

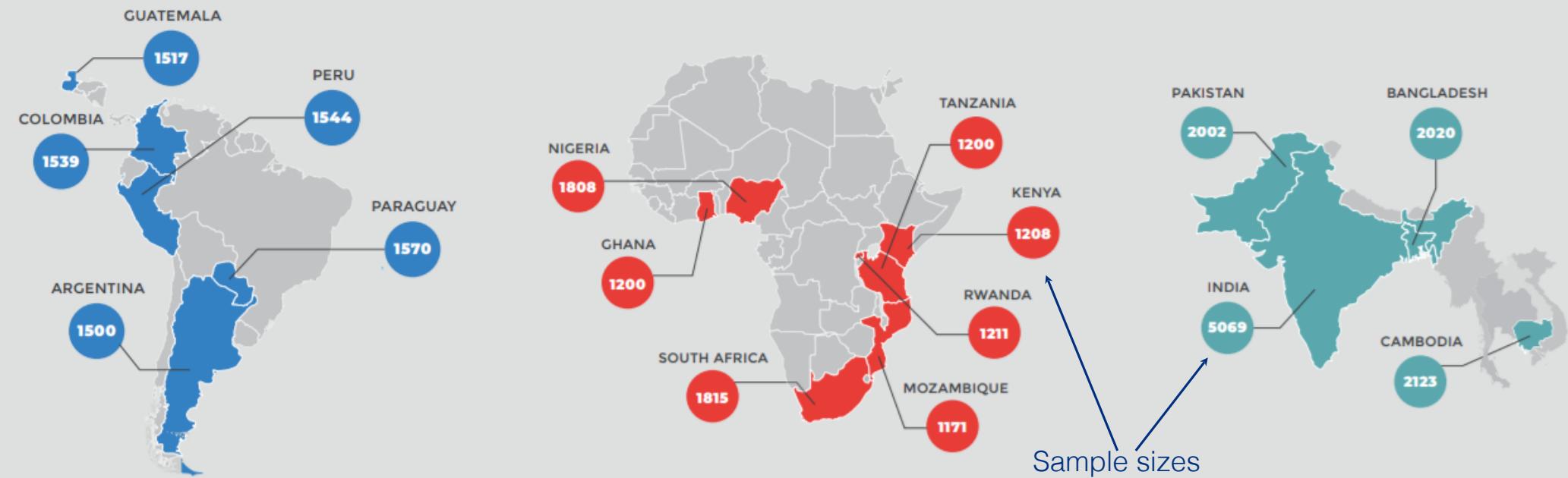


Who's connected, who isn't and why?

Shazna Zuhyle | 7 August 2018 | Washington, D.C.



To date: 18 countries (covering >30% global population); 38,005 face-to-face interviews; +/-3 margin of error

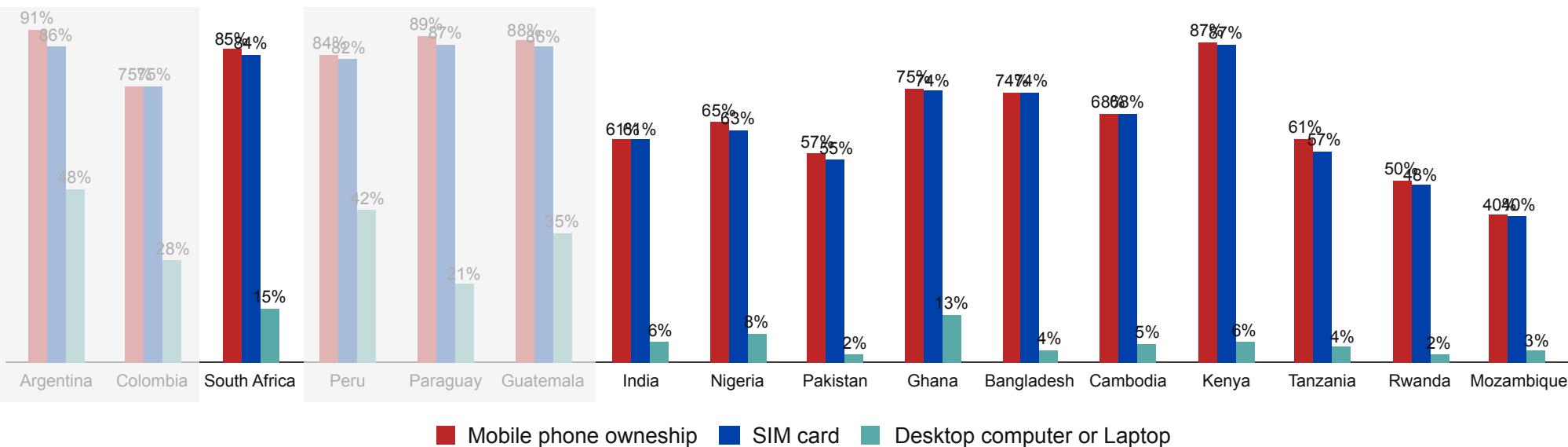


Sample sizes

Notes: Pakistan excludes AJK, FATA, Gilgit-Baltistan (~2% of population)
Nepal data available in September 2018, Sri Lanka data expected by December 2018

Mobile phones are the prevalent mode of access to the Internet

Mobile phone, SIM card & desktop or laptop ownership (% of aged 15-65 population)



