This chapter describes the state of global education inequality, based on household survey data analyzed with the aid of ADePT Edu. It provides a primer on education inequality for analysts interested in the association between access to education and socioeconomic variables such as gender, location, and household poverty.

The concept of equity—as the opposite of inequality—is based on a simple norm: all people should have equal opportunities “to pursue a life of their choosing” (World Bank 2005, p. 2). Aside from moral reasons—after all, equity is a merit good in most societies—there are economic reasons to pursue increased equity or reduce inequality. In its World Development Report 2006: Equity and Development, the World Bank sets forth two broad sets of reasons for reducing inequality: to reduce the concentration of economic benefits on elite groups (which can impose high economic and social costs on society) and to allow all people to use their talents and exercise their creativity for the benefit of their families and society.

Education has been identified as a key factor in economic and social development, and the equitable access to education of good quality has become a crucial objective of development policy. Countries with high levels of educational inequality consistently show lower levels of innovation, lower levels of production efficiency, and a tendency to transmit poverty across generations (World Bank 2005). Broader access to education,
irrespective of gender, location, ethnicity, or level of income, is most likely to increase innovation and economic growth (Mankiw, Romer, and Weil 1992). Although there is a moral argument for reducing educational inequality, there is an economic argument as well: increased access to education by all helps middle- and lower-income groups realize the full potential of their talent, increasing the level of productivity, innovation, and investment in society and, by inference, increasing the level of welfare of its population (Bourguignon 2006; Bourguignon and Dessus 2007). Although there can be economic growth in the presence of educational inequality, there is compelling evidence showing a close connection between education and productivity and between productivity and income growth (Hanushek and Wößmann 2007; Ravallion 2006; Stevens and Weale 2004).

The reduction of education inequality alone has the potential to produce quick gains in economic and social welfare—if by “equal access to education” one means equal access to the opportunities for learning and not simple equality of access to schooling (Pritchett 2004). Equal access to schooling must be complemented with increases in the quality of education and changes in school governance to address the sustainability of reforms through increased accountability (Arcia and others 2011).

Given this conceptual framework, what is the role of ADePT Edu in fostering educational equity? In a seminal paper on education inequality, Pritchett (2004) argues that many of the international goals in education refer to increases in enrollment and completion, which are merely approximations of competencies and learning achievement. Keeping children in school requires the explicit recognition that there is a demand for education, which does not equate with a demand for schooling. The demand for schooling is based on the information received by households, especially poor households, about the benefits of education, the innate abilities of their children, and the quality of schools. If education providers recognize this demand for education, the pursuit of educational equity requires the constant monitoring of educational indicators and any sources of information that promote accountability for increased learning. Hence, there is an implicit need for information about education inequality in school access and school completion, as well as information about learning outcomes. The information on education inequality presented in this chapter is just the first step in this direction.
Reporting Education Inequality with ADePT Edu

This chapter analyzes education inequality in the following three areas:

- School participation, which is a clear indicator of educational access
- School progression, which tracks a student’s timely progress from primary to secondary education
- School attainment, which reports the number of years of formal education attained by youth 15–19.

ADePT Edu addresses the first two issues and is expanding its coverage of the third. ADePT Edu developers are updating the software to allow users to analyze learning outcomes data as well.

ADePT Edu was used to process nearly 200 household surveys from more than 80 countries. The results produced global and regional snapshots of educational inequality, particularly in relation to gender, urban/rural location, and household income. These snapshots identified several broad findings about primary school–age children:

- Almost 20.0 percent of children from the bottom expenditure quintile and just 7.0 percent of children from the top expenditure quintile are out of school. Geography is also an important barrier to educational access: 15.0 percent of rural children are out of school, compared with just 8.5 percent of urban children.
- Net primary attendance rates are 8.7 percentage points higher among children from the top expenditure quintile than they are among children from the bottom quintile. Net rates of attendance are almost 5 percentage points higher in urban than in rural areas. Gender differences are relatively small.
- In general, girls are more likely to drop out than boys, rural children are more likely to drop out than urban students, and children from poorer households are more likely to drop out than children from households that are not as poor.
- Completion rates are higher for boys than for girls, and they are higher for urban than for rural children. However, the largest difference is based on expenditure quintile, with the primary completion rate of students from the bottom quintile 34 percentage points lower than the completion rate of students from the top quintile.
• Average years of schooling follows a similar pattern, with the largest difference caused by income: children from households in the top expenditure quintile have 4.2 years more of schooling, on average, than children from the bottom income quintile.

