

Estimating Internet Users: An evidence-based alternative in the absence of survey data

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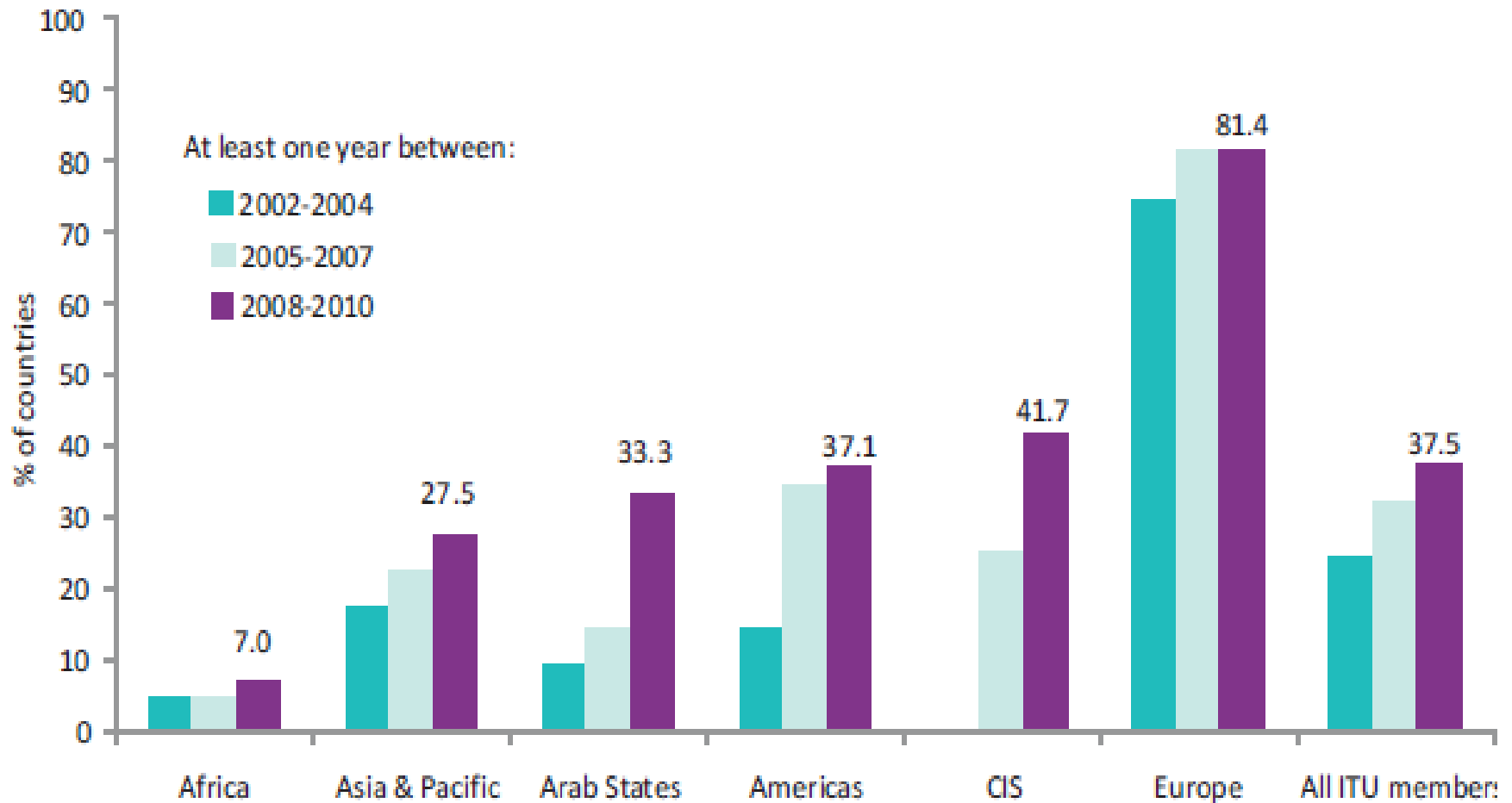


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'Proportion of individuals using the Internet'

- Base indicator in composite indices such as:
 - NRI (Network Readiness Index)
 - KEI (Knowledge Economy Index)
 - IDI (ICT Development Index)
- Best measurement method recommended by ITU:
 - demand-side survey on proportion of individuals using the Internet (from any location) in the last 12 months (HH7)

62.5% of countries have not conducted a demand-side survey on ICT use



Source: *Measuring the Information Society 2011*, ITU

Current method of measuring Internet users in the absence of survey data

- **Internet Users = Multiplier x Internet Subscriptions**

Where

- The multiplier = a number used to reflect that each subscription maybe used by more than one individual (e.g. school, work, kiosks)
- Internet subscriptions = internet subscriptions of all types (speeds, technologies etc.)
 - Wired, wireless etc.

Building on foundations of sand...