■ Mobile phone ownership ■ SIM card ■ Desktop computer or Laptop

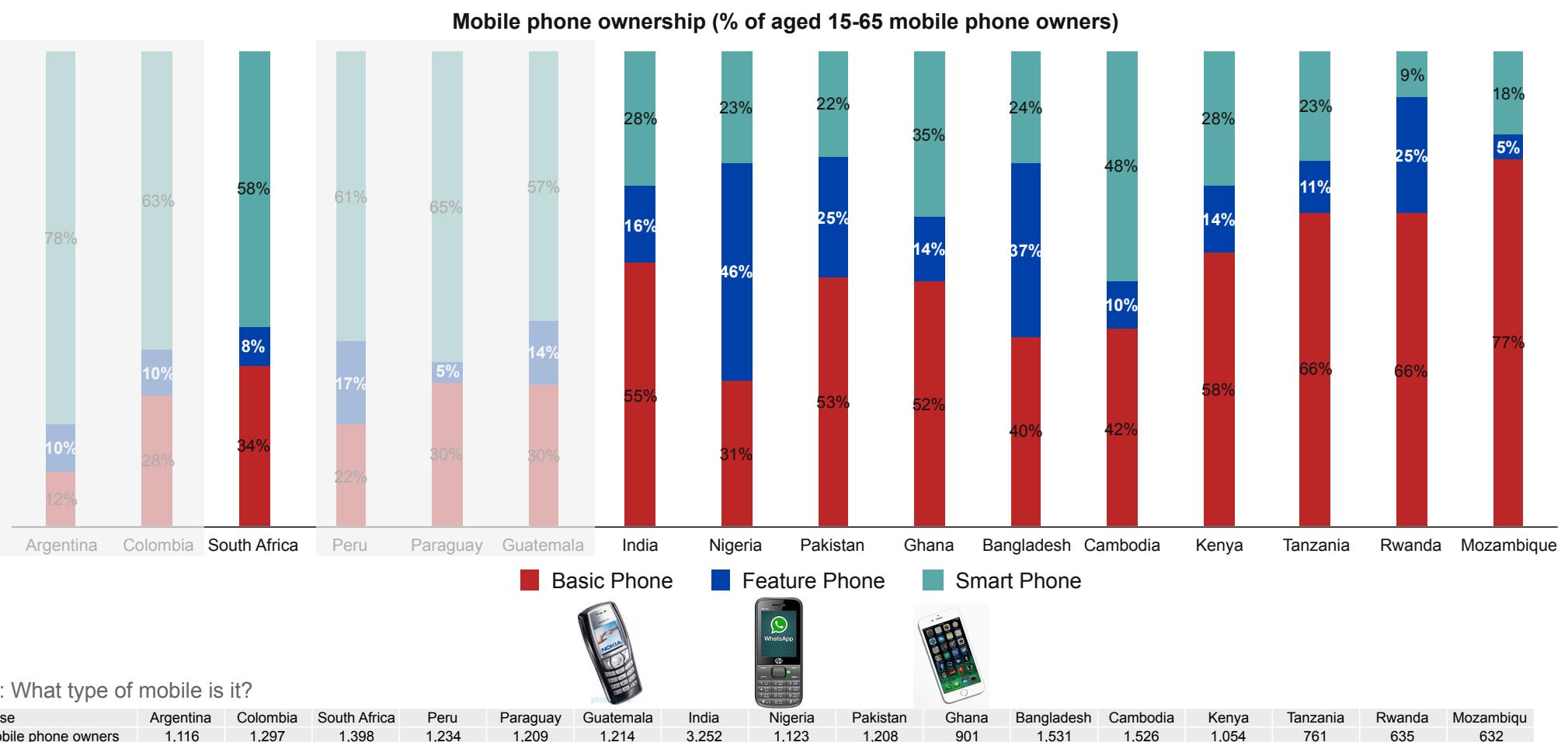
Q1: Do you own a mobile phone?

Q2: How many active SIM cards do you have, (SIM cards that you used in last 30 days)?

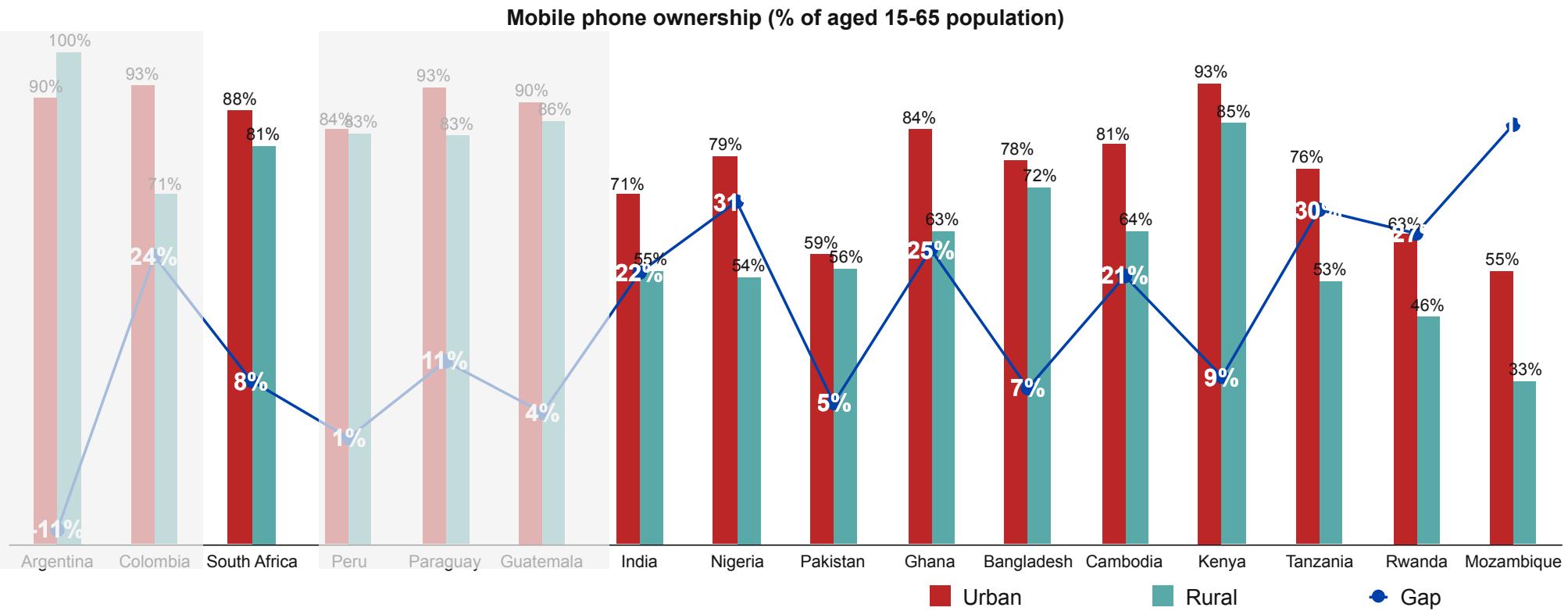
Q3: Do you own a personal Desktop computer or Laptop?