Global Educational Inequality

The pursuit of educational inequality requires an assessment of its global magnitude and scope to identify the regions of the world where it is most problematic. This is a necessary first step, because resources are limited and some regions will undoubtedly be in greater need of intervention than others.

This section analyzes educational inequality with the aid of the Gini coefficient for educational attainment. Using educational attainment as the main metric for assessing educational inequality is very useful, because the number of years of formal education received is a simple objective metric that can be compared across countries and regions. Relating key socioeconomic variables with the Gini coefficient for educational attainment provides a good assessment of educational inequality on a global scale.

The Gini Coefficient in Education

The Lorenz curve tracks income inequality in a population. It plots the proportion of total income earned by each percentile of the population. Figure 5.1 shows a triangle containing the Lorenz curve, where the triangle’s hypotenuse is a 45-degree line representing total equality in the income distribution. At every point along the hypotenuse, the cumulative percentage of total income equals the cumulative percentage of the total population.

The Gini coefficient summarizes the Lorenz curve by estimating the ratio of the area between the Lorenz curve and the 45-degree line (area A in figure 5.1) over the total area of the triangle A + B:

\[
\text{Gini coefficient} = \frac{A}{A + B}.
\]

The Gini coefficient ranges from 0 (complete equality) to 1 (complete inequality). A low Gini coefficient indicates a more equal distribution than a higher Gini coefficient; a rising Gini coefficient indicates increasing inequality.
Chapter 5: Analyzing Education Inequality with ADePT Edu

**Figure 5.1: The Education Lorenz Curve**

![Lorenz curve diagram](image)

*Source: Thomas, Wang, and Fan 2001.*

**Correlation between Inequality in Income and Inequality in School Attainment**

Estimating and plotting the Gini coefficient for income for each of the world’s regions in relation to the Gini coefficient for education reveals the relationship between income inequality and educational inequality. The results, shown in figure 5.2, show some consistency across regions: regions—and countries within regions—that have high degrees of income inequality also tend to have higher degrees of educational inequality (these results should be taken with caution because of the low $R^2$). For example, countries in the Europe and Central Asia region have lower income inequality than other regions; they also have low Gini coefficients of school attainment, indicating low levels of education inequality. In contrast, countries in Sub-Saharan Africa are clustered about Gini values of 0.40–0.50, indicating a high degree of education inequality; these countries also show a high degree of income inequality. Inequality in grade attainment means that children from poorer households tend to have fewer years of formal schooling than children from households that are not as poor. It can be argued that such inequality strongly favors the perpetuation of intergenerational
poverty in Sub-Saharan Africa, suggesting the need for targeted programs that increase educational attainment among the poor.

**Correlation between Inequality in School Attendance and Inequality in School Attainment**

Another way to examine educational inequality is to examine the impact of differences in school attendance on educational attainment. Countries with high net attendance ratios also tend to be highly equitable in school
attainment (figure 5.3). Most countries in Sub-Saharan Africa tend to have low net attendance ratios and high degrees of inequality in educational attainment. This correlation suggests that policies aimed at increasing attendance among the poor should be a first step for increasing educational attainment and—more important—reducing school attainment inequality.