- Multipliers chosen at discretion of Country administrations
 - Perverse incentive to use higher multiplier to show high Internet penetration in country
- Difficulties in counting Internet subscriptions include...
 - Over-counting (counting all “Internet-capable” SIMs, irrespective of use)
 - Under-counting (being able to only count SIMs that have subscribed to a data package; SIMs with only voice packages may use Internet, but operators cannot count; impossible for pre-paid)
 - General difficulty with multiple ownership (one user with fixed and many SIM connections) leading to questionable multipliers

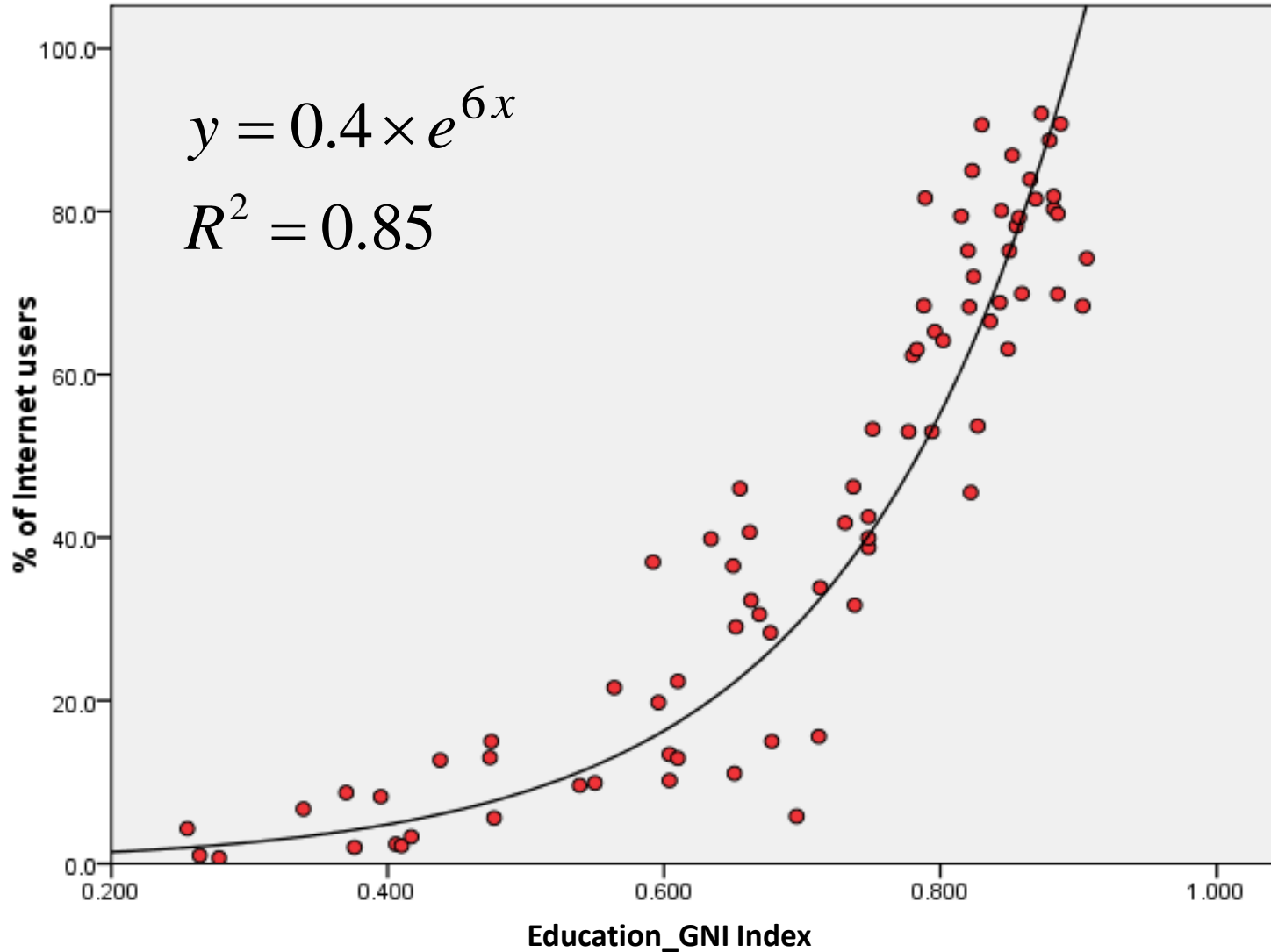
Main two drivers of Internet penetration are income and education

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New Methodology

- % of Internet users increase with Education and Income components of Human Development Index (HDI) of a country
 - Education component - mean of years of schooling for adults and expected years of schooling for children
 - Income component- Logarithm of GNI per capita (PPP\$).
 - Health component of HDI is not used, due to lack of evidence that internet penetration is correlated with life expectancy
- Studied the correlation between Internet penetration rate of countries which conducted demand side surveys and the education and income components of HDI 2010
 - Data on countries which have conducted demand-side surveys was obtained from ITU and RIA
 - Sub index Education_GNI Index, consisting of education and income components of the HDI index was calculated using 'DIY HDI: Build Your Own Index' on UNDP website. Both Education and Income were given equal weight