Base	Argentina	Colombia	South Africa	Peru	Paraguay	Guatemala	India	Nigeria	Pakistan	Ghana	Bangladesh	Cambodia	Kenya	Tanzania	Rwanda	Mozambique
All respondents	1,240	1,425	1,610	1,478	1,357	1,407	5,069	1,706	2,002	1,145	2,020	2,123	1,179	1,102	1,118	1,091

However the market is still predominantly for basic phones



Proximity to infrastructure matters: Rural lags behind in connectivity

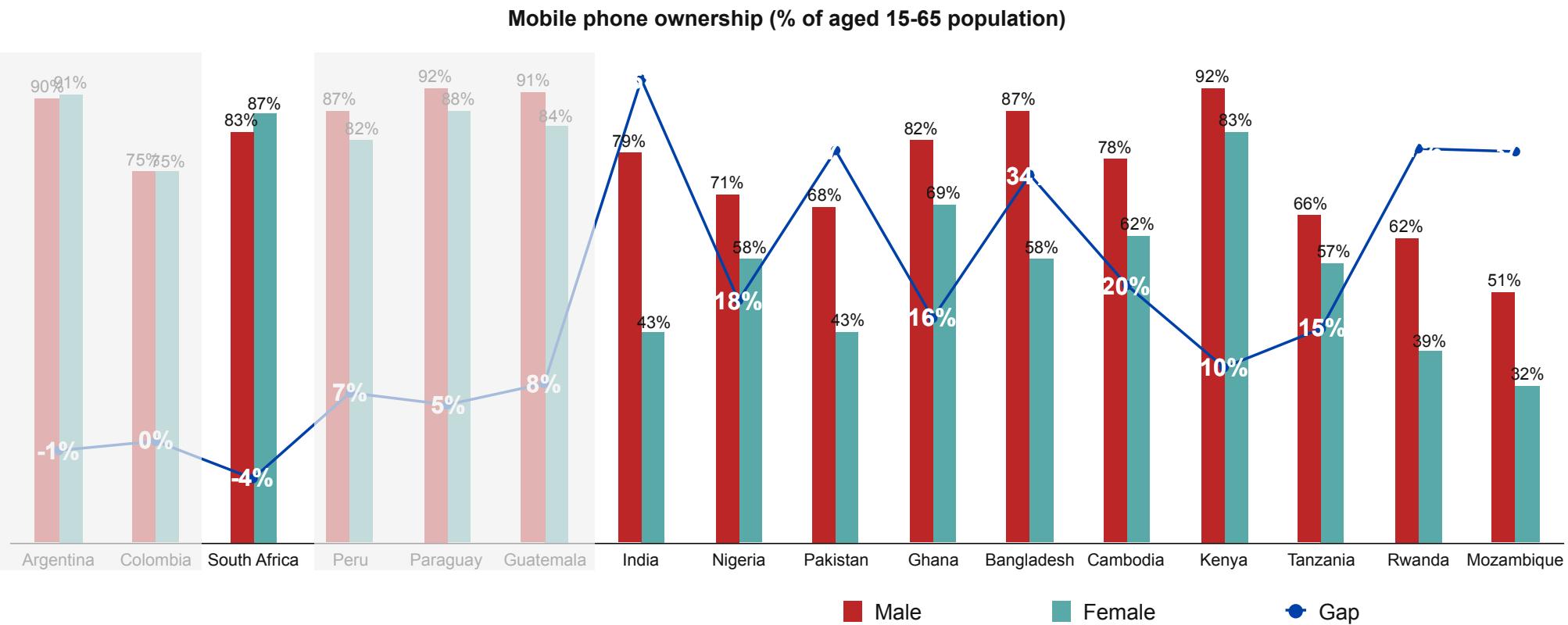


Q: Do you own a mobile phone?

