

Towards an understanding of **ICT access and use in Africa**

Use of New Information and Communication Technology
(ICT) to Consolidate Peace-building in Africa

Hosted the Transitional Demobilization and Reintegration Program (World Bank), the Safety and Violence Initiative (University of Cape Town) and the Institute for Security Studies

Dr. Alison Gillwald

Executive Director: Research ICT Africa

Adjunct Professor - University of Cape Town,
GSB, Management of Infrastructure Reform and Regulation Programme



Basic Content

Ubiquity - critical mass - network effects

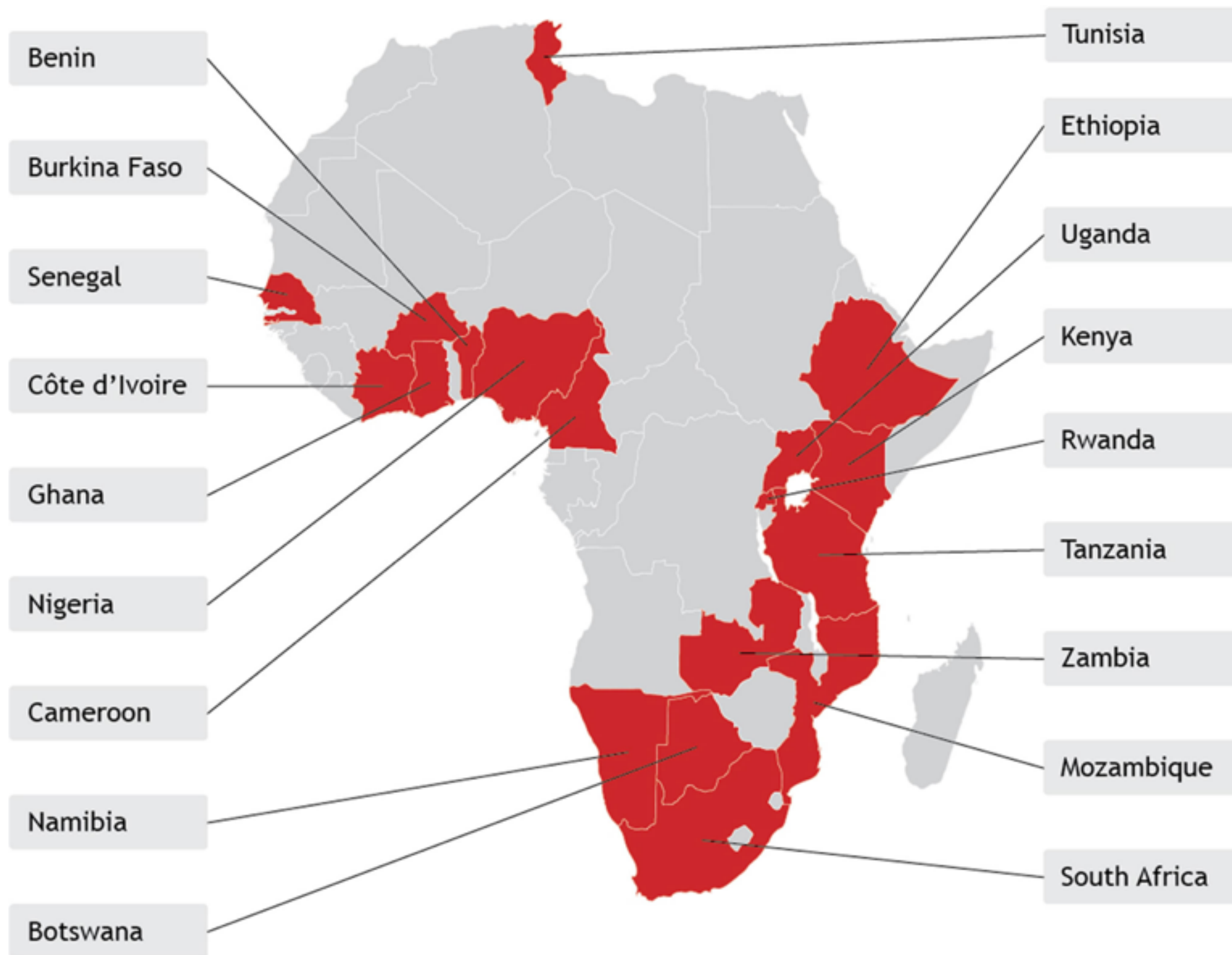
Access

Use

Applications

Platforms

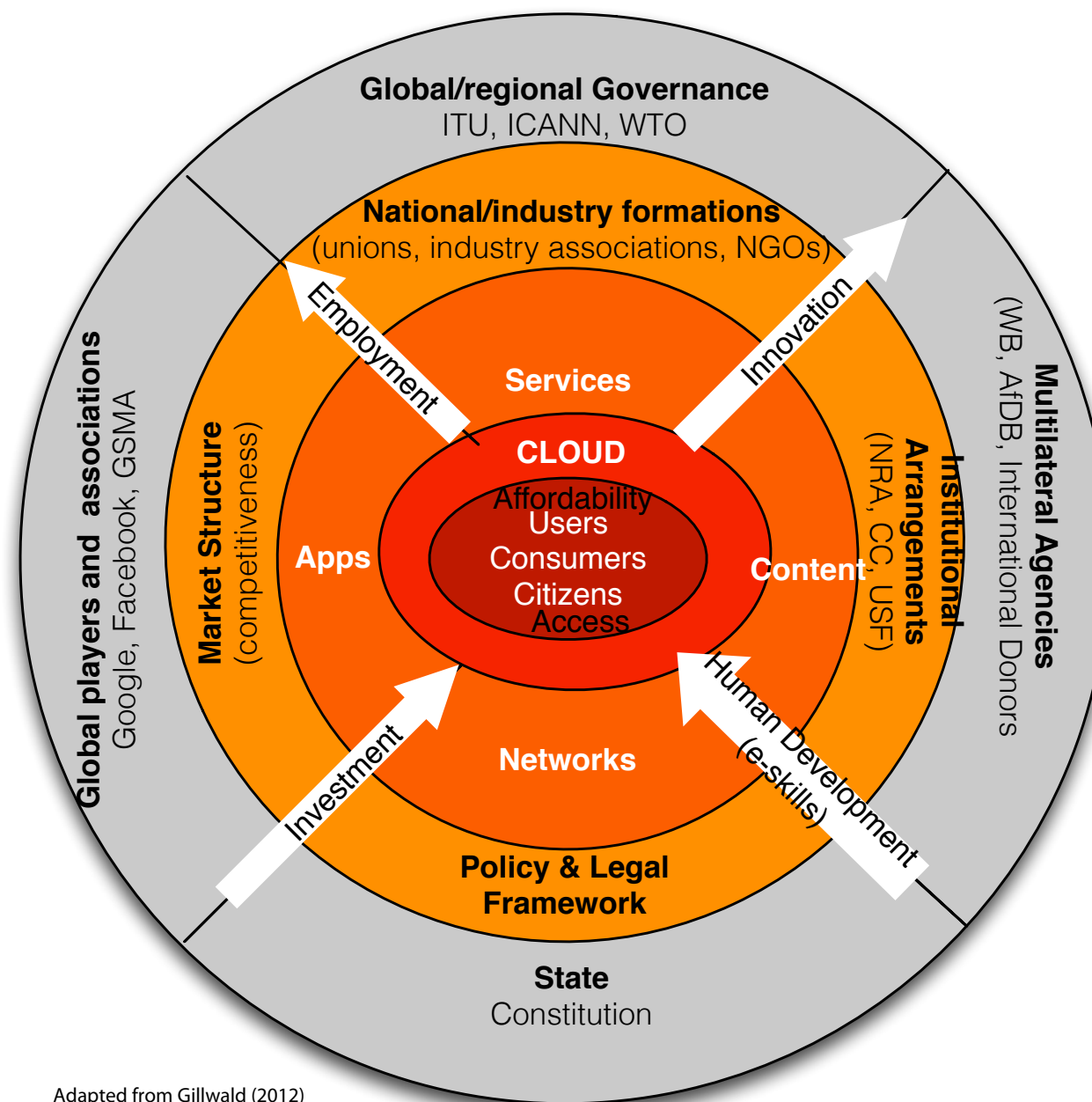




Network a response to the research vacuum on the continent in relation to ICT policy and regulation and dearth of capacity to respond to redress it.

ICT Ecosystem

Integrated perspective of markets, networks, services, services, applications and content and determining governance, legal and regulatory frameworks



Adapted from Gillwald (2012)



Table 1 – General sample statistics of randomly selected individual

	Average individual income US \$			Average income US\$ ppp			Average age	% with a bank account		
	All	♂	♀	All	♂	♀		All	♂	♀
Botswana	270	340	222	460	579	378	34	48.4	52.4	45.6
Cameroon	52% 72	94	52	145	189	104	33	10.9	10.8	10.9
Ethiopia	45% 27	39	12	69	101	30	34	3.7	4.3	3.0
Ghana	55% 87	117	63	183	244	134	34	29.4	35.5	24.5
Kenya	62% 85	119	64	154	214	116	28	44.5	57.6	36.4
Namibia	57% 194	279	130	270	387	181	40	56.3	51.1	60.3
Nigeria	47% 102	151	47	171	252	78	34	30.5	39.8	20.0
Rwanda	50% 28	36	21	57	72	42	30	16.3	17.4	15.2
South Africa	54% 402	617	221	595	914	328	36	58.9	62.7	55.7
Tanzania	54% 35	45	26	89	115	68	34	6.2	7.4	5.1
Uganda	44% 52	59	42	126	144	102	31	15.2	18.7	10.7



share of main activity engaged in...

■ student / pupil
■ unpaid work / housewife
■ retired
■ unemployed
■ disabled and unable to work
■ employed
■ self-employed