Figure 5.3: Relationship between Gini Coefficient of School Attainment and Net Primary School Attendance Ratios


Note: Figures are for individuals 15 and older.
Correlation between School Completion and Inequality in School Attainment

Inequality in school attainment is also correlated with low rates of primary school completion. Countries with a high degree of inequality in school attainment—as evidenced by the low Gini coefficients of school attainment—also have low rates of primary school completion. Moreover, the trend in figure 5.4 shows that as inequality in school attainment increases, the primary completion rate decreases. The pattern of correlation

Figure 5.4: Relationship between Gini Coefficient of School Attainment and Primary Completion Rate

Note: Figures are for individuals 15 and older.
between these two variables—inequality in school attainment and primary completion rates—is very strong for countries in Sub-Saharan Africa.

**Correlation between Extreme Poverty and Inequality in School Attainment**

Extreme poverty—represented by people who survive on $1.25 a day—is somewhat associated with inequality in school attainment (figure 5.5), but

**Figure 5.5: Relationship between Gini Coefficient of School Attainment and Extreme Poverty**


Note: Figures are for individuals 15 and older. Data for poverty headcount are for the most recent year for which data were available between 2000 and 2008.
the variation around the trend line is wide, suggesting that the relationship between extreme poverty and educational inequality should be treated with some caution. Still, the trend suggests that poor countries tend to have greater inequality in school attainment. This finding is important if one has to make the case to policy makers about the design and implementation of targeted educational programs. Most countries showing a relationship between extreme poverty and educational inequality are in Sub-Saharan Africa and South Asia.

Several trends are apparent from the evidence on global education inequality:

- Regions and countries with high degrees of income inequality tend to have high degrees of educational inequality.
- Regions and countries with low net attendance ratios in primary school tend to have high degrees of educational inequality.
- Regions and countries with low rates of primary school completion tend to have high degrees of educational inequality.
- Extreme poverty and educational inequality are positively correlated in Sub-Saharan Africa and South Asia.

How Has Inequality in Educational Attainment Changed over Time?

ADePT Edu provides access to household surveys conducted since 1985. It thus allows trends over more than 30 years to be analyzed.

Education inequality can be analyzed by examining disparities in the incidence of key educational indicators between males and females, rural and urban residents, and people from the highest and lowest income quintiles. The figures in this section calculate the disparities in the incidence of indicators as follows:

- Value for males and value for females
- Value for urban residents and value for rural residents
- Value in top quintile of household expenditures per capita and value in lowest quintile of household expenditures per capita.

A negative result for gender in a figure indicates that the value for females is larger than the value for males. A negative result for location
indicates that the value for rural residents is larger than the value for urban residents; a negative value for income means that the value for households from the bottom quintile of per capita expenditures is larger than the value for families in the top quintile of capital expenditures.

Examination of household survey data on people 26–29 years old, between 1985 and 2007, suggests that household income, household location, and gender are consistently associated with levels of school attainment as well as educational inequality (figure 5.6). Worldwide, for example, people from the top expenditure quintile have about 4.0 more years of formal education than people from the bottom quintile; people from rural areas have about 2.0 years less formal education than people from urban areas, and men have about 0.5 year more education than women. Between 1985 and 2007 there was a reduction of about 0.5 year in the difference in school attainment between people from the top and bottom expenditure quintiles. At this pace, it would take more than 100 years to achieve educational equality by income level.6

The difference in educational attainment in urban and rural areas also narrowed only slightly during this 22-year period. People from urban areas are likely to have 2.0 more years of education than their rural counterparts, down from 2.5 in 1985. Urban-rural differences in attainment decreased at

![Figure 5.6: Sources of Global Disparity in Educational Attainment among the 26–29 Cohort, 1985–2007](image)

a faster rate than did differences in income, suggesting that efforts at increasing education access in rural areas have borne some success. Nevertheless, it would take more than 100 years to achieve location parity. As for gender-related disparities, the 0.5-year difference in educational attainment between men and women remained stagnant between 1985 and 2007.

This analysis refers to adults 26–29—people who most likely did not participate in the expansion of coverage resulting from global initiatives such as Education for All or the Millennium Development Goals. If global educational equity is examined for a younger cohort, the results are somewhat better, but they, too, indicate the need to implement the same policies to address inequality.

