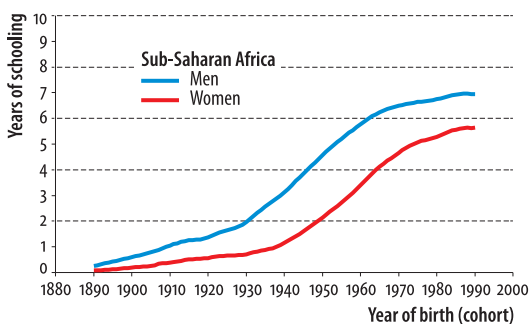
A total of 35 countries were available in 2010 for this study, covering more than 90% of the population of sub-Saharan Africa. Results of this reconstruction show that the level of education increased slowly and steadily between cohorts 1890 and 1930, then faster between cohorts 1930 and 1965, then tended to stagnate between cohorts 1965 and 1985. However, it seems to increase again for the most recent cohorts. Both sexes followed the same changes. For cohort 1985, the average number of years schooling was 6.9 for men and 5.6 for women, that is roughly half the numbers for the most advanced countries. (Figure 1)

Women have in general a lower level of education than men for cohorts born before 1965. Their level of education started to increase somewhat later than that of men, keeping an average gap of 1 to 2 years, sometimes more in certain cases. But this gap tended to decline for the recent cohorts, that is for persons born in 1980 and after. In some countries of Southern Africa, the level of education of women now exceeds that of men (South Africa, Lesotho, Namibia, Swaziland), and in others it is almost equivalent (Congo-Brazza, Gabon, Kenya, Madagascar, Rwanda, Sao-Tome & Principe, Tanzania, Zimbabwe).

Because of the modulating effect of the age structure, where various cohorts are mixed, the

level of education of the labour force increased steadily until 2005. Cohort effects documented above were diluted into the 20-59 age group. Sex differences in the labour force were of the same order of magnitude than that of cohorts (1.8 years in 2005).

Figure 1: Trends in average level of education, sub-Saharan Africa (35 countries)



► Discussion

The most surprising in the long term trend of the level of education is the stagnation, and even in many countries a decline, in the level of education for cohorts 1965-1985. This negative trend is corresponding to the economic recession of the 1975-1995 period, well documented elsewhere. It is also corresponding to the decline in adult height for the same cohorts, those who suffered the most from the economic recession. However, these changes differ markedly by country. Some countries had a steady increase in income and in level of education, especially the wealthier countries of Southern Africa. Others suffered from a major decline in level of education (Congo-Kinshasa and Rwanda), others had a prolonged stagnation of their level (Zambia, Zimbabwe). These declines and stagnations are closely associated with major economic and political crises.

At country level, one could note irregular changes. Most of these irregularities in trends are probably due to real effects, which can be

numerous and due to complex causes. For instance, the opening of new schools, the training of new teachers, the changes in regulation for duration of schooling, all could have an effect of cohort trends, and could induce sudden increase in level of education starting with the first cohort exposed. On the contrary, a lack of investments in infrastructure or in human capital could translate into a decline of the average level when population growth is higher than the growth of human and physical capital.

However, some of these changes are based on small samples, and could be due to random fluctuations, to erratic data, or to selection biases in DHS surveys. This is in particular the case for cohorts born before 1930, who were persons aged 60 and more in DHS surveys. These changes should be considered with caution, and analyzed in detail within the local context of the country, and whenever possible compared with census data.

Finally, the mean number of years of schooling captures only partially the real level acquired by the population, since the quality of the teaching is not taken into account. This quality may significantly differ between countries, and even more between African countries and developed countries.

>>> Original survey data are available from Macro International Inc, at the following web site: www.measuredhs.com

>>> Recommended citation, if you use this data set:
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