

Can MOOCs solve Africa's educational challenges

Aminata A. Garba,
Assistant Professor
Electrical and Computer Engineering
aminata@ece.cmu.edu

Education Challenges in Africa

■ Quantity

- ◆ Low % of the youth access to education
 - Around 6% for higher education
 - Growing youth population (>1 B by 2050, highest worldwide)
- ◆ Cost of education vs GDP, Culture

■ Quality

- ◆ Shortage of qualified teachers
- ◆ Limited resources (ICT devices & access, energy, funding)
 - Limited access to new (education) technologies
 - Limited Research, Limited number of teachers

Education Challenges in Africa

- Economic and social impact (unequal chances to access to education, small middle class)
 - ◆ Private higher education: fast growing education sector

**Literacy rate by age group between 2010 and 2015**

UNIT OF MEASURE [Percentage], SEX [Total], AGE [15 and over]



Eastern Asia: 96.37%

Developed regions: 99.17%

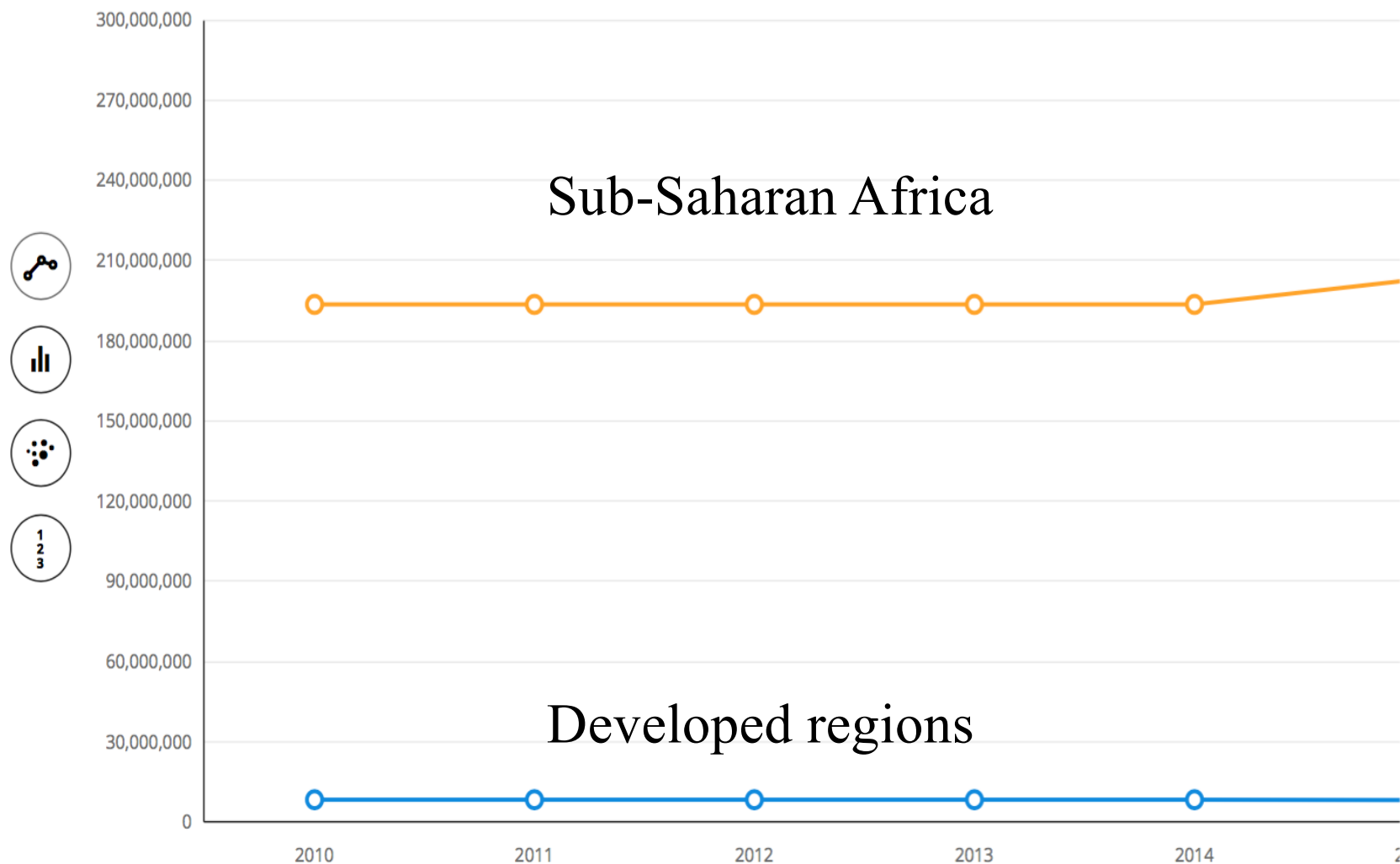
Sub-Saharan Africa: 64.44%

Latin America and Caribbean: 93.23 %

■ Eastern Asia (SDG_EAS) ■ Sub-Saharan Africa (SDG_SSA) ■ Developed regions (SDG_DEVELOPED_REG)

Illiterate population by age group between 2010 and 2015

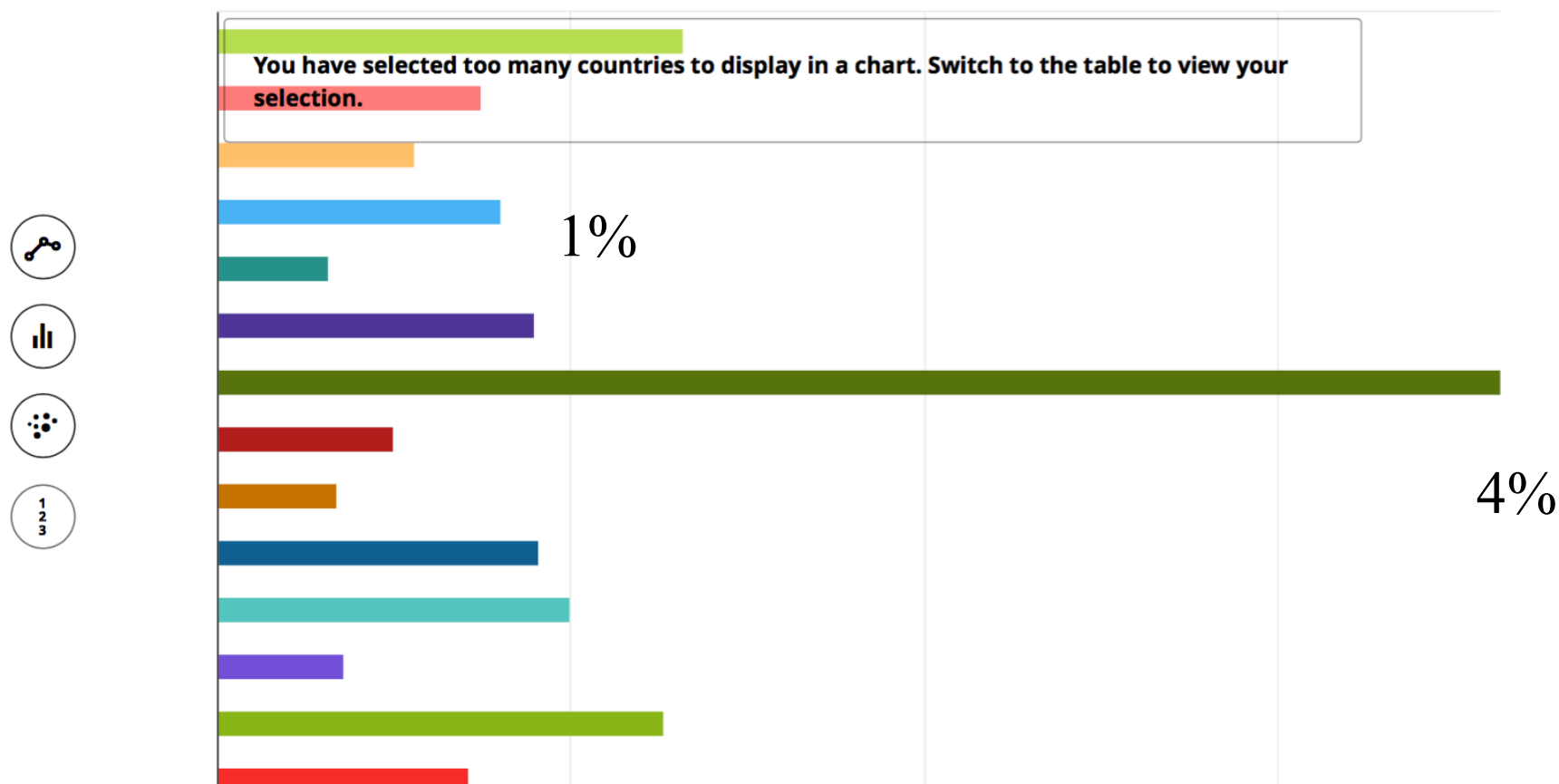
UNIT OF MEASURE [Number of persons], SEX [Total], AGE [15 and over]