Educational Inequality and Internal Efficiency in the Education Sector

The examination of educational inequality through the Gini coefficient can be complemented with information on disparities in indicators of educational efficiency between boys and girls, urban and rural populations, and between nonpoor and poor households.

Analysis of some key indicators of internal efficiency from about 50 countries reveals several findings (figure 5.7):

- Net intake rates for the first grade of primary school are similar, regardless of gender, location, or household expenditures.
- Net attendance rates for primary school are affected by income and location. Net attendance rates of students from households in the top income quintile are about 10 percentage points higher than those of children from households in the bottom quintile. Urban children have net attendance rates that are about 5 percentage points higher than those of rural students.
- Net secondary attendance rates show even more marked income and location disparities. Attendance rates are 15 percentage points higher for urban dwellers than for rural dwellers, and children from households in the highest income quintile have rates of attendance that are 29 percentage points higher than children from households in the bottom quintile.
- Net attendance rates for postsecondary school show similar patterns: urban dwellers and children from higher-income households have
much higher rates of attendance than rural dwellers and children from poorer households.

- Men and women have equal access to education at the postsecondary level.

**Disparity in School Participation**

In analyzing out-of-school children, it is very important to distinguish three main subcategories: children who enter school but later drop out, children who are not currently in school but are expected eventually to enroll (late entry), and children who have never been in school (figure 5.8).7

Children from higher-income households have higher dropout rates than children from lower-income households; these children are also more likely to enter school late.8 For children who have never been to school, the trend is reversed: the proportion of children who have never been to school is

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**Figure 5.7: Sources of Global Disparity in School Participation among the 15–19 Cohort, by Education Level**

30 percentage points higher among children from households in the bottom quintile than it is among children from the top quintile.

**Disparity in School Progression**

Access to school is only part of the educational inequality picture. Educational inequality is drastically reduced if most—if not all—children progress from primary to secondary education. In the most advanced countries, the rate of transition from primary to secondary education approaches 100 percent.

Disparity in the primary to secondary education transition rate fosters income inequality, because there is a direct link between salaries and school attainment. Students who finish high school generally command higher salaries than those who finish only primary school (Psacharopoulos and Patrinos 2002).

Figure 5.9 shows primary and secondary completion rates for the 15–19 cohort, as well as the transition rate from primary to secondary. The inequalities in primary completion rates are glaring. Completion rates of children from families in the top quintile are 35 percentage points higher than those of children from the lowest quintile. The primary
school completion rate is 18 percentage points higher in urban areas than in rural areas. It is about 7 percentage points higher for boys than for girls.

Differences in the transition rate to secondary school are negligible. This is an extremely interesting finding because it suggests that inequality in the completion of primary or secondary school is more closely related to inequality among students who do not drop out during primary or secondary school than it is to inequality in the transition from primary to secondary. As secondary enrollment rates in most developing countries are significantly lower than primary rates, these results suggest that policies and programs oriented toward inequality in completion rates should pay attention to income and location differences, as the problem with secondary enrollment is unrelated to inequalities in the transition rates.

**Disparity in the Number of Years of Schooling**

School attainment—defined as the total number of years of formal schooling received by a person—is a powerful indicator of educational access. Differences in school attainment across groups in a society are a powerful indicator of educational inequality.
Figure 5.10: Sources of Global Disparity in School Attainment among the 15–19 Cohort


Figure 5.10 shows the disparities in school attainment between boys and girls, urban and rural dwellers, and children from the top and bottom income quintiles. The results show the following:

- Gender differences do not exist for the sample of 50 countries as a whole.\(^9\)
- Urban dwellers have 1.5 more years of schooling, on average, than do rural dwellers.
- People from the top income quintile have 2.6 more years of schooling, on average, than do people from the bottom income quintile.

