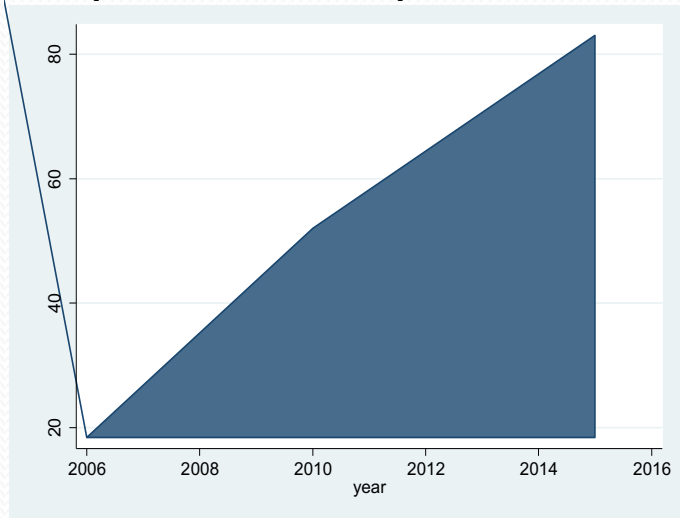
ICT and Economic Growth in Sub-Saharan Africa Countries

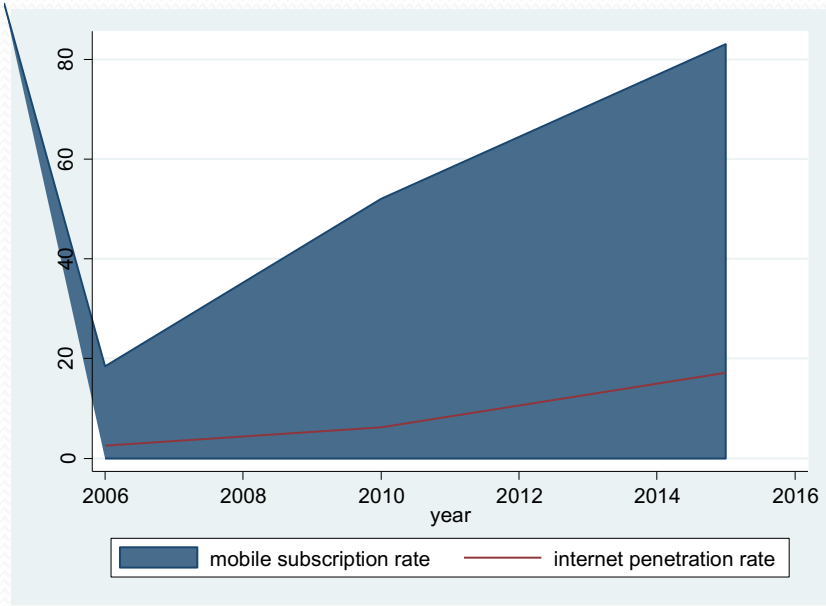
Haftu G. Giday

CPRSouth 2017

Introduction

- Mobile phones and the Internet (ICT) has the potential to lead “leapfrogging” development in SSA.
- Penetration- 83% mobile phone, internet 17% in SSA (ITU, 2017).





Justification

- It is imperative to ask whether the technology has a favorable impact on growth in SSA.
- Understanding its impact would help governments and other stakeholders design and implement appropriate interventions which could maximize the benefits from ICT.

Methodology

- Literature Review
- Personal experience/observations
- Source for panel data:
  - World Bank's World Development Indicators and International Telecommunication Union statistics for 40 SSA countries over the 2006-2015 period.

Econometric model

Applied Datta and Agarwal's (2004) approach. The model is two step System Generalised Method of Moment (GMM) specified as follows:

$$lngdppc_{it} = a + \beta_1 lngdppc_{i,t-1} + \beta_2 lngovcon_{it} + \beta_3 lnmercha_{it} + \beta_4 lngcf_{it} + \beta_5 internet_{it} + \beta_6 mob_{it} + \beta_7 inf_{it} + \beta_8 popg_{it} + yr_i + v_i + \varepsilon_{it}$$

Software: Stata 12

Results

- Dep. Var. GDP per capita income

Variables	Coeff.	St. error	Z	p>Z
lngdppc L.1*	0.9060462	0.05846	15.5	0.000
internet	0.0033255	0.00298	1.12	0.264
mob***	0.0012131	0.00070	1.74	0.082
lngovcon*	-0.0745640	0.02771	2.69	0.007
lnmercha	0.0346075	0.06165	0.56	0.575
lngcf**	0.0491633	0.02328	2.11	0.035
inf*	-0.0000136	4.1E-06	3.31	0.001
popg	-0.0306409	0.01908	1.61	0.108

Diagnostic tests

- Autocorrelation
  - AB(1)=z = -1.1 Pr > z = 0.268;
  - AB(2)=z = 0.95 Pr > z = 0.340;
- Instrument exogeneity and exculsion
  - Difference-in-Hansen tests :

    Hansen(GMM)=chi2(18) = 19.58 Pr > chi2 = 0.357, Difference(GMM)=chi2(3) = 2.68 Pr > chi2 = 0.444, Hansen(IV)=chi2(7) = 10.90 Pr > chi2 = 0.143,

    Difference(IV)=chi2(14) = 11.36 Pr > chi2 = 0.657;

- Joint (in)significance
  - Wald chi2(18) = 3.73e+07 Pr > chi2 = 0.000;
  - Sargan=chi2(21) = 8.39 Pr > chi2 = 0.993;
  - Hansen=chi2(21) = 22.26 Pr > chi2 = 0.385;

Findings

- A 10% increase in mobile phone subscribers raises GDP per capita income by 1.2%.
- Internet penetration is statistically insignificant.
- This could be due to the low Internet penetration rate, insufficient local content, ICT skills limitations, and relatively expensive access price.

Recommendations

- To achieve critical mass of users,
  - Improve affordability and reliability
  - Build telecom infrastructure
  - Increase local content
  - Design services to meet local demand
- Further research is needed
  - At sub national level and different groups
  - Delivery of public services

kyei: zu: tin ba de

አመሰግናለው

ameseginalew

Thank you!