Base	Argentina	Colombia	South Africa	Peru	Paraguay	Guatemala	India	Nigeria	Pakistan	Ghana	Bangladesh	Cambodia	Kenya	Tanzania	Rwanda	Mozambique
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
All respondents	1,208	32	986	439	1,050	765	1,178	300	824	533	550	857	2,200	2,869	1,147	661

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The gender gap is the highest in India among the 16 countries; women in India 46% less likely to own a mobile than men (15-65 group)



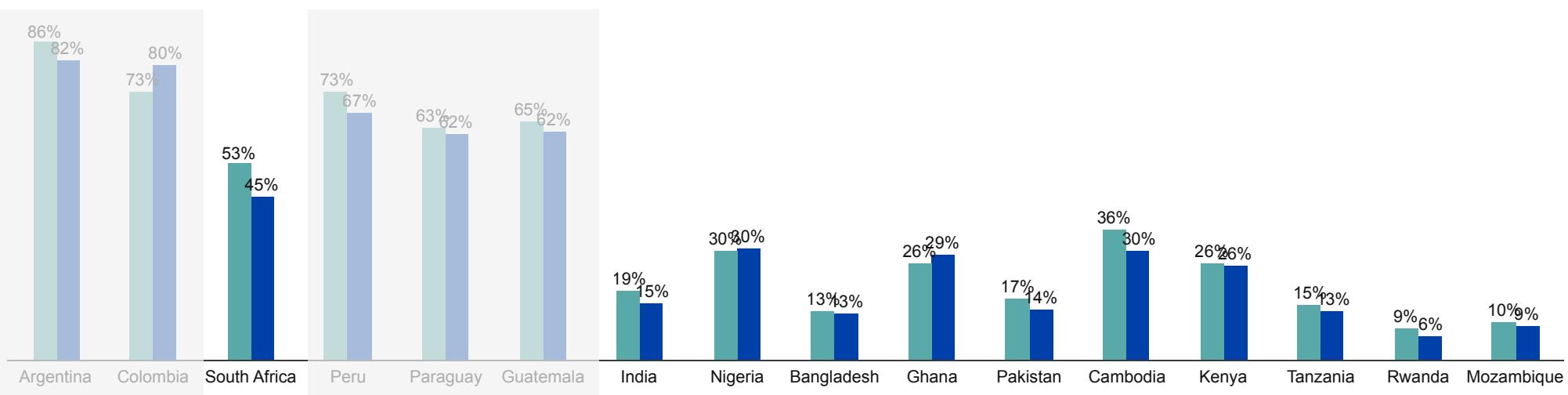
Q: Do you own a mobile phone?

Base	Argentina	Male	Femal	Colombia	Male	Femal	South Africa	Male	Femal	Peru	Male	Femal	Paraguay	Male	Femal	Guatemala	Male	Femal	India	Male	Femal	Nigeria	Male	Femal	Pakistan	Male	Femal	Ghana	Male	Femal	Bangladesh	Male	Femal	Cambodia	Male	Femal	Kenya	Male	Femal	Tanzania	Male	Femal	Rwanda	Male	Femal	Mozambique	Male	Femal
All respondents	478	762	487	487	938	795	1,020	508	970	879	478	656	751	2,478	2,591	912	896	6	1,060	1,060	912	896	6	1,060	1,060	942	547	653	1,092	1,092	928	735	1,388	544	664	531	669	556	655	527	644							

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Internet use ≈ Social media use

Internet and social media use (% of aged 15-65 population)



Q1: Have you ever used the Internet (Gmail, Google, Facebook, email)?