Educational Inequality across Regions

This section examines the association between education inequality and gender, location, and income across regions. The regional trends are supplemented with examples from individual countries, to illustrate the relevance of inequality to specific educational policies and programs.
Regional Disparity in School Participation

Participation in the educational system is a clear indicator of educational access. School participation by children at an appropriate age reflects a country's commitment to the internal efficiency of the educational system; the reasons for not attending school shed light on a country's efforts to provide an adequate number of teachers and facilities at a reasonable distance from students' homes. School participation rates capture children who are not in school, a reverse indicator of school participation that can be extremely useful for identifying policy interventions. The net attendance ratio provides a strong signal about a country's commitment to ensure educational access to everyone, because it measures the proportion of school-age children actually attending school. In the case of postsecondary education, where age is not as constraining as it is at the primary or secondary level, the gross attendance ratio is used in the analysis.

Primary School Attendance

Figure 5.11 shows disparities in net primary attendance rates across regions by gender, location, and income. The largest disparities are in South Asia and Sub-Saharan Africa, where the net attendance rate among the poorest households is almost 20 percentage points lower than the attendance rate among the least poor households. The net attendance rate among urban students is 12 percentage points higher than among rural students in Sub-Saharan Africa and 5 percentage points higher in South Asia. Disparity in other regions in the world are small.

The disparities in Sub-Saharan Africa hide wide disparities across countries. In Benin, for example, inequalities are wider than the average for the region (figure 5.12). School participation is slightly unequal, with boys, urban dwellers, and children from higher-income households more likely to attend school. The net attendance rate among rural children (57.8 percent) is 15.8 percentage points lower than participation among urban children (73.6 percent). This large difference indicates the need to broaden rural education coverage. Income-related differences are also large: the net attendance rate among children from the top income quintile (82.3 percent) is 40.4 percentage points higher than participation among children from the bottom quintile (41.9 percent). A similar pattern is observed for secondary and postsecondary education. The example of Benin shows that although
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Figure 5.11: Sources of Global Disparity in Net Primary Attendance Rates, by Region


Figure 5.12: Net Primary Attendance Ratios in Benin, 2006

gender and location disparities may seem small at the regional level, they may be large at the country level.

**Secondary School Attendance**

Net attendance rates for secondary school are very important in low- and middle-income countries, many of which have moved toward universal primary education but lack the resources to accommodate vast numbers of students in secondary education. Analysis of the net attendance rate in secondary education may yield insight into the progress of educational inequality in the process of expanding access to secondary education.

At the secondary level, gender is a significant source of disparity only in South Asia, where more boys attend school than girls (figure 5.13). (In Latin America and the Caribbean, more girls attend secondary school

**Figure 5.13: Sources of Disparity in Net Secondary Attendance Rates, by Region**

than boys.) Urban students have much higher net secondary attendance rates than rural students. This finding is not surprising given that countries face significant difficulties serving rural students of secondary age because of the lack of population density and because of economies of scales in school infrastructure and the higher costs of transportation and lodging. In addition, poverty tends to be higher in rural areas, forcing youth to enter the labor market.

The largest disparities in net secondary attendance rate are associated with income. Children from households in the lowest income quintile have net attendance rates that are 27 percentage points lower than students from households in the top income quintile in East Asia and Pacific, about 35 percentage points lower in Latin America and the Caribbean, and nearly 40 percentage points lower in South Asia and Sub-Saharan Africa.

Postsecondary Attendance

More girls than boys attend postsecondary education in East Asia and Pacific, Europe and Central Asia, and Latin America and the Caribbean (figure 5.14). In the Middle East and North Africa, South Asia, and Sub-Saharan Africa, more boys than girls attend postsecondary education. Urban students have gross attendance rates for postsecondary that are about 10–15 percentage points higher than those of rural students in all regions except Sub-Saharan Africa, where the disparity is about 5 percentage points.

Net Primary Intake Rate

Educational inequality in school progression can be analyzed by observing differences in the net intake rate, defined as the proportion of children of official age for entry into the first grade that enter first grade on time. Generally, poorer children and children in rural areas enter school at a later age than children who are less poor and children in urban areas. Such a discrepancy reflects lower access to school—school is often too distant for young children in rural areas—as well as inadequate preschool coverage in poorer areas. Both factors result in lower educational opportunities for a large number of children.