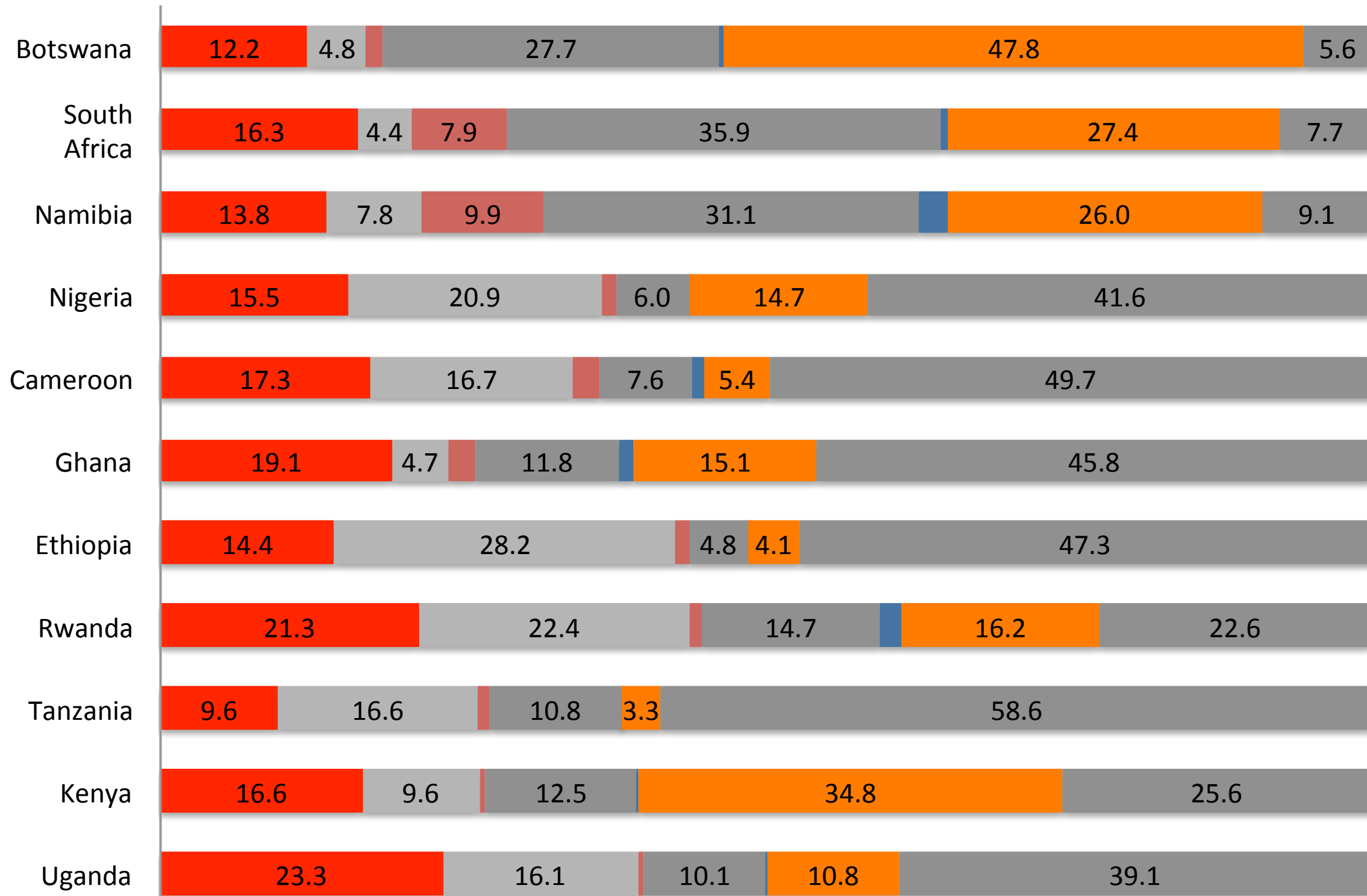


Table 2 – Gender disaggregated educational sample statistics

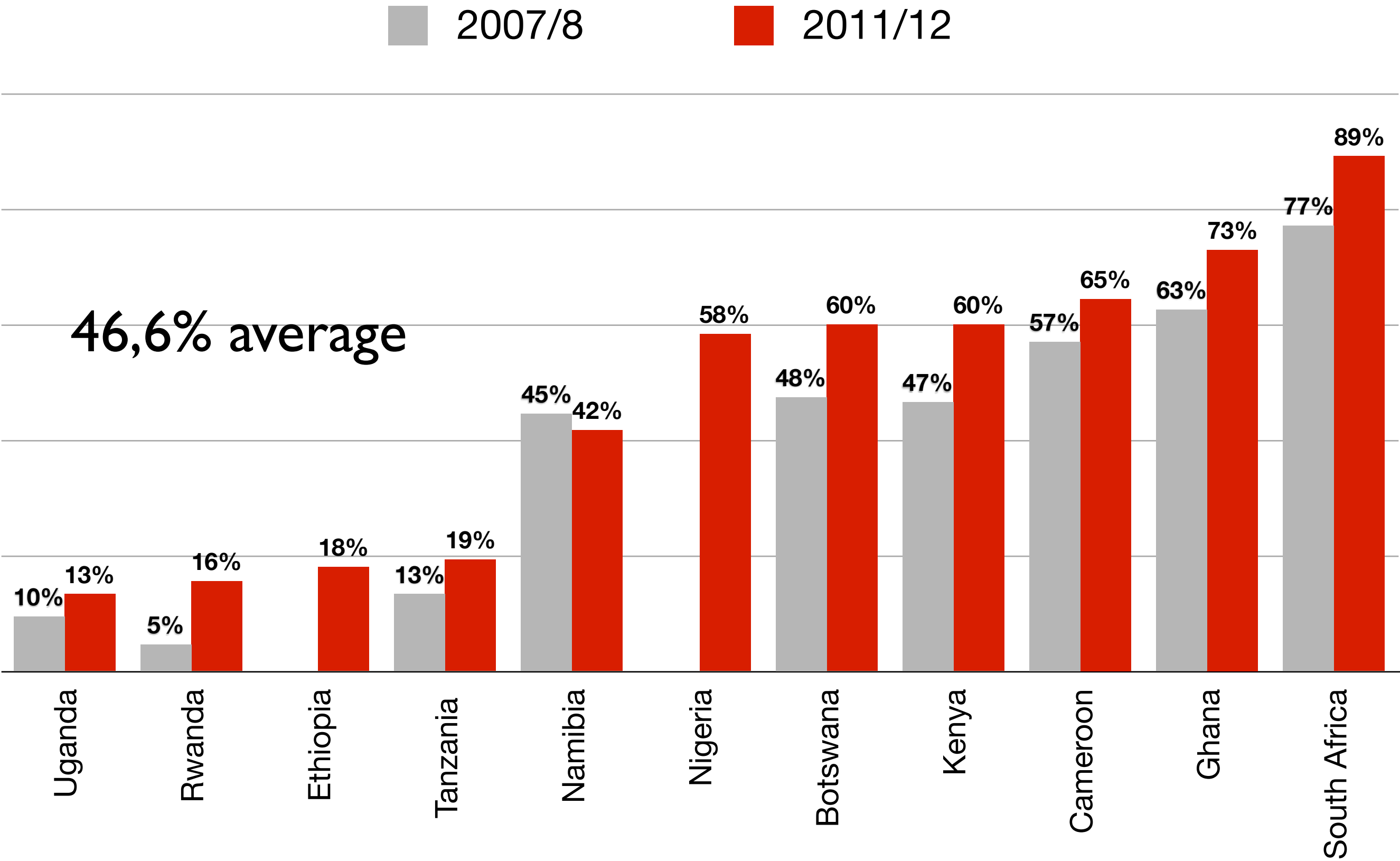
	Highest Education: Tertiary			Highest Education: Secondary			Highest Education: Primary		
	All	♂	♀	All	♂	♀	All	♂	♀
Botswana	20.5%	21.9%	19.4%	53.9%	53.9%	54.0%	18.7%	19.3%	18.2%
Cameroon	7.4%	8.6%	6.2%	22.8%	19.2%	26.2%	30.6%	30.7%	30.6%
Ethiopia	2.1%	2.4%	1.8%	1.8%	1.3%	2.4%	13.1%	16.4%	8.9%
Ghana	10.5%	15.8%	6.2%	36.6%	38.9%	34.8%	27.3%	25.3%	28.9%
Kenya	26.2%	32.7%	22.3%	41.4%	41.1%	41.7%	27.4%	22.8%	30.2%
Namibia	7.1%	8.4%	6.1%	27.8%	24.3%	30.4%	45.2%	42.4%	47.4%
Nigeria	14.8%	19.5%	9.6%	37.8%	40.3%	34.9%	18.7%	18.1%	19.3%
Rwanda	1.2%	1.7%	0.7%	15.3%	16.8%	13.7%	58.4%	59.4%	57.4%
South Africa	13.3%	18.0%	9.1%	65.3%	65.8%	64.8%	17.0%	13.2%	20.2%
Tanzania	1.4%	1.5%	1.2%	11.1%	14.9%	7.8%	72.0%	73.3%	70.9%
Uganda	9.1%	11.2%	6.3%	29.9%	33.3%	25.6%	44.2%	44.6%	43.7%

Africa's Digital Divide

Household data analysis



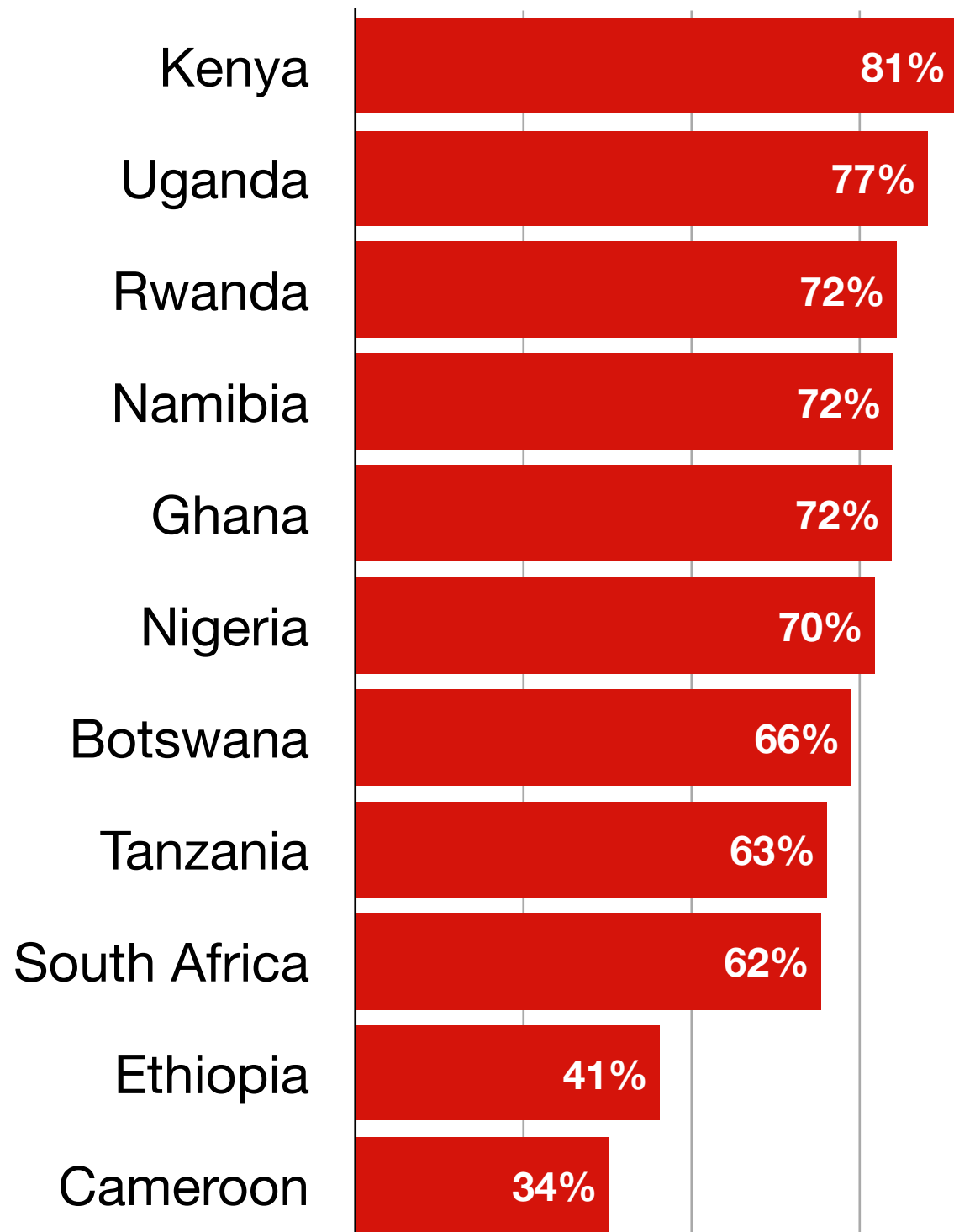
Percentage of households with electricity still very low in many African countries, some even saw a decline



