

# The State of Schooling in Africa: A *LAYS* Perspective

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**Abstract**—The Learning Adjusted Years of Schooling (LAYS) was introduced by Filmer et. al. [1] to augment the previously oft used metric of enrollment as a major education outcome. I use the LAYS framework to draw conclusions on the current state of schooling in Africa and broadly compare it to other regions. The paper also briefly discusses the challenges and opportunities that improving learning outcomes entails in Africa. A deeper understanding of the challenges in the African subcontinent in improving schooling requires a disaggregated study of individual countries, tribes, communities and socioeconomic circumstances.

**Index Terms**—Education; LAYS; Learning; Development.

## 1 INTRODUCTION

Enrollment, i.e; the average number of years of schooling in the population was historically used to measure education outcomes, especially in LMICs (low middle income countries). However, this metric was often deceptive as it failed to take into account the quality of education. 10 years of schooling in Canada was often not equivalent to the same number of years of schooling in Cambodia. The LAYS measure was introduced to provide equivalent comparisons across countries on the state of schooling. The measure takes into account test scores from internationally standardized tests to arrive at a metric to better understand the evolution of ‘learning’ across regions. The metric of ‘Learning Adjusted Years of Schooling’ adjusts the number of years of schooling to capture the quality of education. For example, Crawford et. al. identifies that while the average years of schooling in Eswatini and Ghana are 8 years and 12 years respectively, it both translates to only 5.5 LAYS. [2]

While education in Africa has underwent significant improvements, it still performs poorly in comparison to countries of similar income [3]. Studies indicate that less than two out of three students in Africa could read a letter, and of them, only half could read a word [4]. A major policy issue in Africa is hence, increasing the quality of education. Africa’s education system is hampered by very poor quality of teaching, revealed by findings that even after several years of school, many are illiterate or lack basic numeracy skills [4]. In this brief, I use data from several collated sources to summarize the trends in quality and quantity of schooling in Africa, contrasting it to other similar regions.

## 2 THE STATE OF SCHOOLING IN AFRICA

The median proportion of children completing primary school across countries has risen from 35% to 53.9% between 1999 and 2019 (World Bank, 2020). Figure 1 shows this tumultuous rise over available periods of data. The median proportion of children completing lower secondary school

across countries has also risen dramatically, from a mere 5% in 1971 to 40% in 2015 [3]. Within-region differences are evidently present, with North Africa faring better across both Learning adjusted and expected years of learning (Appendix A). North African countries, with their relative closeness to Europe such as Algeria, Morocco and Egypt with an average of 6.4 expected years of schooling fare relatively better. However, this does not represent quality of education, which is commonly poor across both northern, central and southern regions. The learning adjustment i.e, the difference between EYS and LAYS of the same countries are -4.5 years in 2020. This difference persists in even significantly poorer countries such as Congo (-4.6 years) and South Africa (-4.6 years). LAYS indicates that the difference in learning within Africa is almost entirely due to the quantity of schooling received and not the quantity.

The within region difference is also evident in Appendix A, which indicates that received learning is directly correlated to GDP. More productive countries are also able to provide longer years of schooling, albeit at poor quality. Sub-saharan countries like Ghana, Namibia and South Africa fare better, at an average of 2 additional years of learning. Comparative differences Within sub-saharan differences may also arise due to differences in colonial origin [3]. Former british colonies such as Kenya, South Africa and Egypt provide noticeably better schooling, at least in terms of quantity as was explored by Yannick et. al. [6]

## 3 AFRICA AND THE WORLD: HOW DOES THE REGION COMPARE?

Sub-Saharan Africa is the lowest ranking region in terms of both Expected and Adjusted years of schooling. On average, students are expected to receive 5 years less schooling in this region than they would in North America (Figure 1). A better comparative group are low-income and lower-middle-income countries outside of Africa as shown in Figure 2. Expected years (and Learning Adjusted Years) of schooling are lower in African countries compared to non-African low income countries such as Ukraine, Vietnam and Ghana. Sub-saharan low income countries on average receives 4.1 years

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of Adjusted Learning compared to the 6.7 years in European low income countries. Middle eastern and North African LAYS is very comparable with similar LAYS and a 1 year difference in EYS.