Figure 5.15 shows the disparities in the net intake rate in the first grade of primary school. Gender disparities are relatively small across all regions. As
net intake rates are generally in the 30–40 percent range for most developing countries, a 5 percentage point difference between two groups is significant, albeit not overly large. There is no obvious pattern in urban-rural intake: in East Asia and Pacific, the Middle East and North Africa, and Sub-Saharan Africa, the net intake rate favors boys over girls, but the percentage point difference between the two is modest (less than 5 points in the worst case). In Europe and Central Asia and in Latin America and the Caribbean, the net intake rate for the first grade favors girls over boys by a very small margin. In South Asia the net intake rate is higher in rural areas and among students from lower-income households, but these results should be interpreted with caution, as they are based on data from just two countries.

Out-of-School Children

Another aspect of education inequality relates to children of school age who are not in school. ADePT Edu classifies these children into three
categories: children who have never been to school; children who are not yet in school because they are late for entry for any reason, such as sickness or a family situation; and children who are no longer in school because they dropped out. The implications for policy and inequality are different for each of these reasons. For children who have never been to school or who are late for entry, the policy prescriptions may include reducing the distance to school by building more schools, increasing preschool coverage to encourage households to enter children into the system, and ensuring that schools are safe. As Pritchett (2004) notes, however, the reason for never having been to school usually has little to do with the supply of schools. Policies oriented toward reducing the dropout rate may include ensuring that teachers show up to teach, preventing disillusionment among students, and reexamining the education curriculum for relevance.

At the regional level, disparities in the percentage of out-of-school children are explained largely by differences in income (figure 5.16). In general, lower rates of out-of-school children are observed for boys,
urban areas, and higher-income households. The largest disparity is in South Asia, where the proportion of out-of-school children is 5.7 percent in the top income quintile and 34.6 percent in the bottom quintile, a difference of 28 percentage points. This difference is also large in Sub-Saharan Africa (24 percentage points). Income also affects the percentage of children out of school in other regions, but the differential is much smaller.

The association between low income and lower access to education is reinforced by the regional data on dropouts. In Latin America and the Caribbean, the Middle East and North Africa, and South Asia, the dropout rate in the bottom income expenditure quintile is 15 percentage points higher than the rate in the top quintile (figure 5.17). In contrast, in Europe and Central Asia the dropout rate is higher among children from higher-income households.

Differences in income also explain most of the regional disparities in the proportion of out-of-school children who are expected to enter school at a
later age (figure 5.18). Across all six regions, poorer children enter school at a later age than children from less poor households, with that difference ranging from 15 to 25 percentage points. In Europe and Central Asia, and to a lesser extent Sub-Saharan Africa, late entry is also more prevalent among rural children.

Across regions, the percentage of children who are classified as never in school is much higher among children from the bottom income quintile, with differences of 15–30 percentage points (figure 5.19).

**Regional Disparity in School Progression**

This section describes regional disparities in school completion, the transition from primary to secondary levels, and school attainment. These disparities reflect the need to address education inequality in Sub-Saharan Africa.
and South Asia, where some of these disparities are larger than they are in other regions.

**Primary Completion Rates**

Income disparity has a large impact on primary completion rates in all regions except Europe and Central Asia (figure 5.20). In Sub-Saharan Africa, the primary completion rate for students from the top expenditure quintile is 55 percentage points higher than the rate for students from the bottom quintile. In all regions except the Middle East and North Africa and Europe and Central Asia, the difference in primary completion rates between children from the top and bottom expenditure quintiles is more than 30 percentage points. Across regions differentials in income are the most important source of disparities in primary completion rates.

Figure 5.18: Sources of Disparity in Late Entry among Out-of-School Children, by Region

Secondary Completion Rates

The regional evidence shows a similar pattern at the secondary level, but the disparities are larger, because secondary enrollment is almost always lower among poorer children, who often need to enter the labor force to help their households (figure 5.21). The impact of income is substantially higher in Latin America and the Caribbean, South Asia, and Sub-Saharan Africa than in other regions. Also important in these regions are disparities between urban and rural children. All three regions need to be more active in targeting programs and policies for improving access to secondary education by the poor.