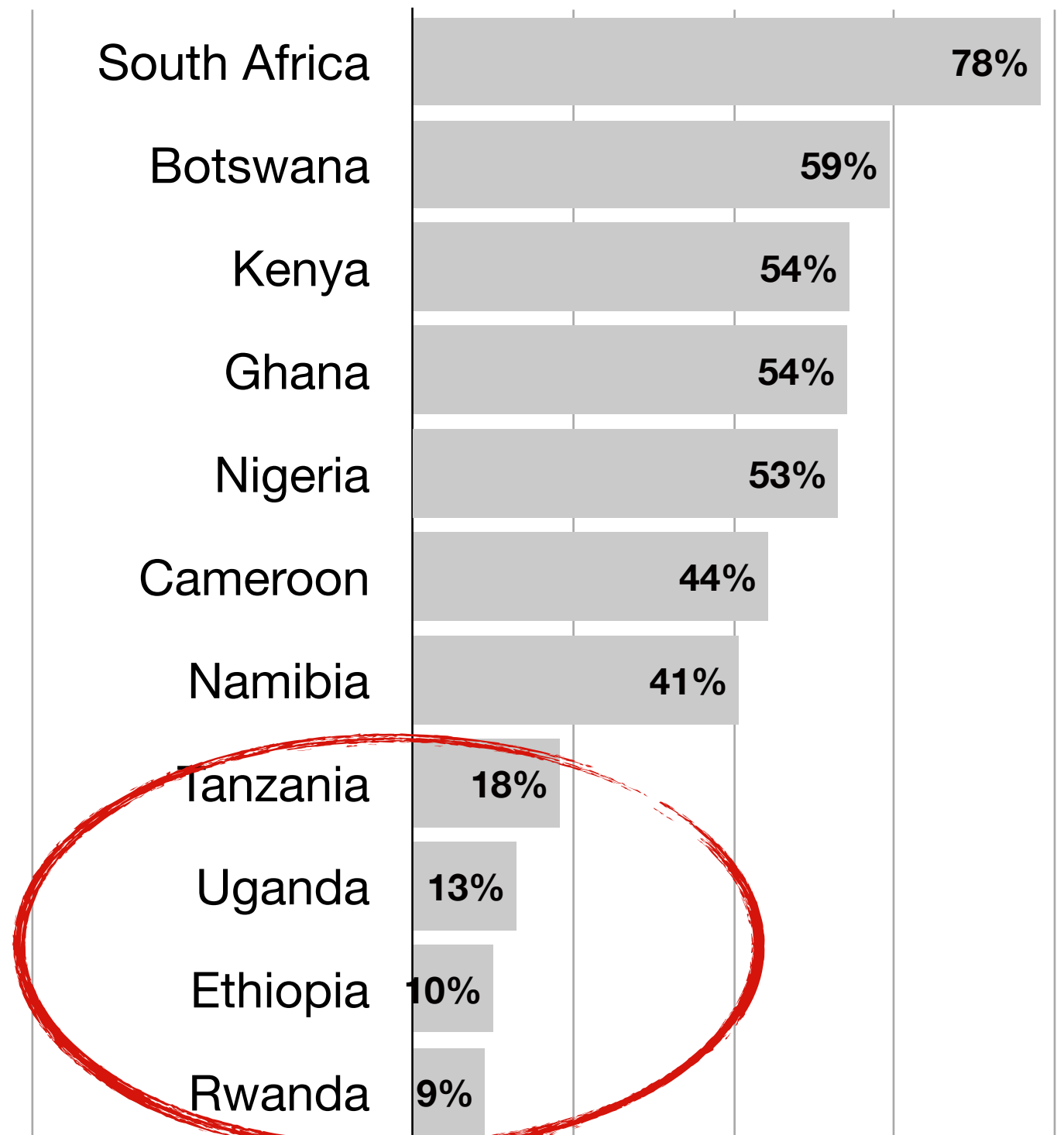
Radio still main source of information

TV luxury good in several countries

Households with Radio

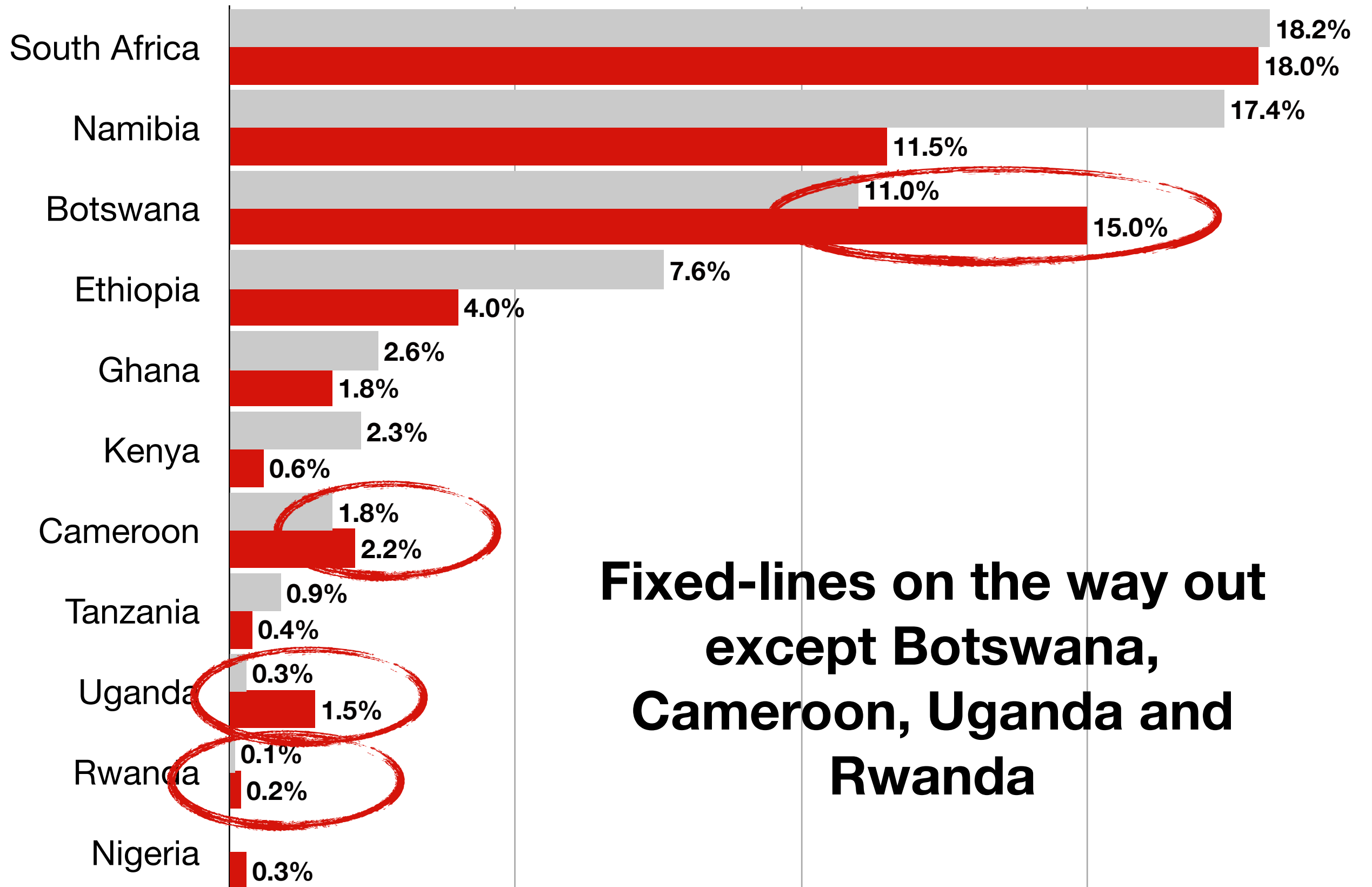


Households with TV



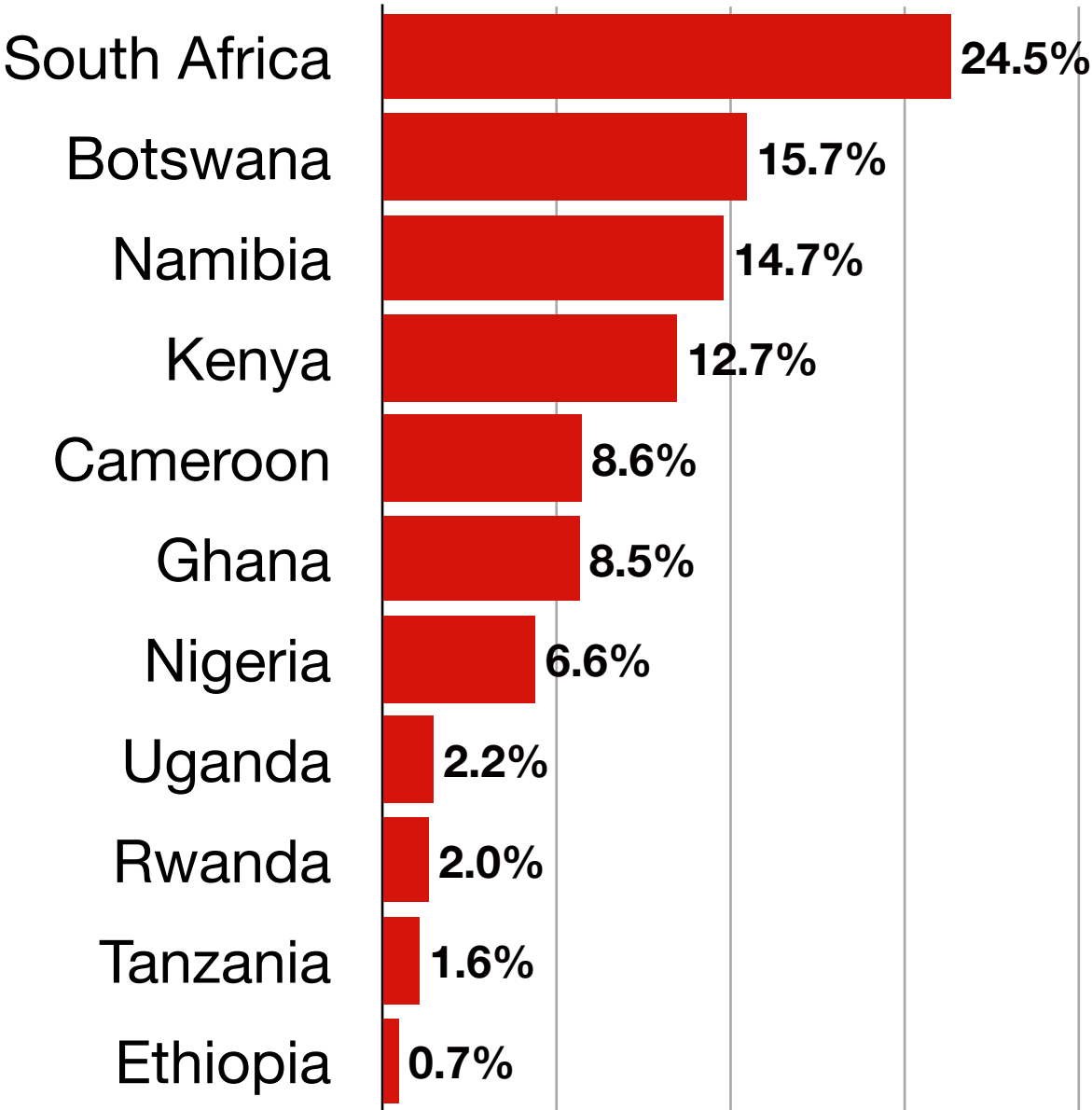
Share of households with fixed-lines

2007/8 2011/12

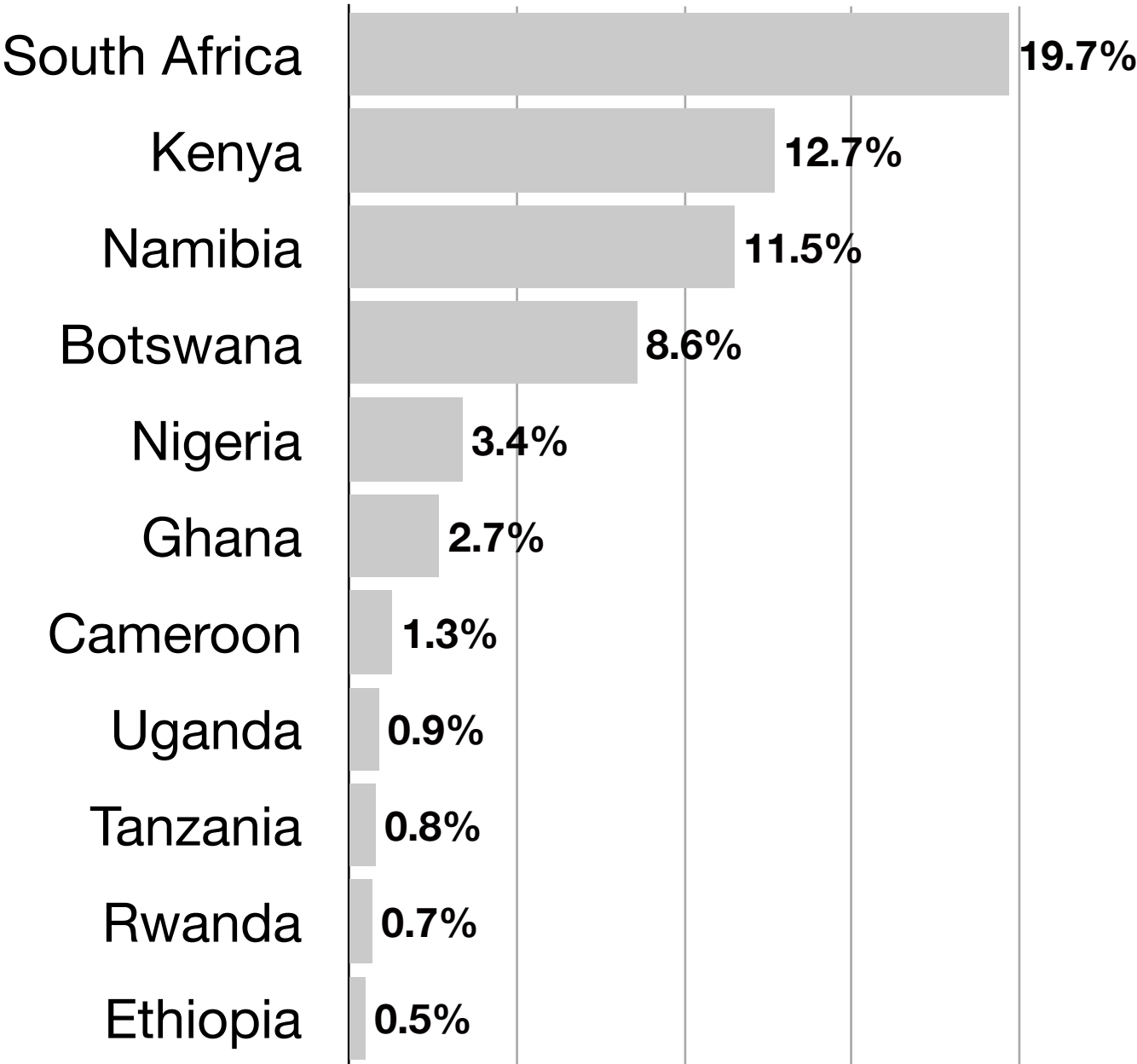


**Fixed-lines on the way out
except Botswana,
Cameroon, Uganda and
Rwanda**

Share of households with a working computer

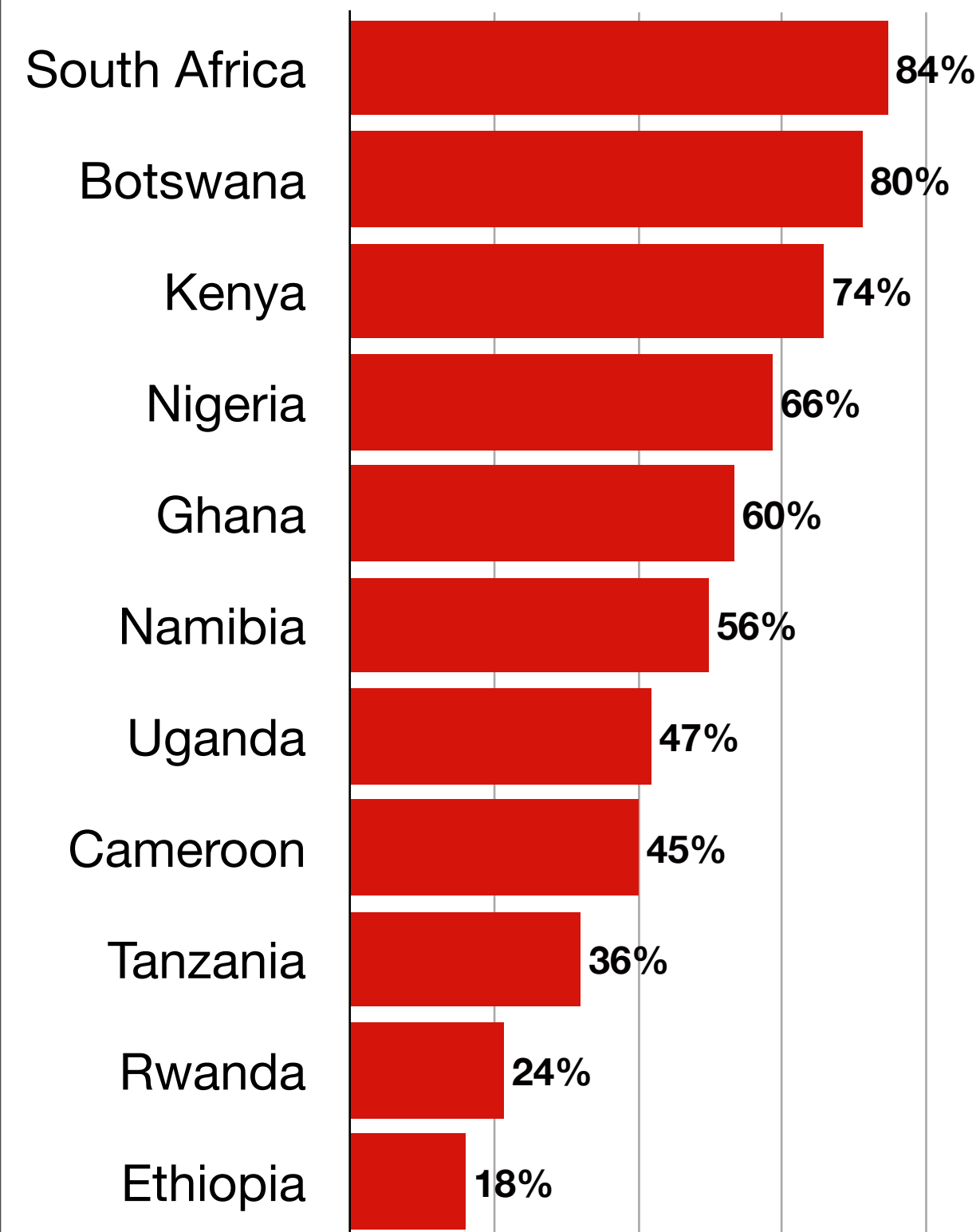