Angrist et. al [7] conditions on country fixed effects to arrive at regional differences in Harmonized Learning Outcomes. The authors consider the emergence of a plateau for countries with previously high HLO, i.e, a 'Ceiling Effect'. The ceiling effect in the figure emerges due to a constrained upper bound on possible scores, reducing the effectiveness of HLO in the context of nations with a pre-existing high level of human capital. For African, however, there is a clear indication of improvement in predicted HLO by 16 points over the last 15 years, which approaches the 20 point advance that Europe and Central Asia has achieved. This rate of increase however is still marginal, and there is no indication of an endogenous improvement that would close the large gap between Africa versus more developed regions.

A key takeaway is the lower rate of primary enrollment in Africa (

#### **4 LAYS IN AFRICA: HOW VALID IS THE METRIC?**

#### **5 HUMAN CAPITAL AND EDUCATIONAL OUTCOMES RESEARCH IN AFRICA**

#### **6 CONCLUSION**

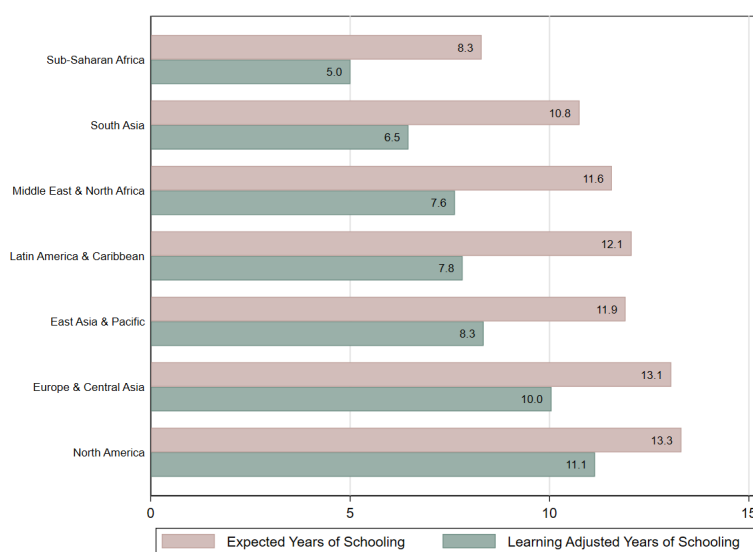
#### **7 REFERENCES**

#### **REFERENCES**

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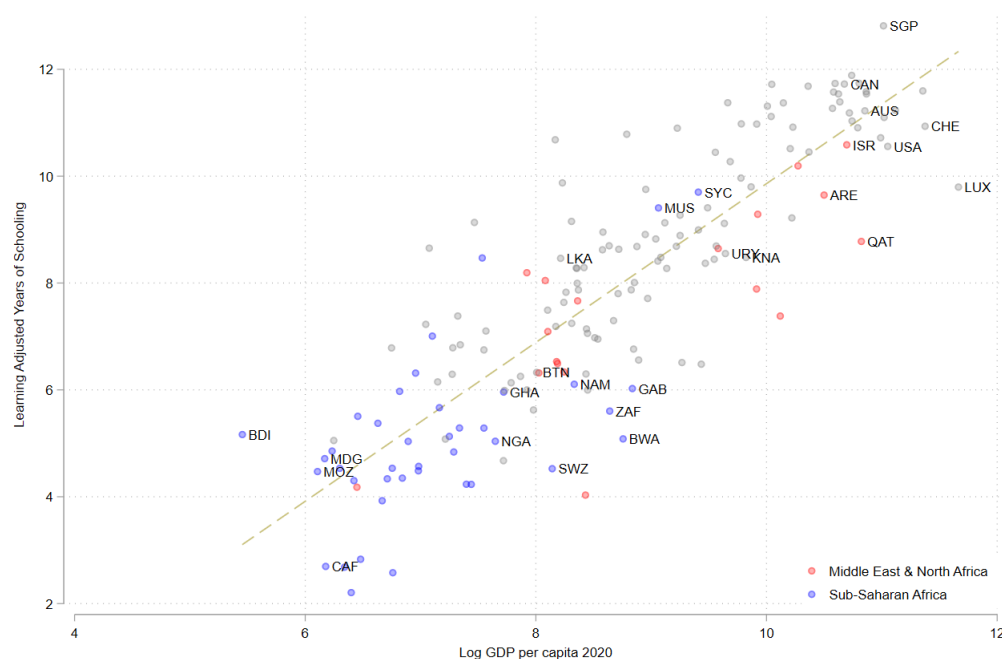
## APPENDIX