Data on completion rates indicate that the effect of income on school entry is much greater at the secondary than the primary level (figure 5.22). In India the proportion of children who complete secondary school is about
10 percent in the bottom quintile and about 65 percent in the top quintile. The relationship between secondary completion rate and income is positive: as income increases, the completion rate increases as well. This pattern suggests the need to target programs for the poor and to develop sliding formulas to take into account the positive relationship between income and access to secondary education.

Primary to Secondary Transition Rate

Income is a major source of inequality in the transition to secondary school in Latin America and the Caribbean, the Middle East and North Africa, and South Asia. In the Middle East and North Africa and Sub-Saharan Africa, rural areas are at a significant disadvantage relative to urban areas (figure 5.23)

Regional Disparity in School Attainment

Educational inequality is also reflected in the number of years of formal education attained by 15- to 19-year-olds. Income differentials have the
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Figure 5.21: Sources of Disparity in Secondary Completion Rates, by Region


Figure 5.22: Primary and Secondary Completion Rates in India, 2005

greatest impact on the average total years of schooling of people 15–19 (figure 5.24). Urban residents have more education than rural residents in all regions except Europe and Central Asia, but the difference attributed to location is only about one year of schooling. Gender is not a significant source of disparity (although regional averages may hide significant intraregional variations). The strong impact of poverty on years of schooling across all regions calls for policy interventions aimed at overcoming the income barrier and increasing educational access to and attainment by the poor.

Analyzing the number of years of education among people 25–45 is a good way to assess education inequality. People in this age range are most likely finished with their formal education and are most likely to be in the labor market. Assessing their total years of education is thus a good way to capture the effect of inequality. Figure 5.25 shows the Gini coefficient for school attainment by region. It shows that Europe and Central Asia is the
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Figure 5.24: Sources of Disparity in Total Years of Schooling, by Region


Figure 5.25: Gini Coefficient of School Attainment, by Region

most equitable region, followed by Latin America and the Caribbean, East Asia and Pacific, the Middle East and North Africa, South Asia, and Sub-Saharan Africa.

**Concluding Comments**

Analysis using ADePT Edu reveals the relationships between inequality in education on the one hand and income, location, and gender on the other. It shows that gender differences are modest in most countries for most indicators. In countries where gender disparities are still large and favor boys, policies must be implemented to increase girls’ access to learning; policies should also be in place to ensure equality in countries where boys are being left behind.

Across regions, households from the top expenditure quintile have much better educational indicators than households from the bottom expenditure quintile. Poverty, the data clearly suggest, is a significant barrier to educational equality in most countries in the ADePT Edu database.

Urban-rural disparities are larger in Sub-Saharan Africa and smaller in Europe and Central Asia than in the rest of the world. However, policies that favor access in rural areas may not be appropriate, for several reasons. First, a dichotomous variable such as urban/rural may hide continuities in urbanization that may render comparisons by location uninformative for policy. Second, access to education does not mean access to school infrastructure but rather access to quality education. Taken together the distinction in urban-rural inequalities should serve as a baseline for further analysis to study hidden variations and identify the critical points.

The main findings on inequality and school participation, school progression, and school attainment can be summarized as follows:

- Net intake rates for the first grade of primary school are fairly equal across income levels, location, and gender.
- Net attendance rates for primary school are affected by income and location. Children from households in the highest expenditure quintile have net attendance rates that are about 10 percentage points higher than those of children from the lowest expenditure quintile. Urban children have net attendance rates that are about 5 percentage points higher than those of rural children.
Secondary attendance rates are 15 percentage points higher in urban areas than in rural areas. Children from households in the highest expenditure quintile have rates of attendance that are 29 percentage points higher than those of children from the lowest expenditure quintile.

Gender differences are very low, but the evidence may need to be fleshed out, as between-country variations may cancel out at the regional level. In some countries girls are ahead of boys; in other countries boys are ahead of girls. In both cases education policy should take corrective action.