Share of households with a working Internet connection

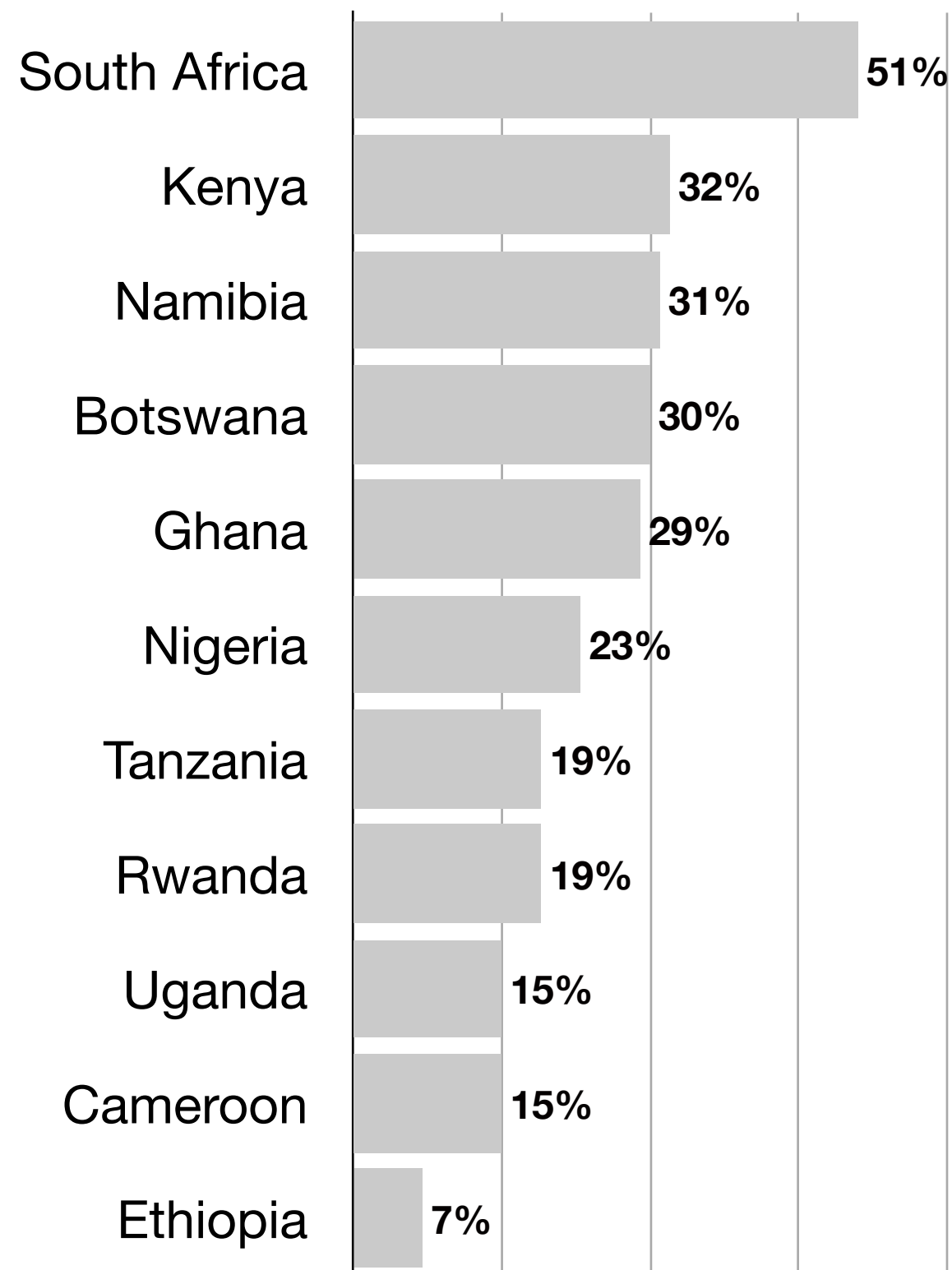


Less than a quarter of households have a computer and even fewer Internet access

15+ Owning a mobile



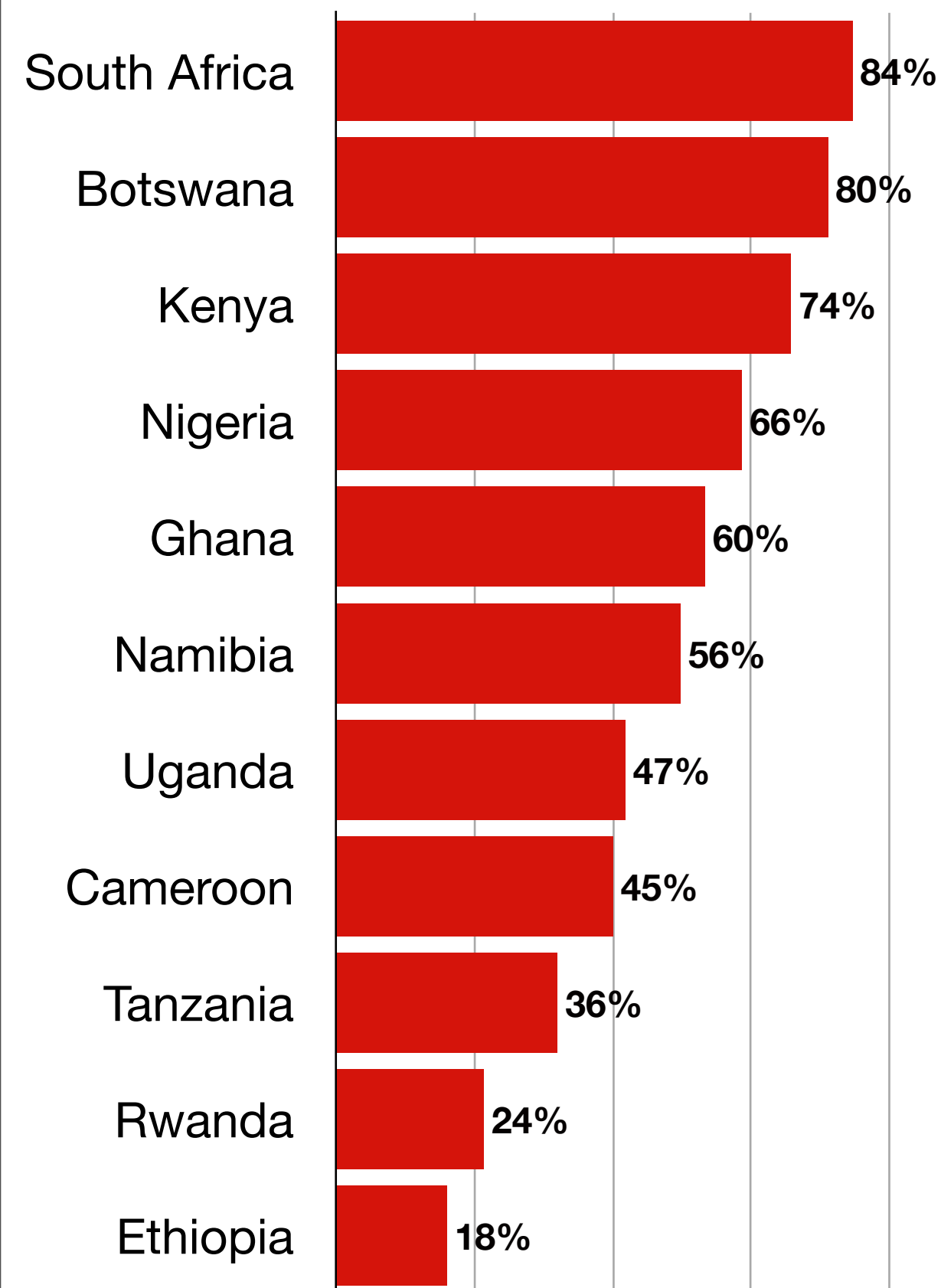
15+ Owning a mobile that is capable of browsing the Internet



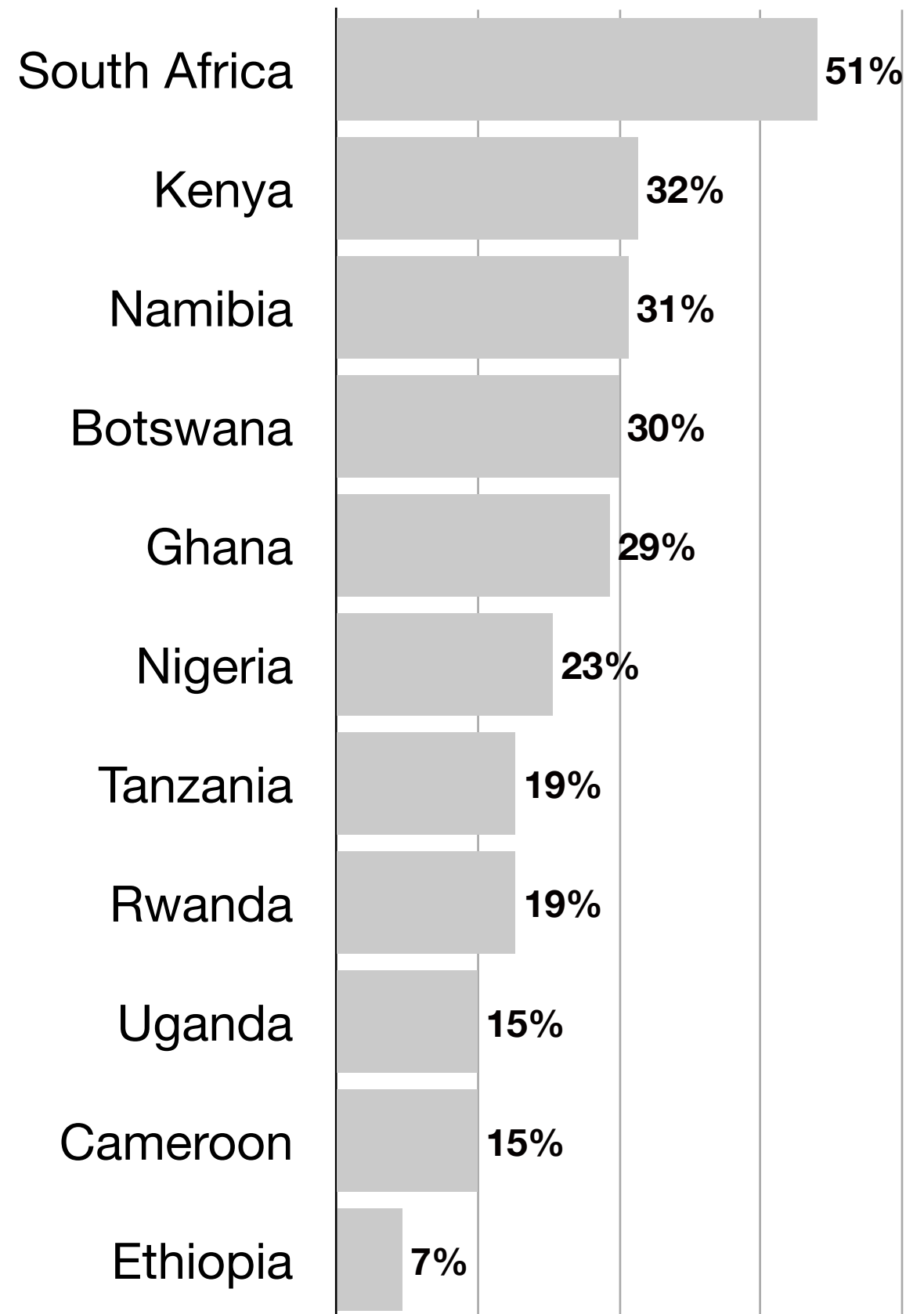


Individual Access and Usage

15+ Owning a mobile



Share of those with a mobile that own one that is capable of browsing the Internet