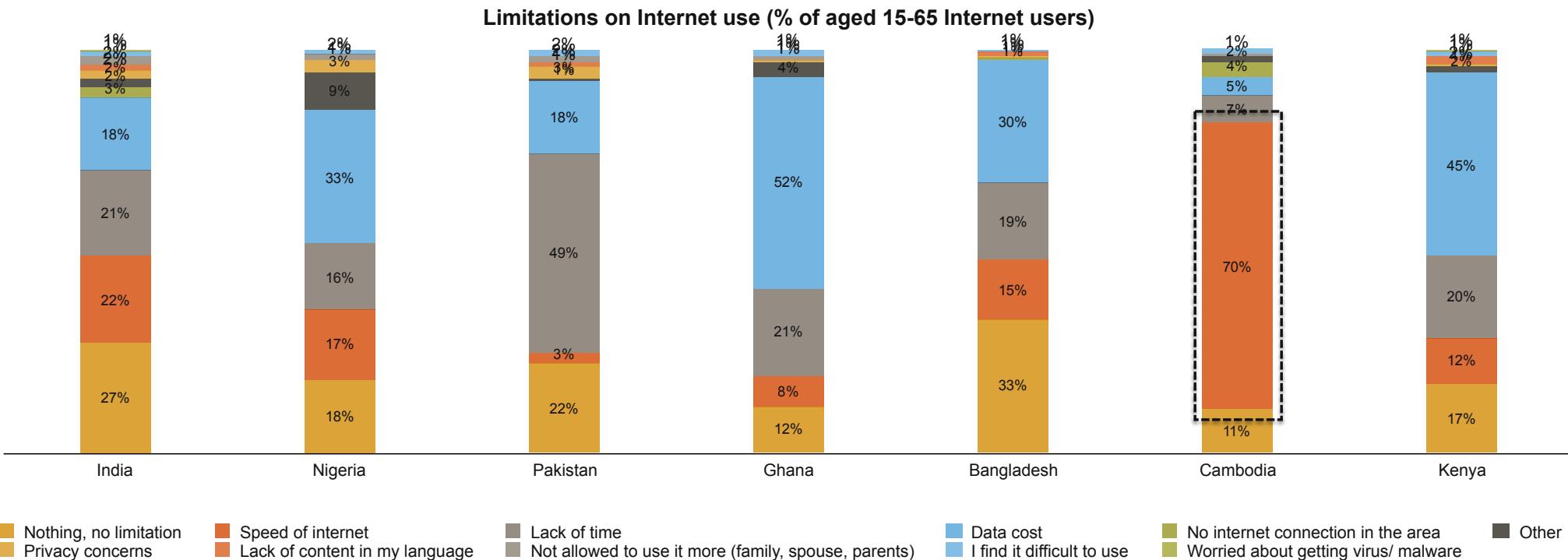
■ Internet use

■ Social media use

Q2: Do you use social media like Facebook, Whatsapp, Twitter etc?

Base	Argentina	Colombia	South Africa	Peru	Paraguay	Guatemala	India	Nigeria	Pakistan	Ghana	Bangladesh	Cambodia	Kenya	Tanzania	Rwanda	Mozambique
All respondents	1,240	1,425	1,610	1,478	1,357	1,407	5,069	1,706	2,002	1,145	2,020	2,123	1,179	1,102	1,118	1,091

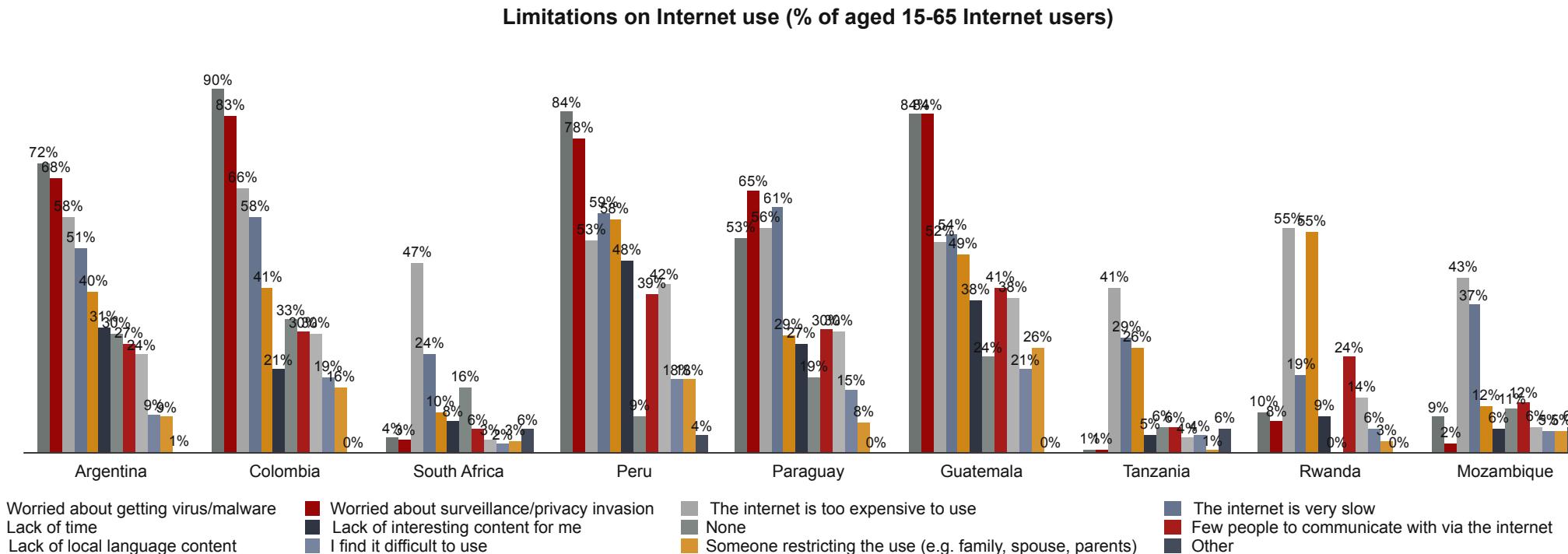
Speed of Internet, lack of time & data costs are key challenges among current Internet users



Q: What is your main limitation for your use of the internet? (Single response question)

Base	India	Nigeria	Pakistan	Ghana	Bangladesh	Cambodia	Kenya
Internet users	919	529	427	311	266	804	440

What limits more use among current users? : Cost & speed in most African countries; malware & privacy concerns in LATAM