The main findings on school progression can be summarized as follows:

- 99.0 percent of children from the top expenditure quintile and just 65.3 percent from the bottom quintile complete primary school, a difference of about 34 percentage points.
- 94.1 percent of urban children and 76.2 percent of rural children finish primary school, a difference of about 18 percentage points.
- 85.6 percent of boys and 78.8 percent of girls complete primary school, a difference of 7 percentage points.
- The transition from primary to secondary school is about the same regardless of income, gender, or location. This is an extremely interesting finding because it suggests that inequality in the completion of primary or secondary school is more related to inequality among children within primary and within secondary school, than to inequality reflected in the dropouts, that is, during the transition from primary to secondary school.

The main findings on school attainment can be summarized as follows:

- For the world as a whole, people in the highest expenditure quintile have about four more years of formal education than do people in the lowest expenditure quintile. Urban residents have about two years’ more formal education than do rural residents, and men have about half a year more education than do women.
- Regions and countries with high degrees of income inequality tend to have high levels of educational inequality.
- Regions and countries with low net attendance ratios in primary school tend to have high levels of educational inequality.
Regions and countries with low rates of primary school completion tend to have high levels of educational inequality.

The ADePT Edu results can be treated as benchmarks for education indicators and educational inequality. Their consistency with international indicators and their systematic approach to data presentation make them useful tools for tracking performance in the education sector.

Notes

1. The household survey profiles analyzed in this chapter were produced by Emilio Porta (2011). This dataset is available as an EdStat data query.
2. Household surveys generally use expenditures as a proxy for income. To facilitate reading, the term income is used interchangeably with household expenditures per capita throughout the chapter. The percentage point difference between the top and bottom expenditure quintiles is referred to as income disparity throughout the rest of this chapter.
3. In comparing the differentials associated with income with the differentials associated with dichotomous variables such as urban/rural, one has to be careful about interpreting the results. As Luis Crouch noted in his review of an earlier draft of this chapter, urban/rural is a dichotomous variable, whereas income is a continuous variable. Comparing the top and bottom income quintiles is equivalent to comparing extremes in a continuous variable, which tends to exaggerate the impact of income as opposed to location. It may be, for example, that if one defined the 40th income percentile as nonpoor and all households below it as poor, the difference attributed to income would not be as large as in the case in which the nonpoor are defined as households in the top 2 percent of income. If urban/rural locations were continuous—expressed in distance to the center of town, for example—and households were divided into quintiles, differences between urban and rural locations would be larger.
4. For education the Lorenz curve is applied to the population 25–45, under the assumption that most people in this age group are in the labor force and have already received as much formal education as they will receive.
5. In the case of income, for example, complete inequality would mean that a single person captures 100 percent of all income and the rest of
the population receives none; the Gini coefficient would then be equal to 1. Conversely, a completely equal society would be one in which every person received the same amount of income. In this case, the Gini coefficient would be 0. In the case of education, perfect inequality means that all the education is received by a single person; perfect equality means that every person in the country has exactly the same number of years of education.

6. These figures refer only to the gap in years, not to inequality within each category, as in the case of the Gini coefficient. The Gini coefficient is akin to a coefficient of variation (that is, for a given variance, the Gini is lower if the mean is higher). Thus, the absolute gap between rich and poor may be constant or even growing, but if the mean years of school attainment for both groups are increasing faster than the gap, the Gini coefficient will decrease and inequality will be reduced.

7. The percentages of out-of-school children were estimated using the UNESCO methodology described in box 4.1 in chapter 4.

8. This finding requires further analysis. Anecdotal evidence suggests it may reflect the move from public to private school.

9. Gender is still an issue in many countries (including countries in which girls have more education than boys). The policies that produced gender equality and gender inequality in school attainment need to be analyzed.

10. Here the gross attendance rate is used instead of the net attendance rate because in developing countries many people study part time for many years. As a result, many postsecondary students are older than the official age for postsecondary education.

References