sending cash with someone preferred way of sending money

Means of sending and receiving money that the business uses

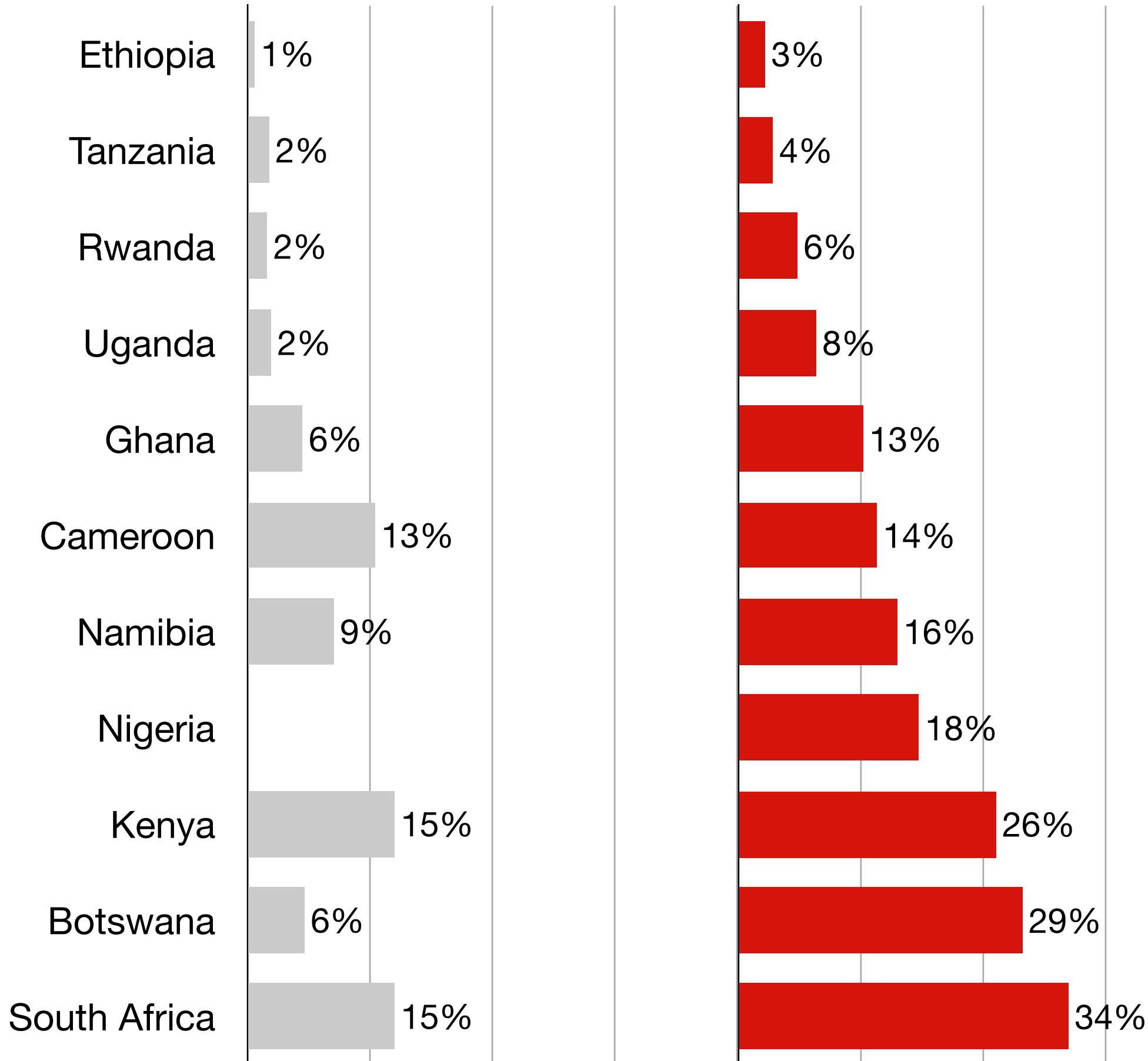
	Mobile Money	Post Office	Western Union etc	Banks	send cash with someone
Uganda	16%	1%	2%	17%	81%
Tanzania	14%	0%	0%	5%	93%
Rwanda	8%	0%	1%	10%	70%
Ethiopia	0%	0%	0%	5%	55%
Ghana	0%	1%	1%	12%	54%
Cameroon	0%	1%	26%	4%	75%
Nigeria	0%	0%	0%	11%	77%
Namibia	1%	25%	1%	41%	86%
Botswana	2%	16%	3%	27%	73%