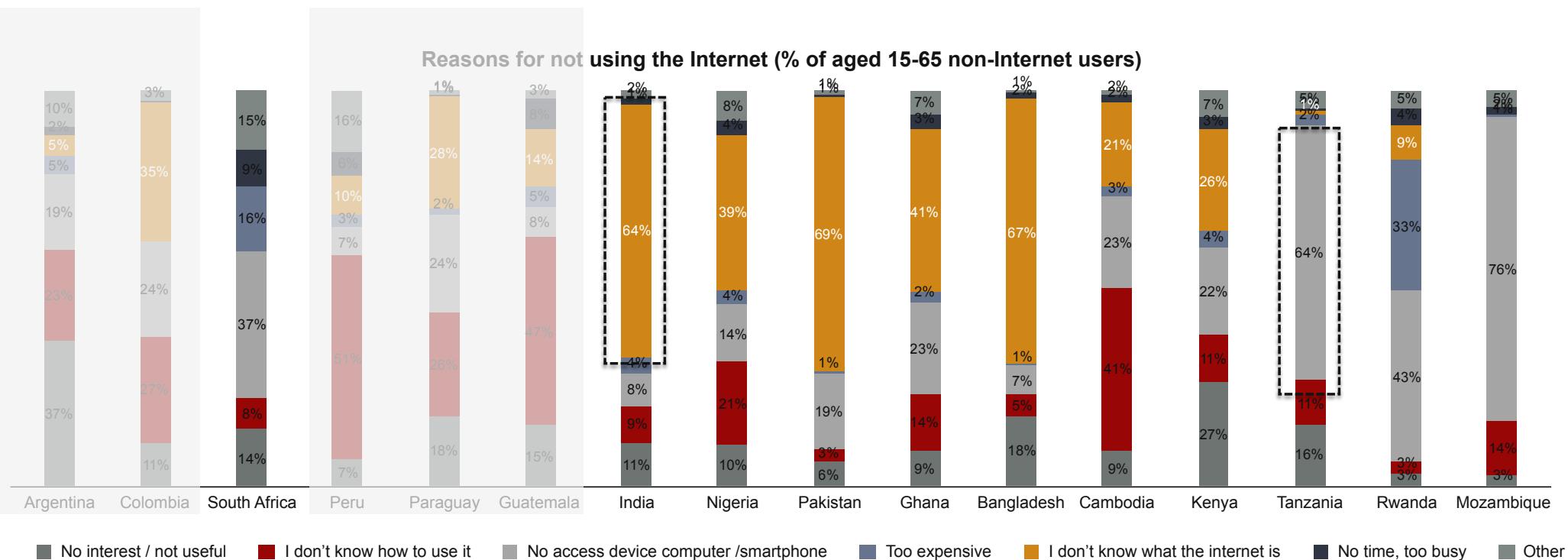


Q: I'm going to read some phrases that other people have mentioned like limits to use the internet? For each one, please, tell me if you consider it a limitation or not. (Multiple response question)

Base Internet users	Argentina	Colombia	South Africa	Peru	Paraguay	Guatemala	Kenya	Tanzania	Rwanda	Mozambique
	1,006	1,192	829	1,120	886	1,104	440	266	172	238

NON INTERNET USERS

Non users: Still a significant % of in Asia (and some in Africa) don't know what the Internet is. In LATAM, many don't know how to use it.



Q: What is the main reason why you do not use the Internet?

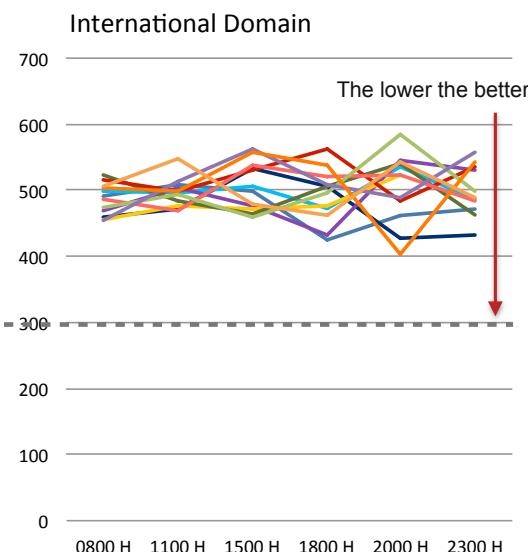
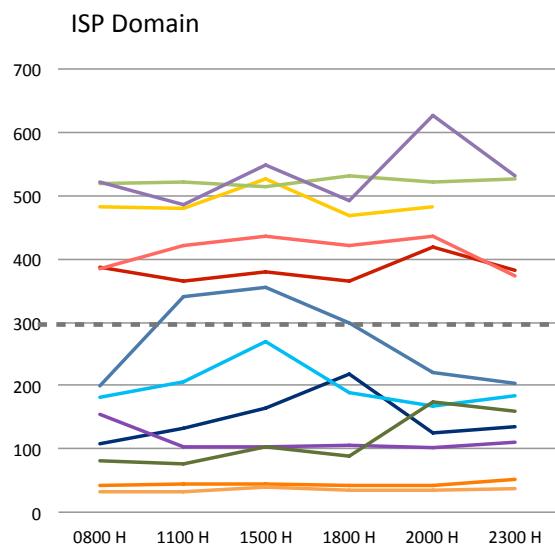
Base Non-Internet users	Argentina	Colombia	South Africa	Peru	Paraguay	Guatemala	India	Nigeria	Pakistan	Ghana	Bangladesh	Cambodia	Kenya	Tanzania	Rwanda	Mozambique
Non-Internet users	192	248	317	391	536	484	4,150	1,177	1,575	837	1,754	1,320	741	319	151	319

QUALITY OF SERVICE EXPERIENCE

“A chain is only as strong as its weakest link”

Service degradation when accessing the ‘open Internet’