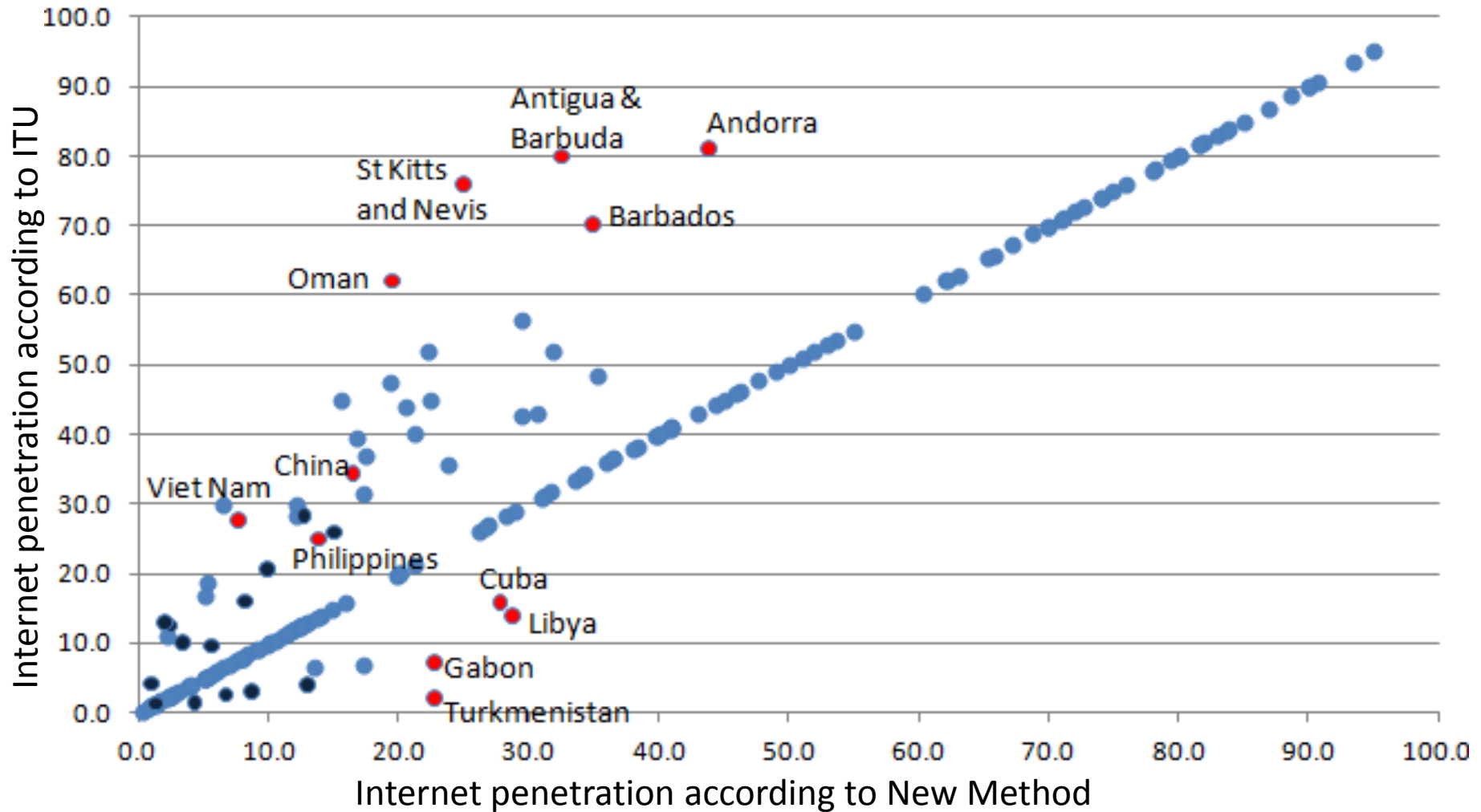
Strong correlation between Education_GNI Index and Internet penetration



Using Education_GNI Index to estimate Internet penetration in the absence of survey data

- Derive model using income and education components of Human Development Index (HDI) vs. Internet penetration rate for countries which have conducted a survey (annually after HDI report has been released)
- Use this model to impute Internet penetration rate for countries which have never conducted a survey
- If Internet penetration rate provided by country administrator is within +/- 7 percentage point band around calculated estimate -> use country reported figure
- Else use imputed figure

Less than 30% countries show different Internet penetration rates



● Survey data from RIA but not same as ITU Internet penetration rate

Recommendations

- Use survey data from all available sources
 - Both from surveys conducted by country and representative surveys conducted by regional organizations such as Research ICT Africa (RIA)
 - If a country has conducted an ICT survey in a previous year, the Internet penetration for the current year should be imputed based on previous survey data
- If survey data is unavailable use the new method to estimate % of individuals using the Internet