Internet Access & Usage

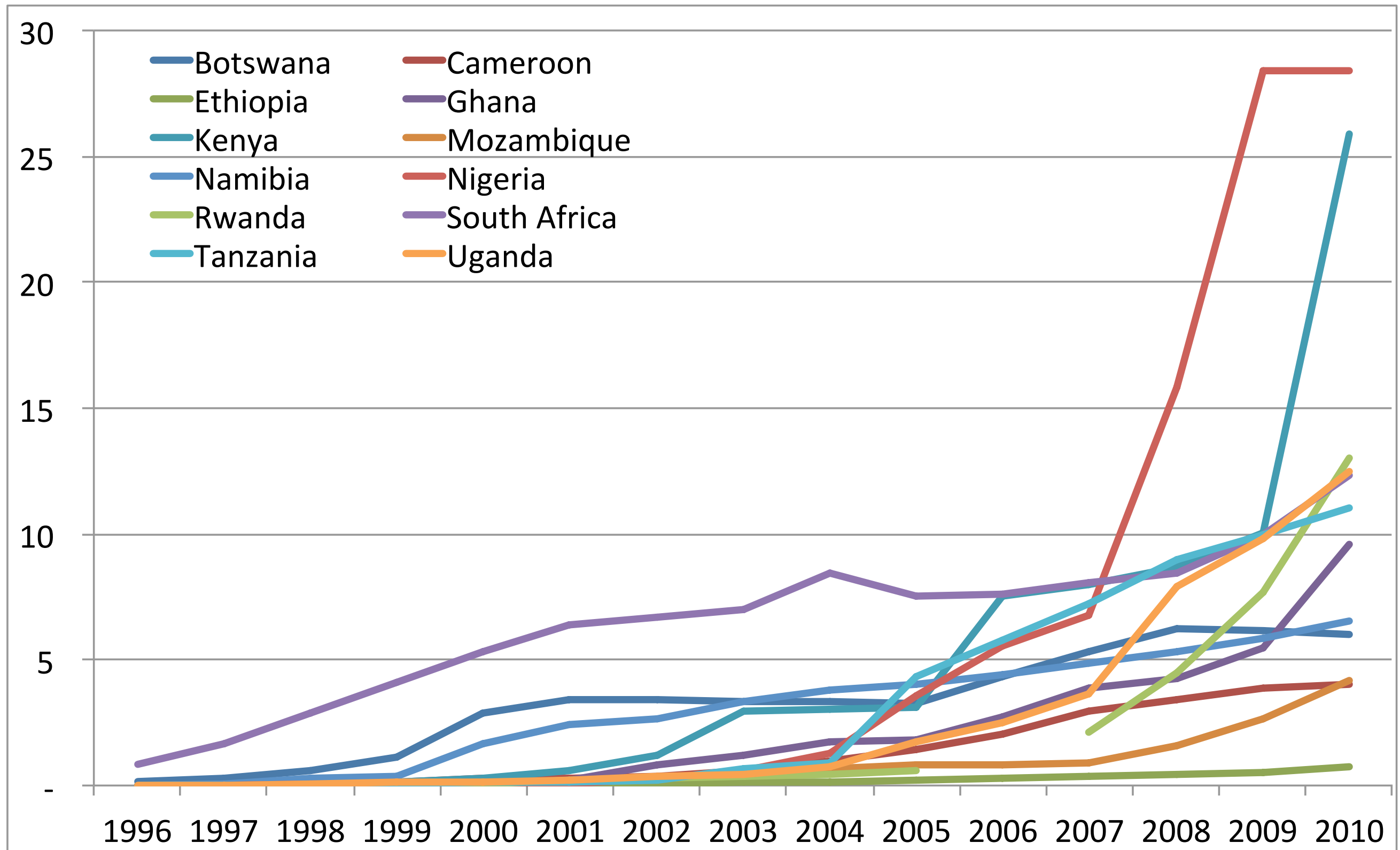
2007/8

2011/12

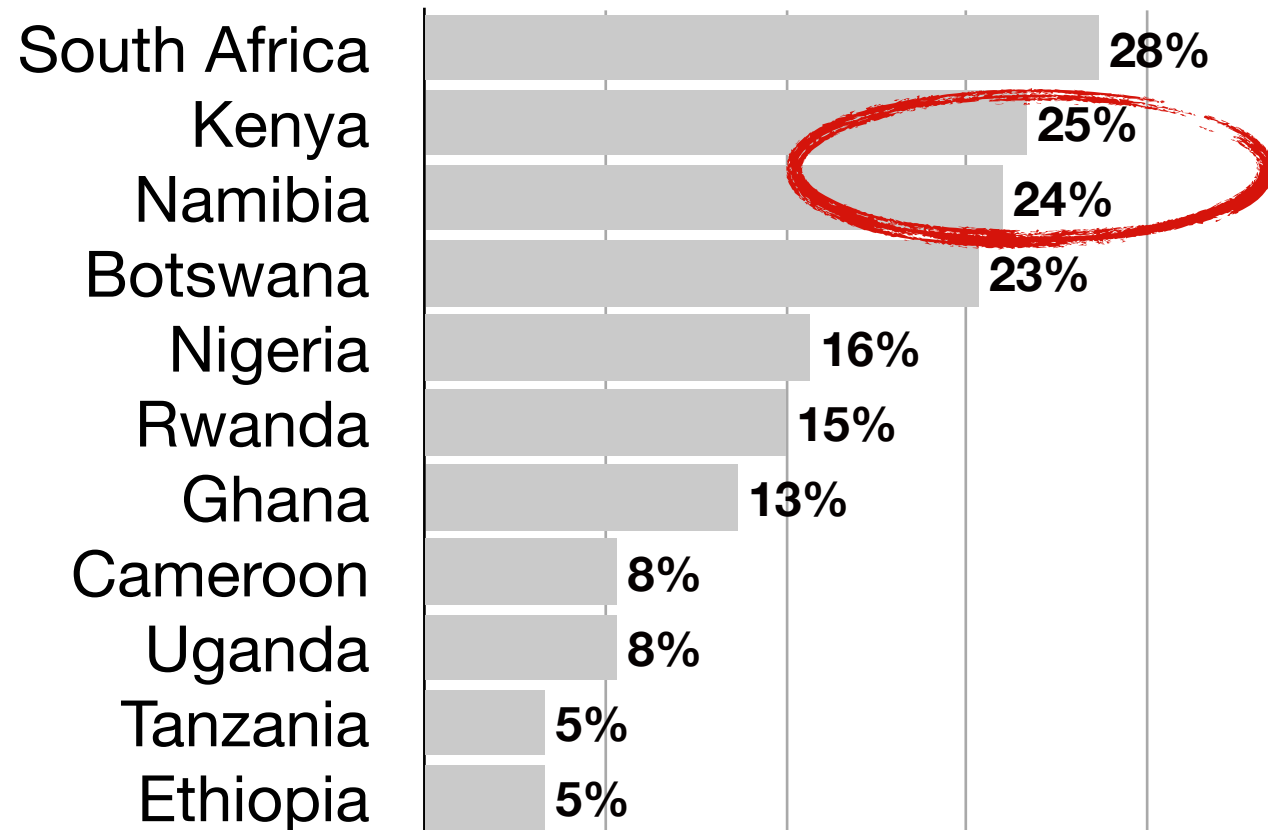


**Internet
use (15+)
more than
doubled
within 4
years**

ITU data: Percentage of individuals using the Internet

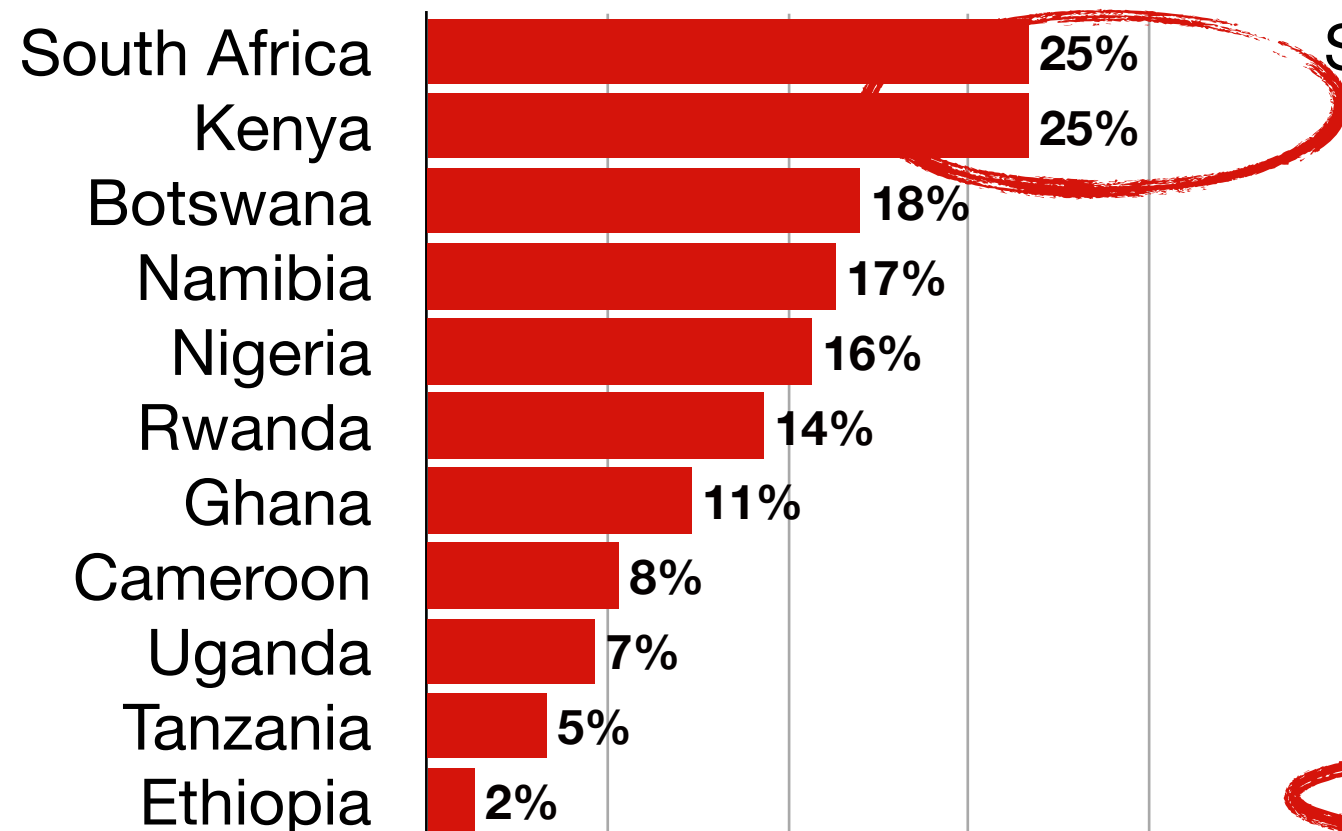


Using mobile to browse the Internet

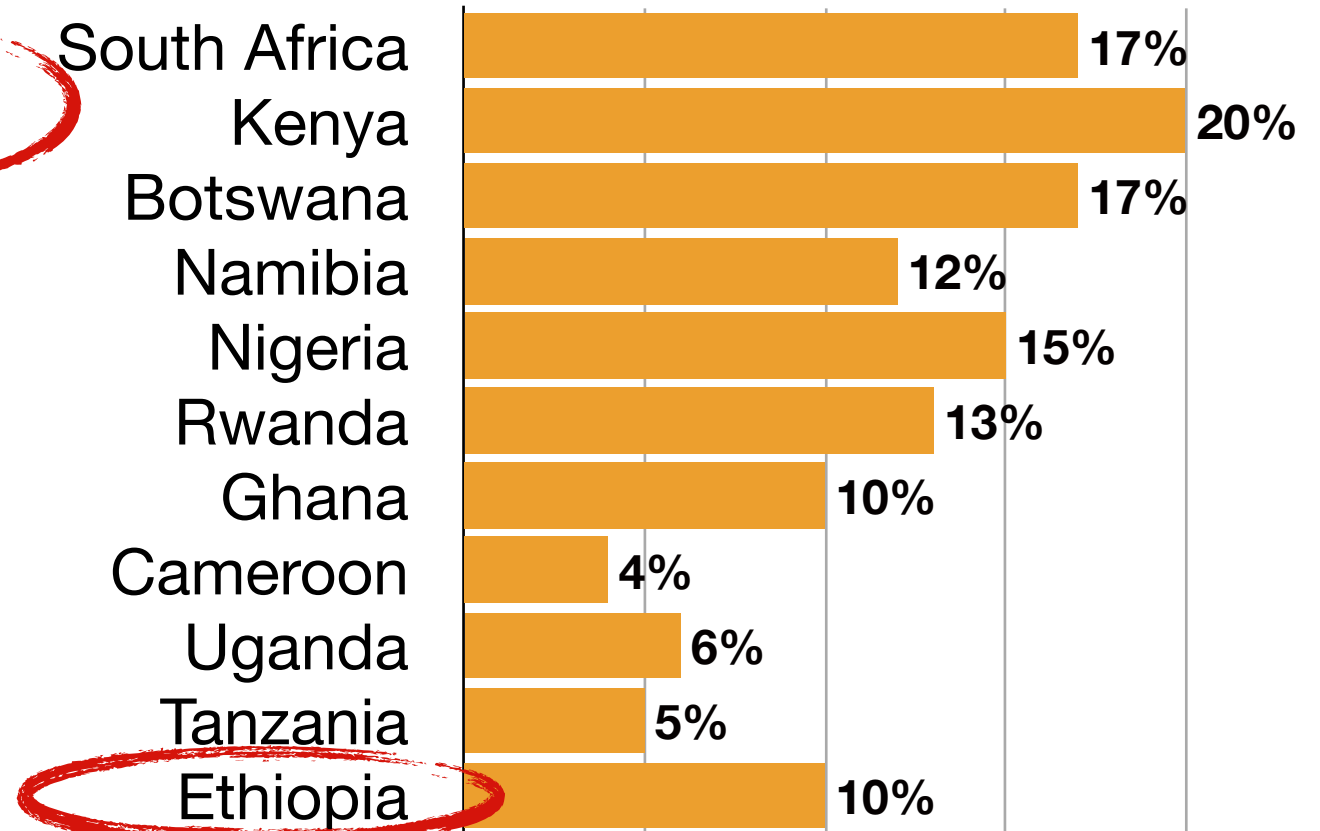


Internet use among mobile phone owners: Social networking more popular than email in some countries

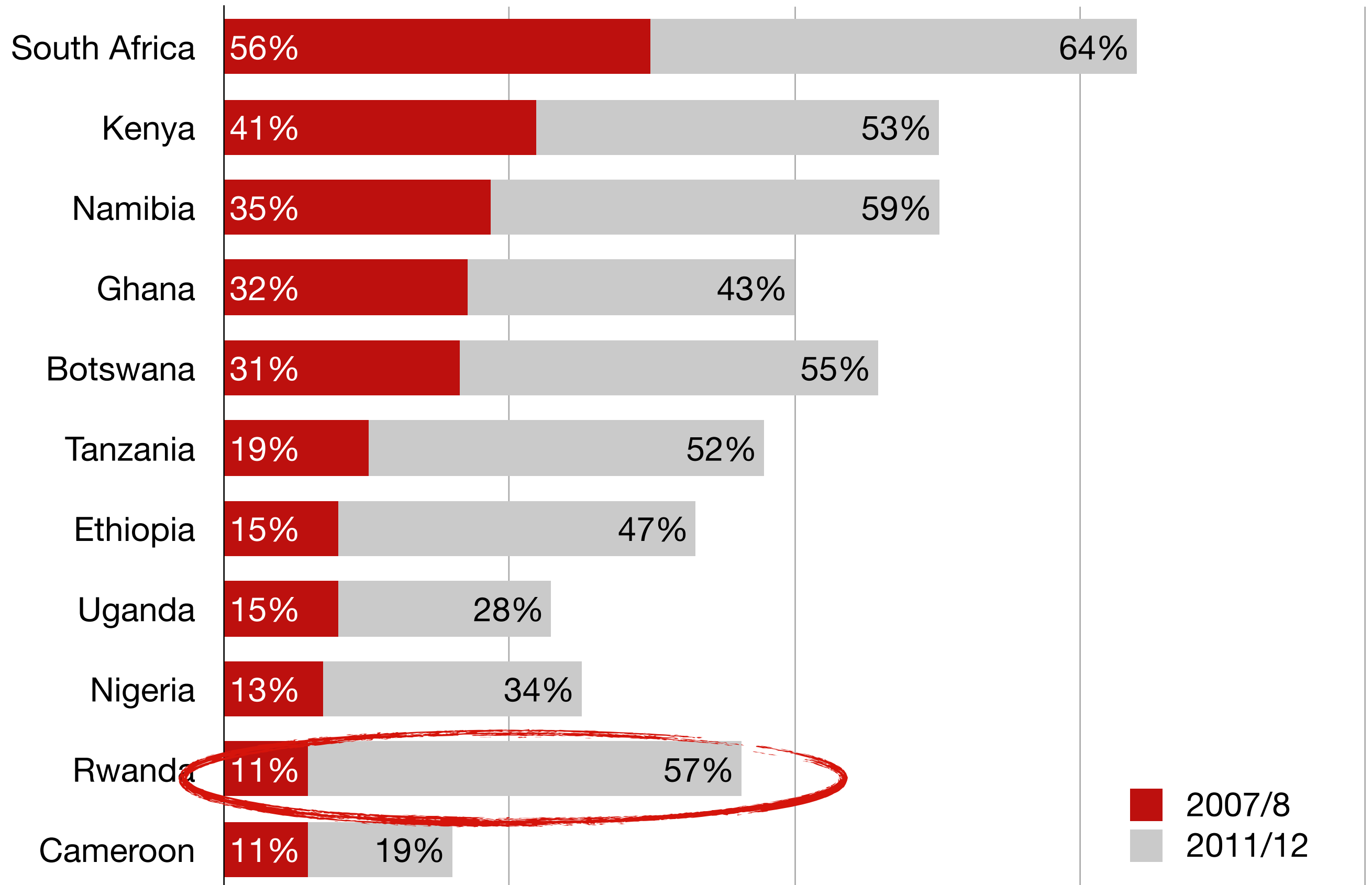
Using mobile for Facebook etc.



Using mobile for emailing

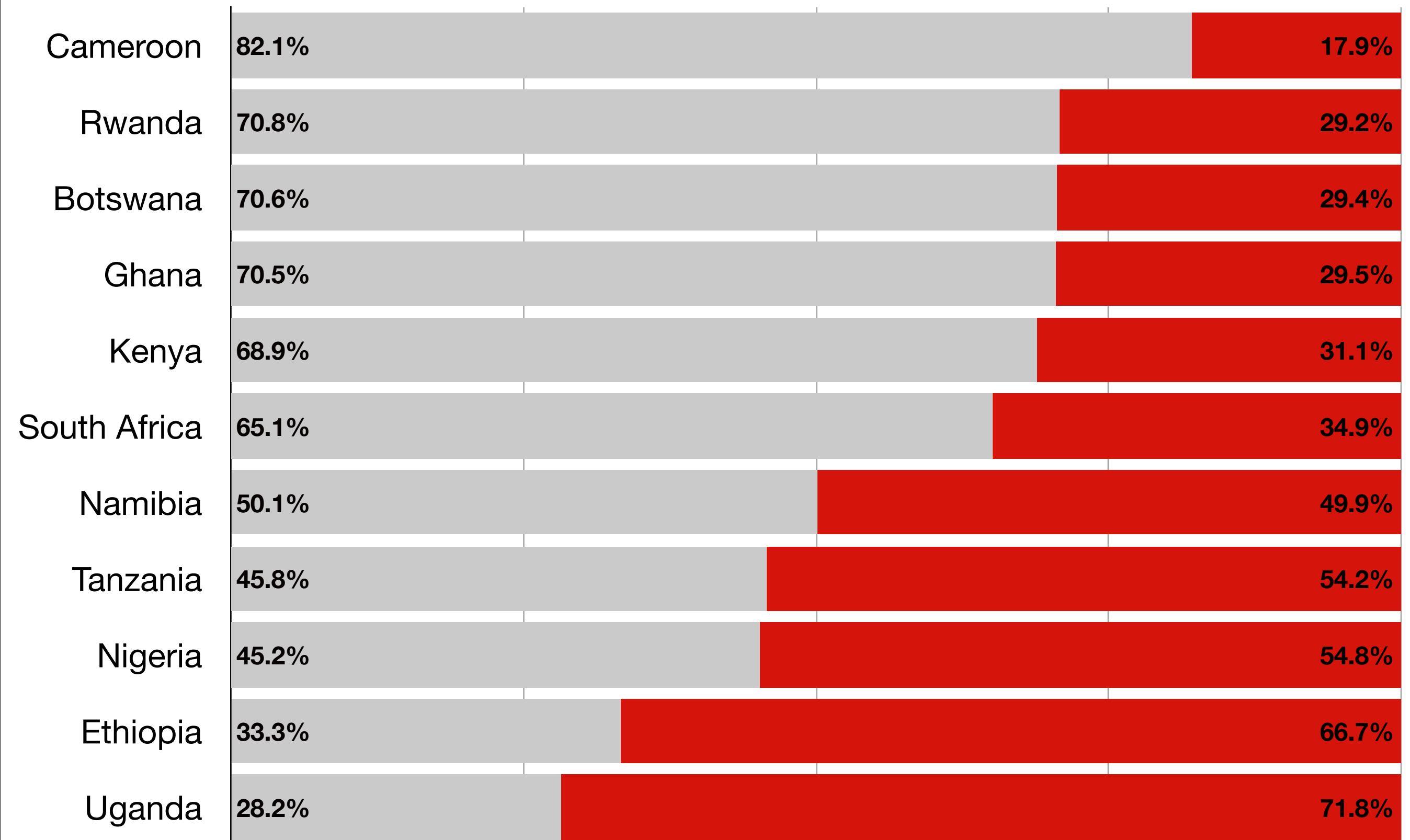


Daily Internet use increased in past 4 years



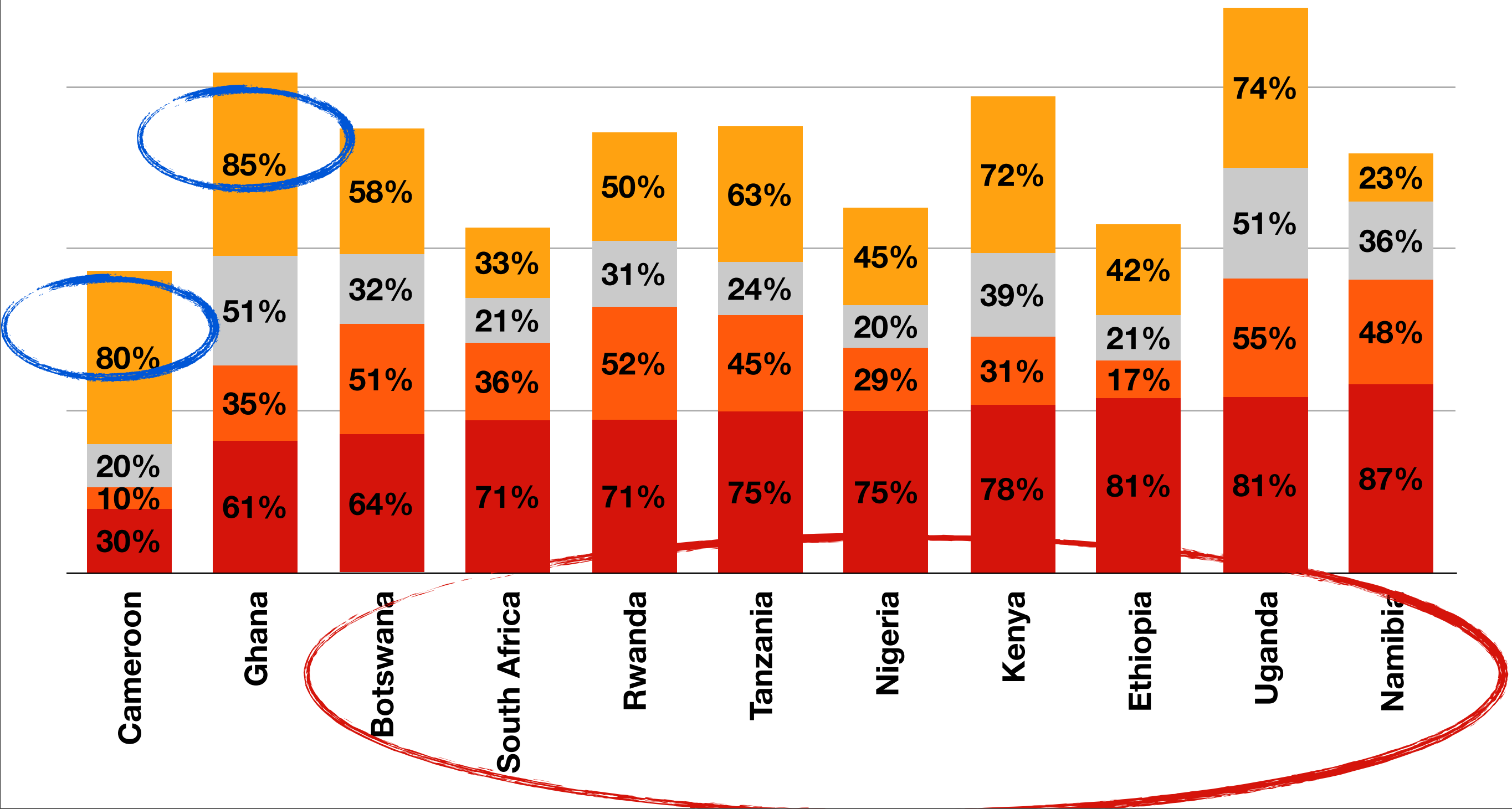
Where was the Internet used first?