Expenditure on education as % of GDP (from government sources) between 2009 and 2014

EDUCATION CATEGORY [Total], LEVEL OF EDUCATION [Tertiary education]

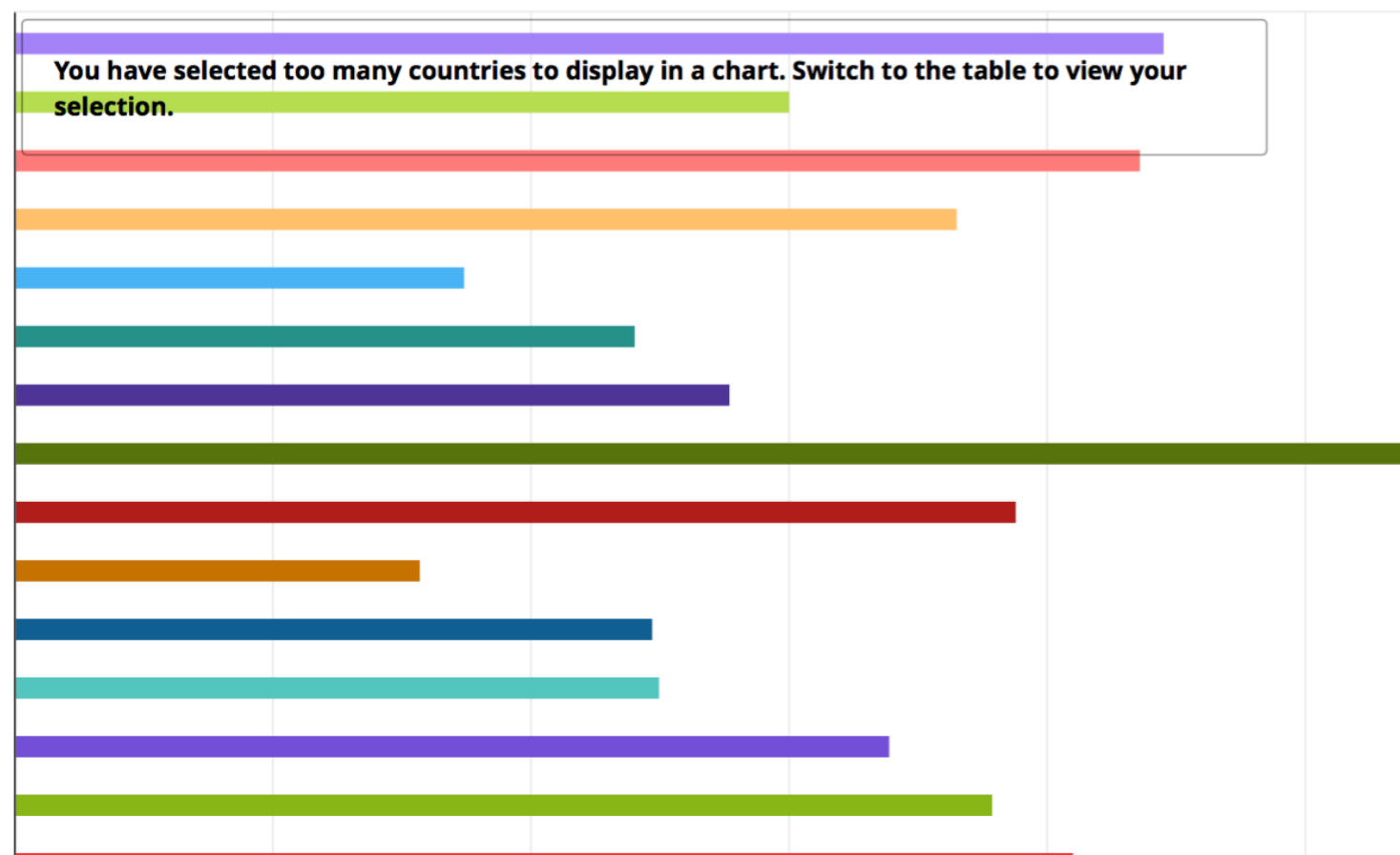


http://uis.unesco.org/africa-indicator/edu_africa-fin-total-gdp_total#slideoutsearch

1/3

Expenditure on education as % of total government expenditure (all sectors) between 2009 and 2014

EDUCATION CATEGORY [Total], LEVEL OF EDUCATION [Total]



http://uis.unesco.org/africa-indicator/edu_africa-fin-total-edu_exp_r_gov_exp

MOOCS

■ Massive open online course

- ◆ Online, distance education
- ◆ High participation
- ◆ Open access usually using Internet
- ◆ Introduced in 2006 but grew in 2012

■ Course Material

- ◆ Taped lectures, readings, assignments
- ◆ Interactive forums to support community interactions among students and instructors

Approach

- Models Open License vs Close license
 - ◆ Open License vs Close license (content, structure)
 - ◆ Free vs paid
 - Certificates
- Popular Mooc Platforms
 - ◆ Coursera
 - ◆ Udacity
 - ◆ Tedx

Moocs in Education in Africa

■ Target Higher education

- ◆ But already low enrollment in higher education (6%)

■ Association with degree

- ◆ No often structured curriculum
- ◆ Online degrees (often from western univ), courses on MOOCs platform are costly
- ◆ May require good internet access
 - Most schools in Africa do not have broadband access
 - Teachers may not be ICT-skilled
- ◆ As implemented, Moocs will likely have marginal impact on the number of educated youth in Africa

Moocs in Education in Africa

■ Can Mooc Increase the quality of education?

- ◆ Many courses targeting fundamentals and applied
- ◆ Target also business, offer course certificate
- ◆ Can provide material for teachers in Africa as well as students
- ◆ Courses are kept up to date
- ◆ Can help improve quality of higher education in Africa
 - Curriculum sharing with other universities

Conclusion

- ◆ As implemented, Moocs will likely have marginal impact on the number of educated youth in Africa
- ◆ Can help improve quality of higher education in Africa
- ◆ Some Requirements:
 - Investment in the internet accessibility for schools
 - Teachers training
 - Extend platforms to high schools
 - PPP
 - New models most appropriate for African Context are needed
 - Offline material
 - Hubs and instructors on site
 - Acceptable by businesses

Thank You!

aminata@ece.cmu.edu