Fixed Broadband (DSL) in 10 cities



- Inadequacy of supply (backhaul)
- Sole reliance on undersea cables



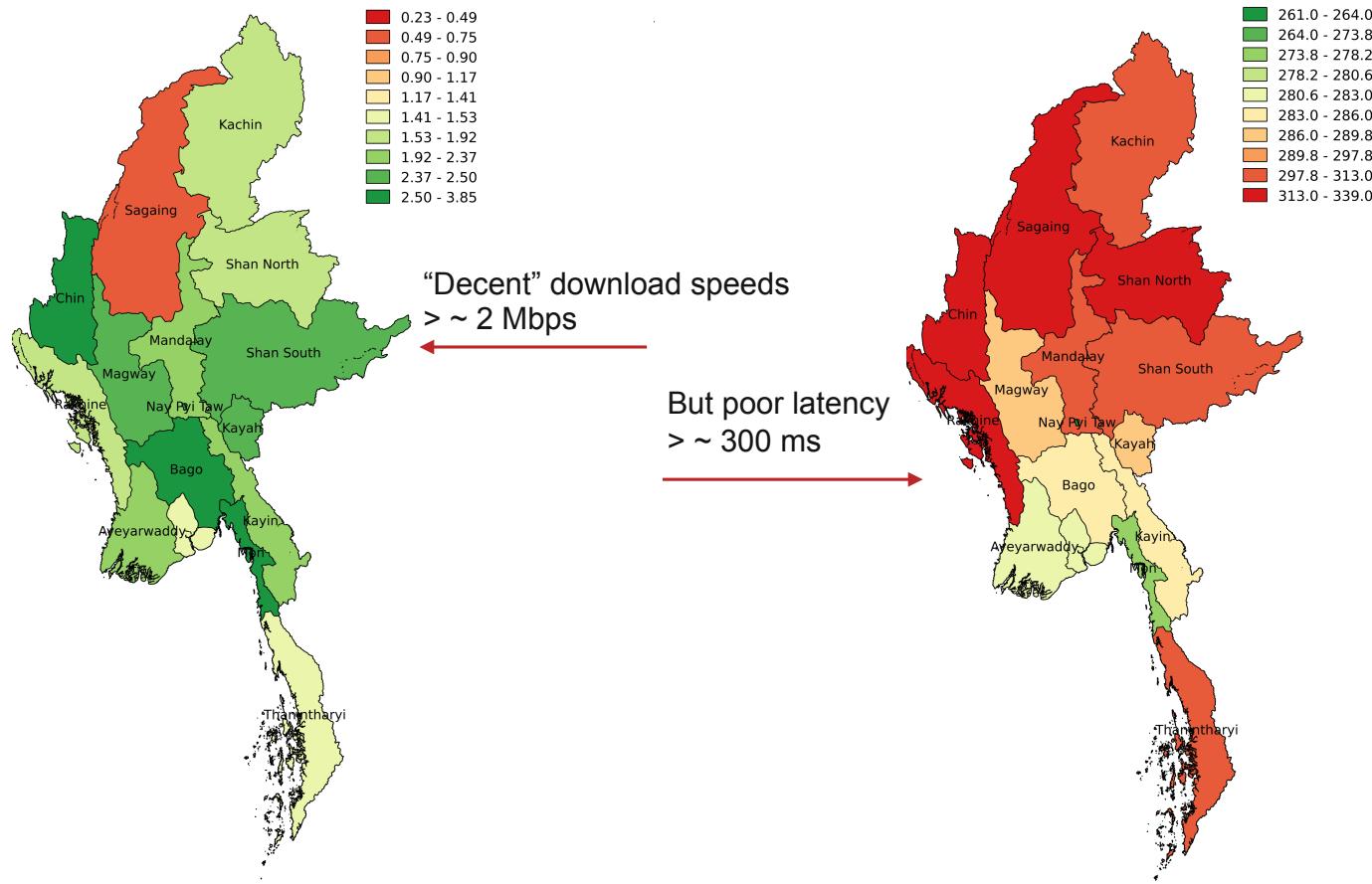
- Asia Pacific Information Superhighway
[Fiber along the Trans-Asian Railway to link all of Asia to Europe and the Pacific Rim]

UN ESCAP

BSNL (1Mbps)-Bangalore, IN	BSNL (4Mbps)-Chennai, IN
BSNL (4Mbps)-Delhi, IN	Dhiragu (512kbps)-Male, MV
NTC (512kbps)-Kathmandu, NP	PTCL (4Mbps)-Karachi, PK
SLT (2Mbps)-Colombo, LK	Dialog LTE (4Mbps)-Colombo,LK
Telkom Speedy Instant (512kbps)-Jakarta, ID	Internux LTE (72Mbps)-Jakarta, ID
True online (10Mbps)-Bangkok,TH	3BB (10Mbps)-Bangkok,TH