Computer Mobile phone



Where the Internet was used in past 12 months

Mobile phone Work Place of education Internet cafe





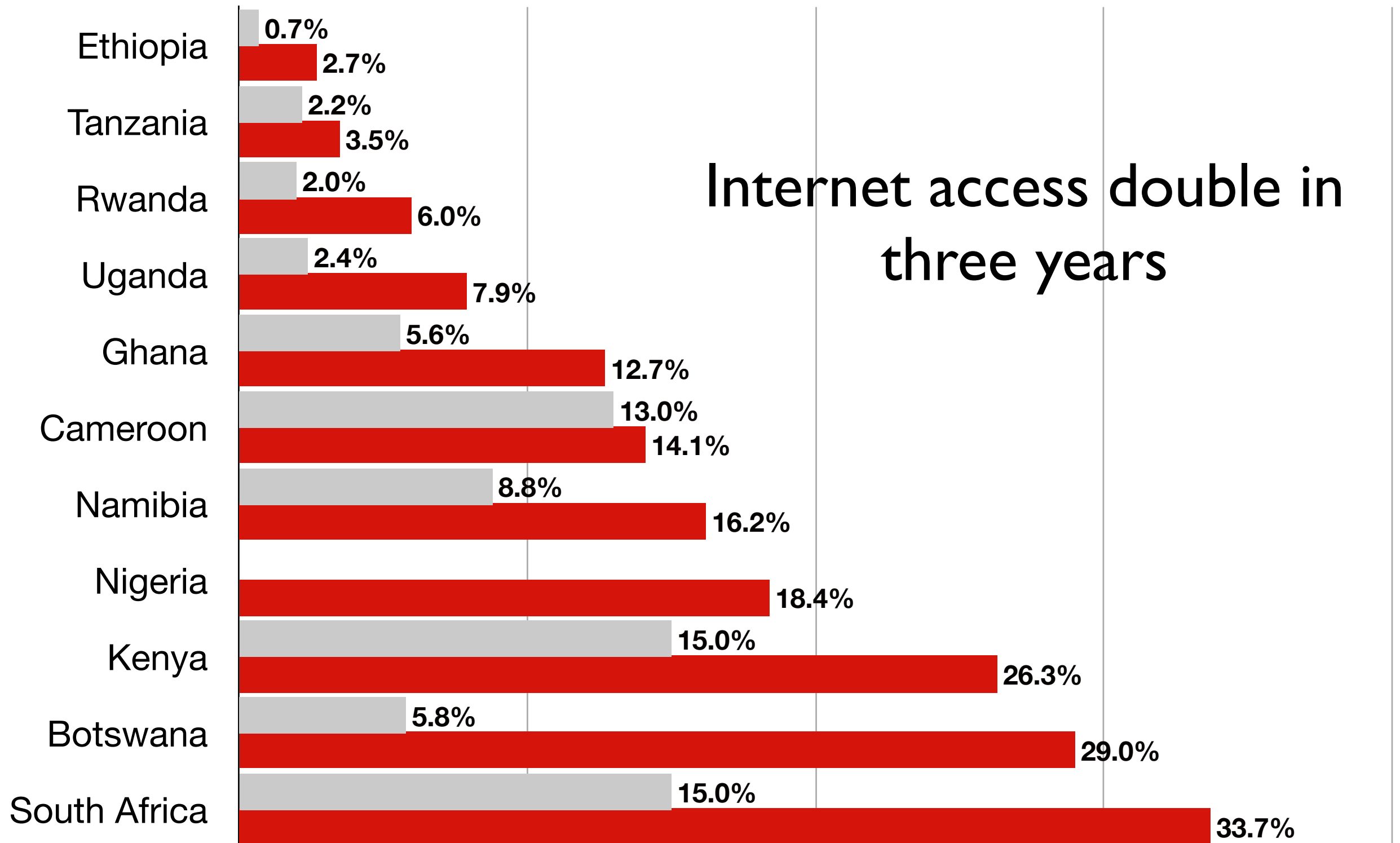
Internet Access Models

	Old Internet	New Internet
Hardware	Computer / Laptop	Mobile
Billing	Postpaid (monthly Internet subscription)	Prepaid
Skill requirement	High (Windows + Internet explorer + Viruses)	Low
Electricity	electricity mostly required at location of Internet use	no required at home
Location	Work, school, Internet cafe	Anywhere