## EXPECTED YEARS VS. LEARNING ADJUSTED YEARS OF LEARNING (2020)



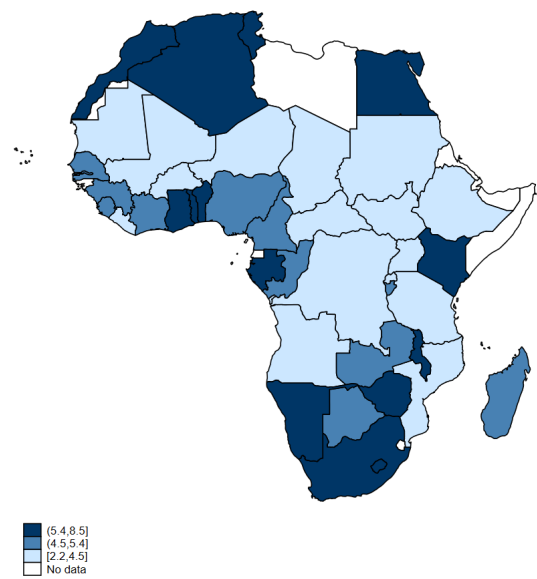
**Figure 1:** Source: Author tabulation using 2020 data from the World Bank: Human Capital Project. The Learning Adjusted Years of Schooling (LAYS) is constructed according to the methodology of Filmer et. al. [1]

## LEARNING ADJUSTED YEARS OF LEARNING VS LOG GDP PER CAPITA (2020)



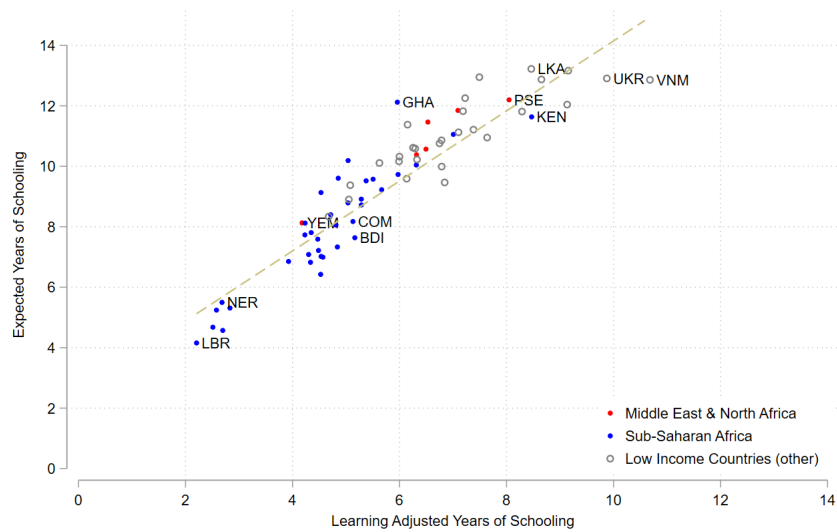
Source: Author tabulation using 2020 data from the World Bank. GDP is represented as log of GDP per capita in US dollars. The Learning Adjusted Years of Schooling (LAYS) is constructed according to the methodology of Filmer et. al. [1]

FIGURE A1: LEARNING ADJUSTED YEARS OF LEARNING IN AFRICA (2020)



Source: Author tabulation using 2020 data from the World Bank. LAYS (Learning adjusted years) data is unavailable for Somalia, Djibouti, Eritrea and Libya in 2020. Darker blue areas represent the highest tertile of LAYS which also includes South Africa, Algeria, Morocco and Kenya. The lowest tertile also includes Niger, Congo and Ethiopia.

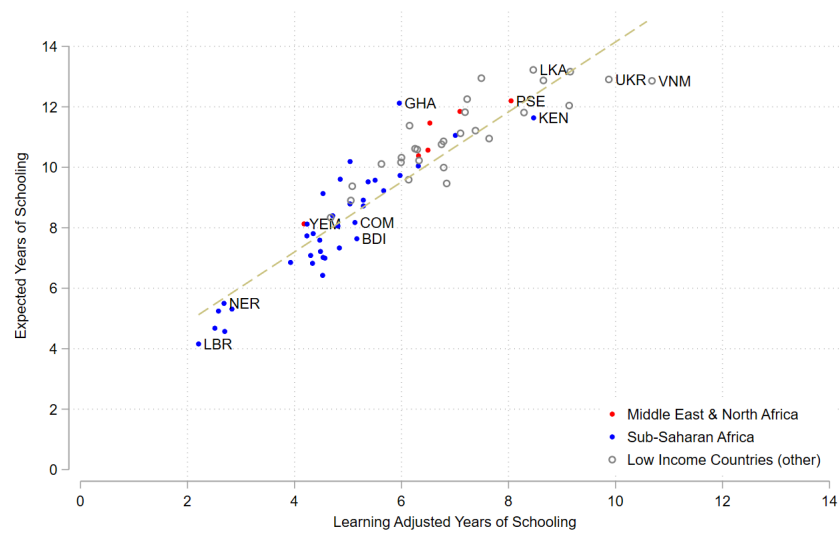
FIGURE A1: EYS vs LAYS, AFRICAN vs NON-AFRICAN LOW INCOME COUNTRIES ((2020)



**Figure 2:** Source: Author tabulation using 2020 data from the World Bank. The graph shows the relationship between Expected and Learning Adjusted years of schooling for African countries vs. low and low middle income countries from outside Africa.

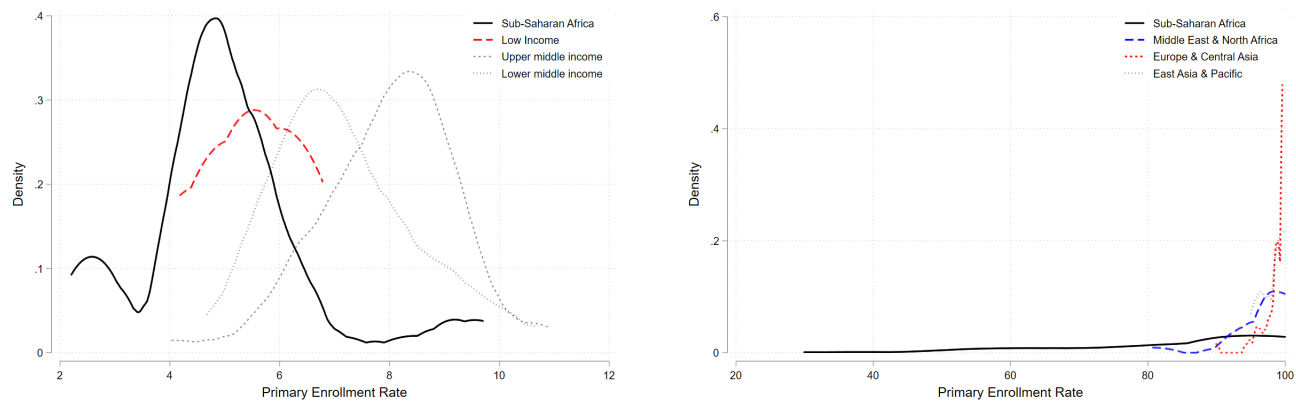
.1 Trends between ages

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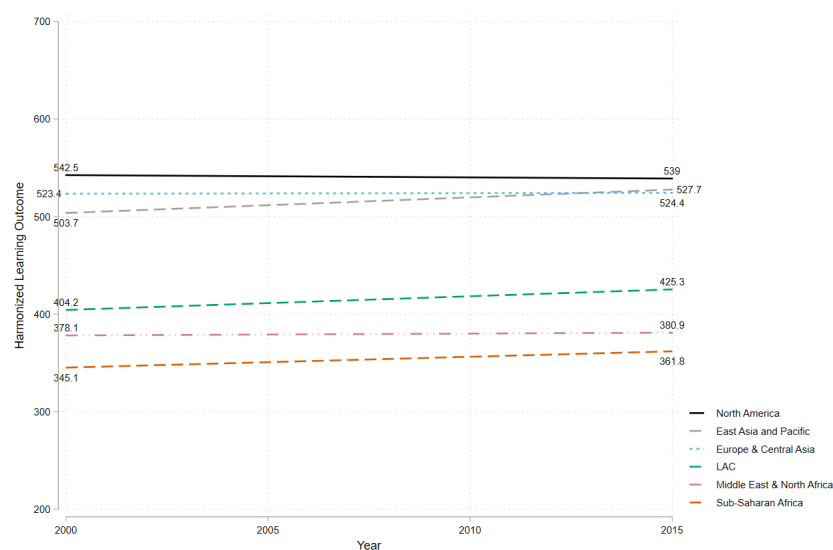
Source: Author tabulation using 2020 data from the World Bank. The graph shows the relationship between Expected and Learning Adjusted years of schooling for African countries vs. low and low middle income countries from outside Africa.

FIGURE 4: LABOR FORCE PARTICIPATION



Notes: Refer to Figure 1.

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