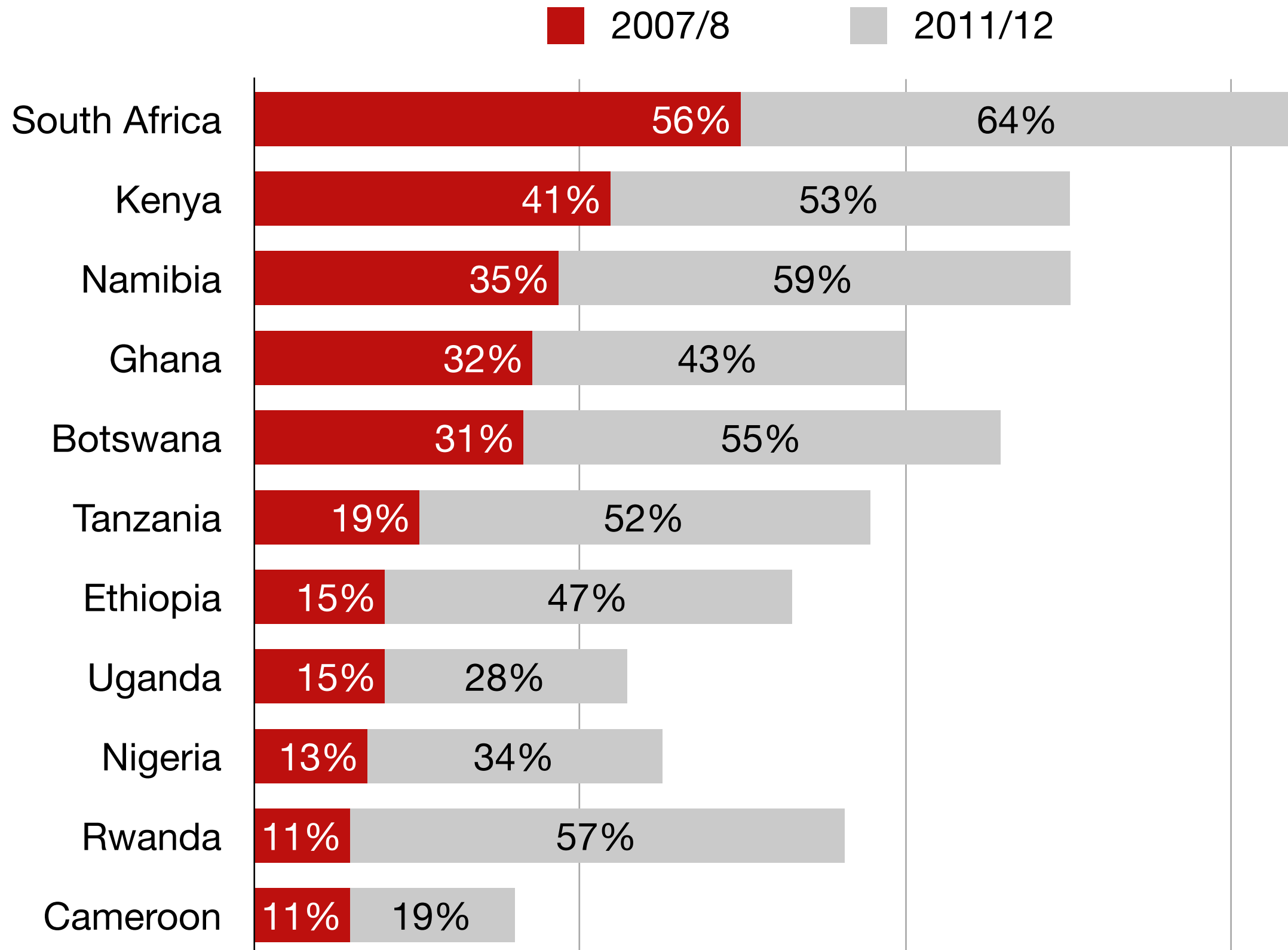


Internet access: 2007/08 VS 2011/12

■ 2007/8 ■ 2011/12

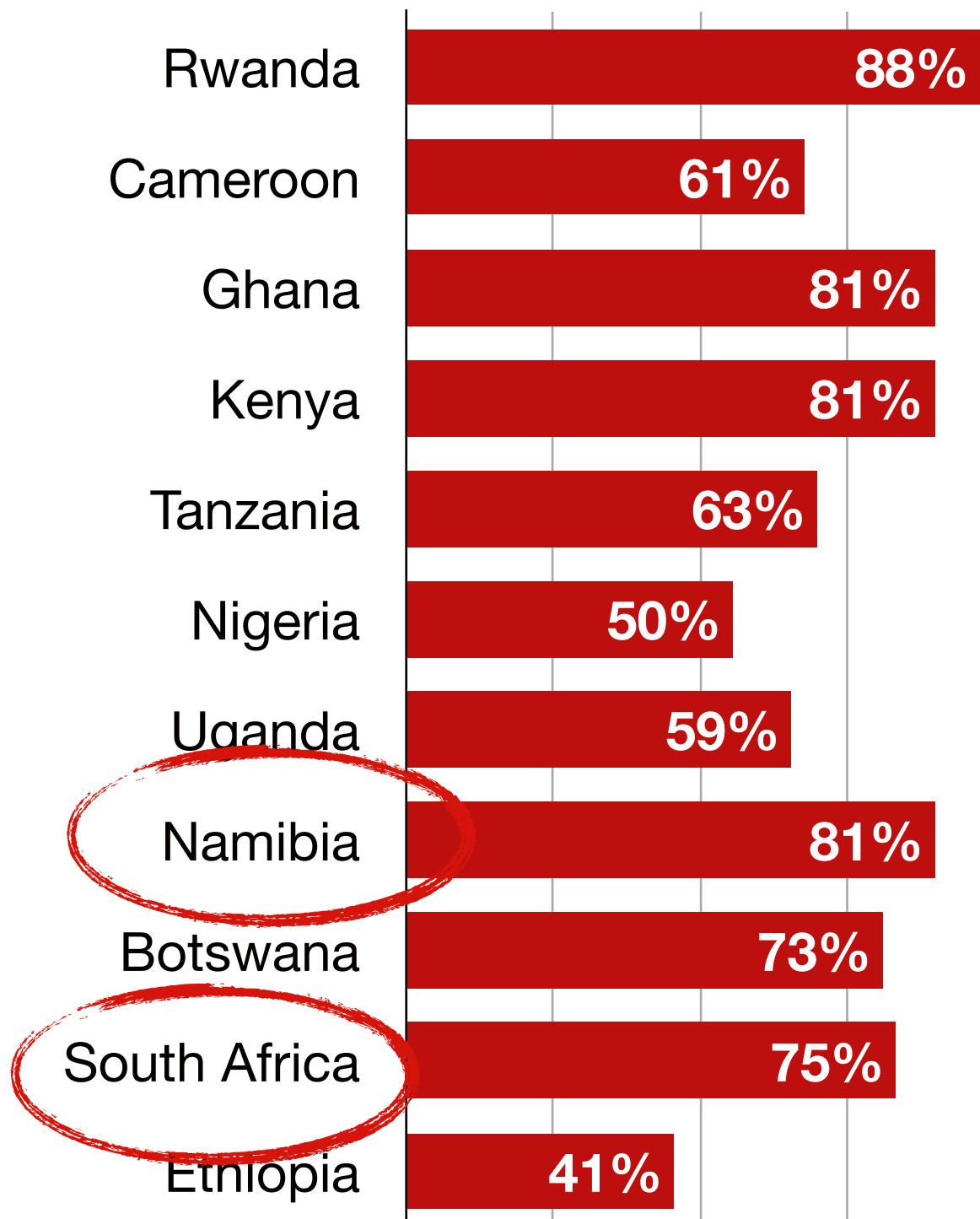


Frequency of Internet daily use: 2007/08 VS 2011/12

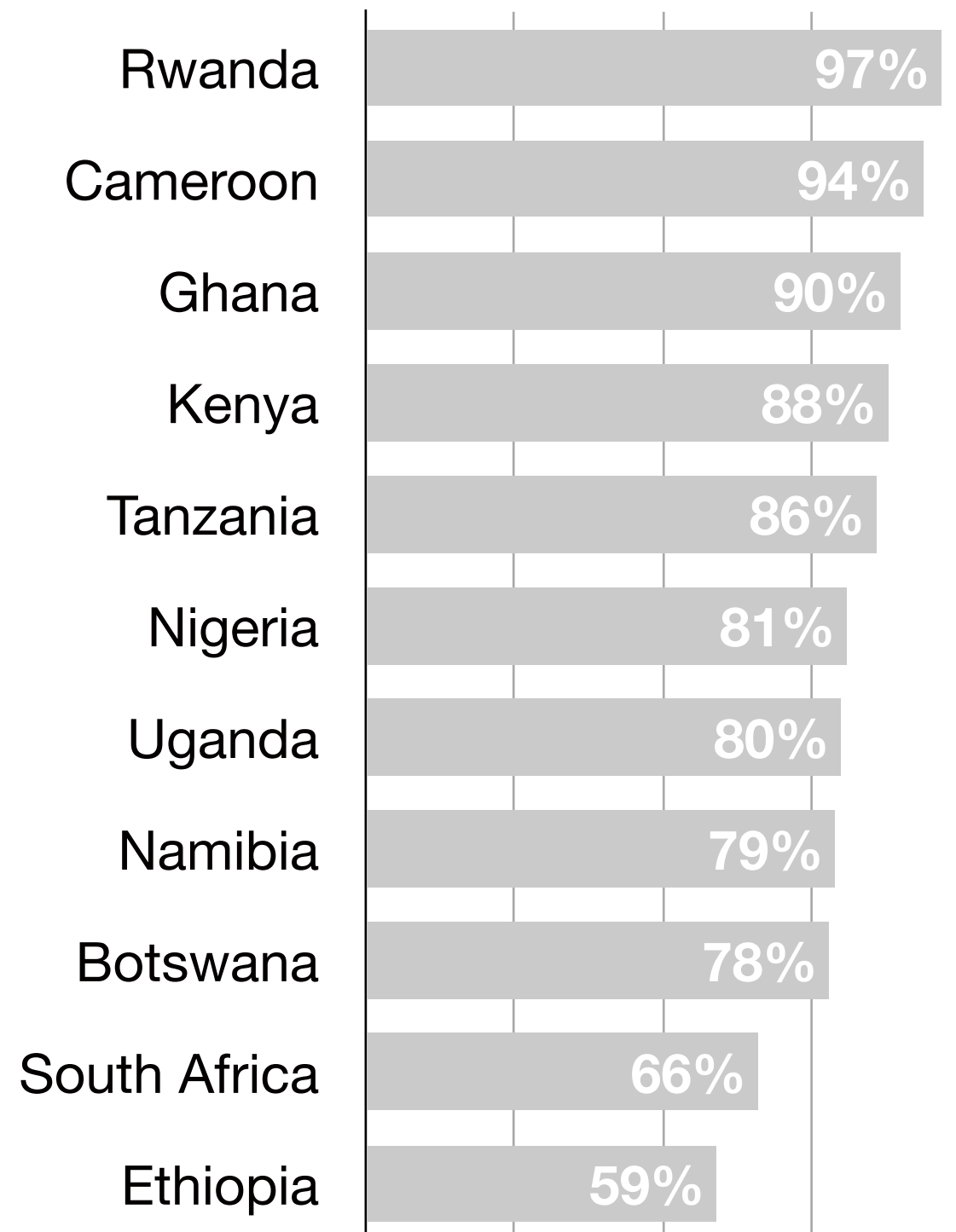


15+ Internet users

Signed up for social network



with email address





main reasons for using the mobile phone...

Female

Male

Missed Call/Please Call Me

86.5%

85.7%

Sending/receiving text

88.2%

85.2%

Playing games

42.7%

46.3%

Sending/receiving money

34.9%

27.5%

Browsing the Internet

16.0%

21.5%

Downloaded applications

12.9%

18.2%

Reading/writing Emails

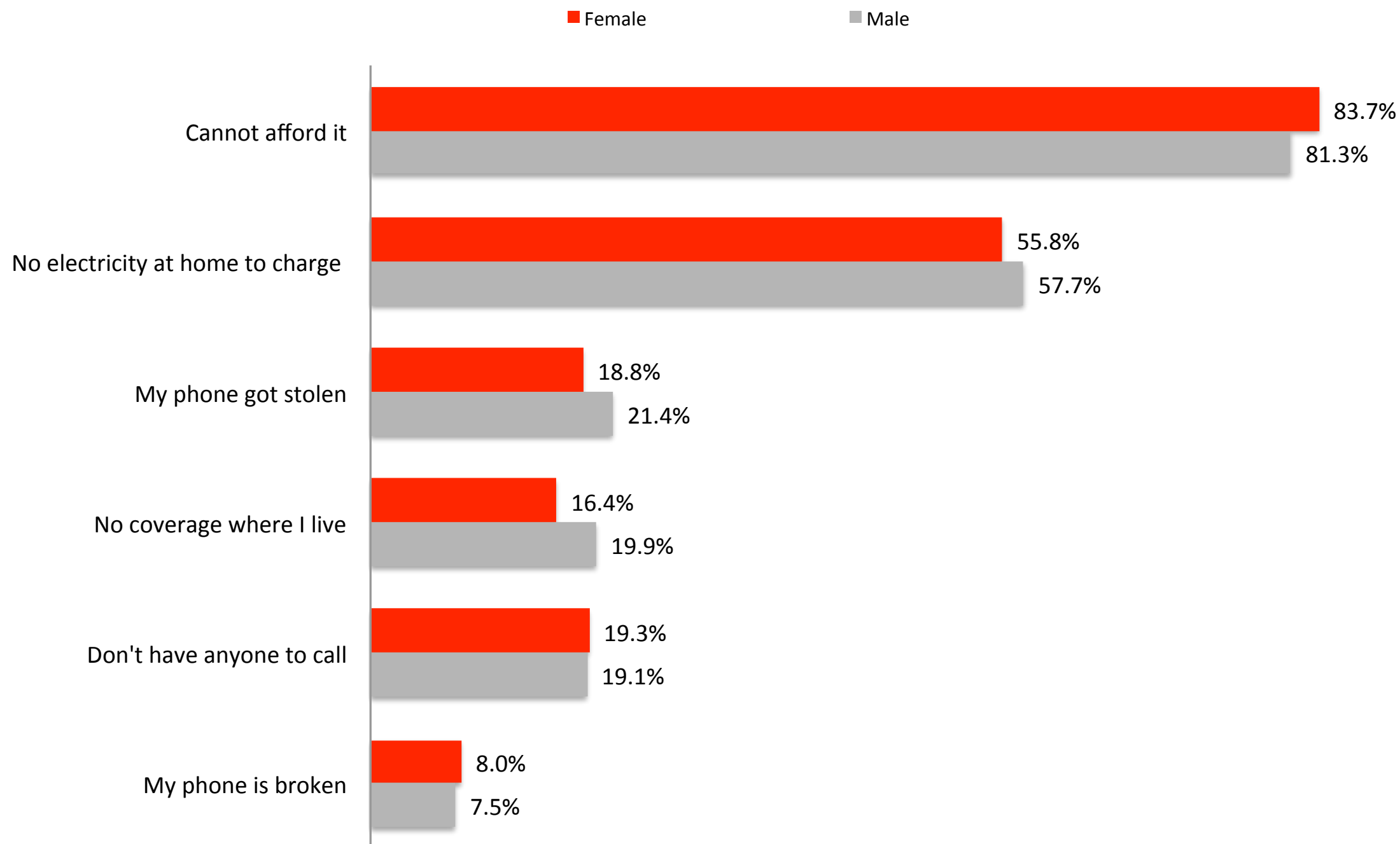
11.7%

16.1%



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share of reasons why individuals do not have a mobile phone...



Mobile/wireless app ecosystem

Up to a two line subtitle, generally used to describe the takeaway for the slide

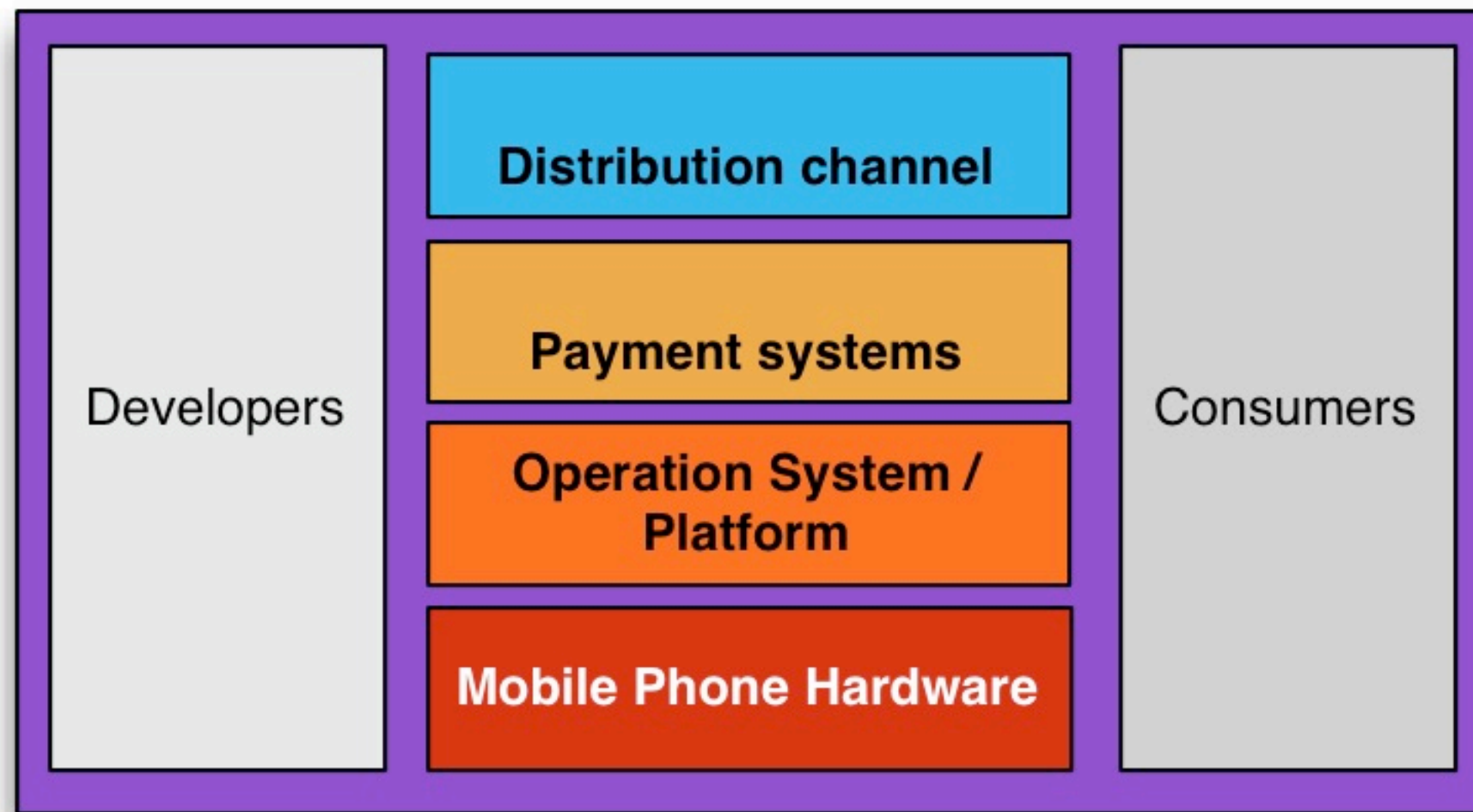


Figure 5: Mobile Application Ecosystem

M-apps ecosystem

Mobile Operating Systems such as iOS include an application programming interface (API), which is a software specification used as an interface between different software components. For example, the latest version of the Android OS, Jellybean, provides several public APIs that allows developers to integrate their applications with the OS.

Platforms allow other software to be built on top. Examples of platforms include Facebook and emerging market social networking platforms such as Mxit in South Africa. A platform provides uniform standards and payment mechanisms - these standards are used by developers to develop and sell applications. A platform sits on top of an operating system.

Mobile Applications run on mobile phones, either on the operating system or on a platform such as Mxit or Facebook, that themselves run on an operating system like iOS, Android or Symbian OS.





Conclusions

- The mobile is closing the voice and the data gap in Africa
- First wave of Internet access through PCs and fixed-line /modem dial-up. Mostly through work, school or public access (Internet cafes)
- Second wave is through mobile phones
 - Easier to use
 - Cheaper equipment compared to computers
 - Prepaid (modem dial-up was postpaid)
 - No electricity at home needed
- Internet enabled mobile phones, low bandwidth applications, and social networking are the key drivers
- Mobile Internet reduces the cost of communication: Facebook Zero, whatsapp, Mixit





References

- Calandro, E Stork, C and Gillwald, A (2012) Internet Going Mobile, Policy Brief available at www.researchICTafrica.net
- RIA (2012) Mobile@the Base of the Pyramid, <http://www.infodev.org/en/Publication.1193.html>

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