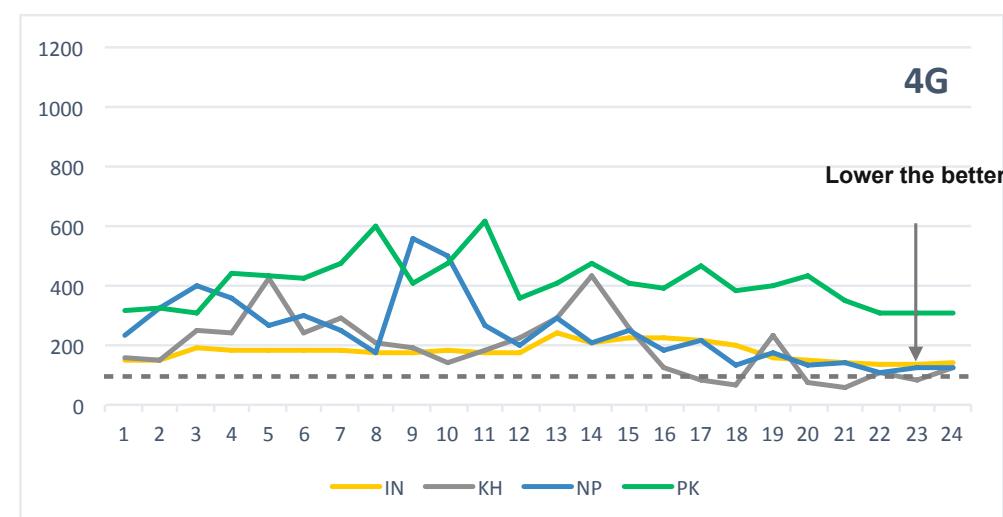
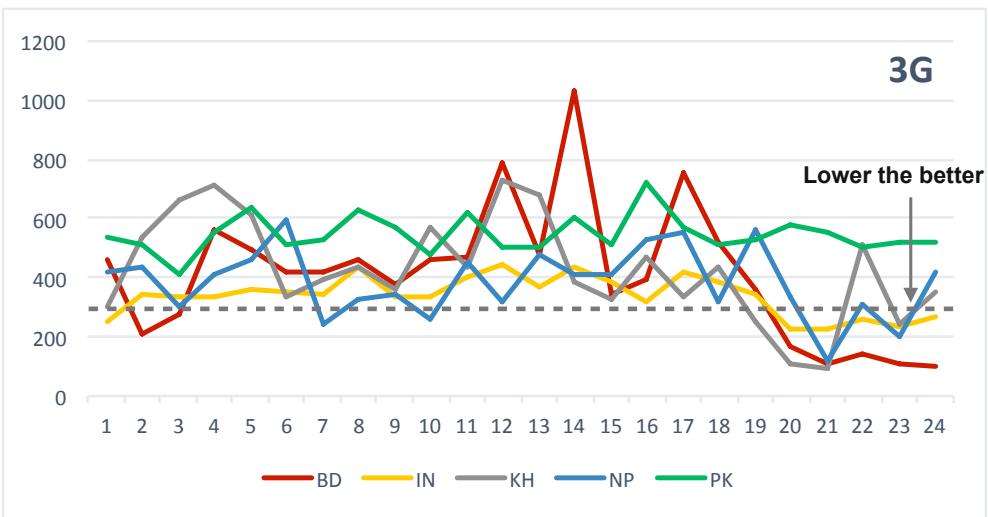
Source: LIRNEasia, 2014

Latency causes poor quality experience (example from Myanmar)



- Recently liberated telecom sector
- Prices of SIM cards \$1000 (black market / auctions) to \$2
- It's all about mobile broadband
- Leapfrogged to 3G and LTE

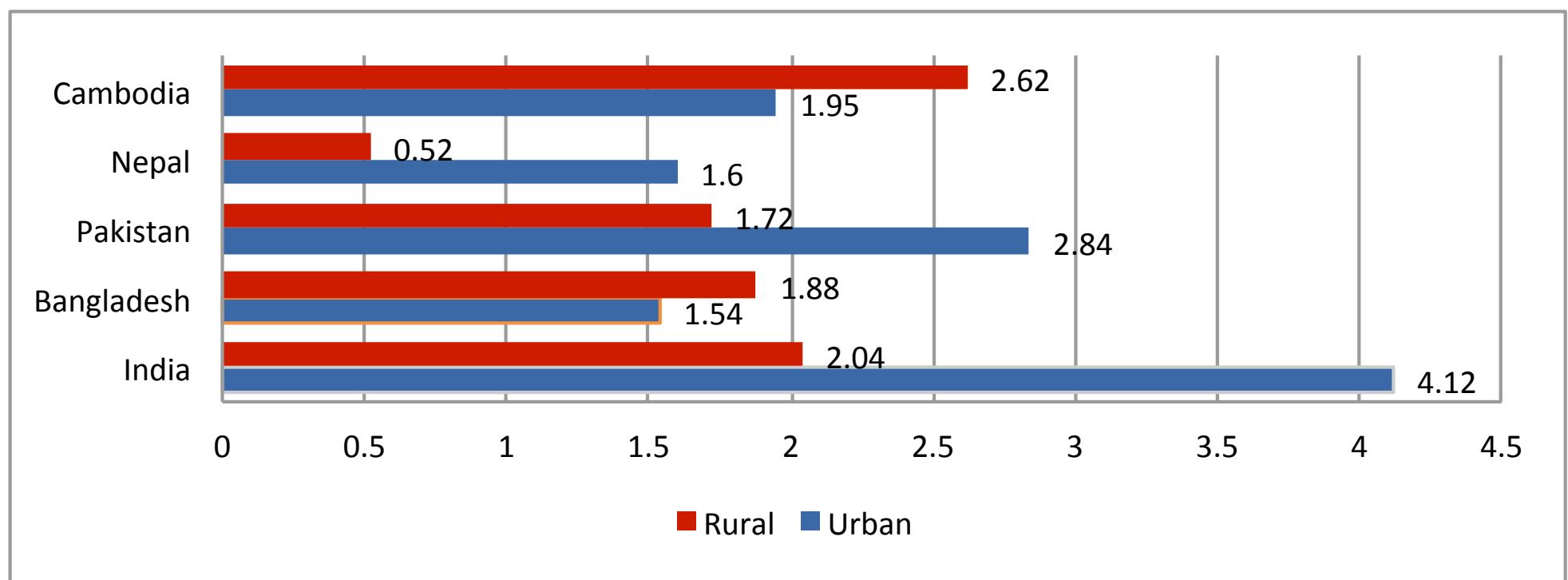
Marginal performance improvements with 4G / LTE networks



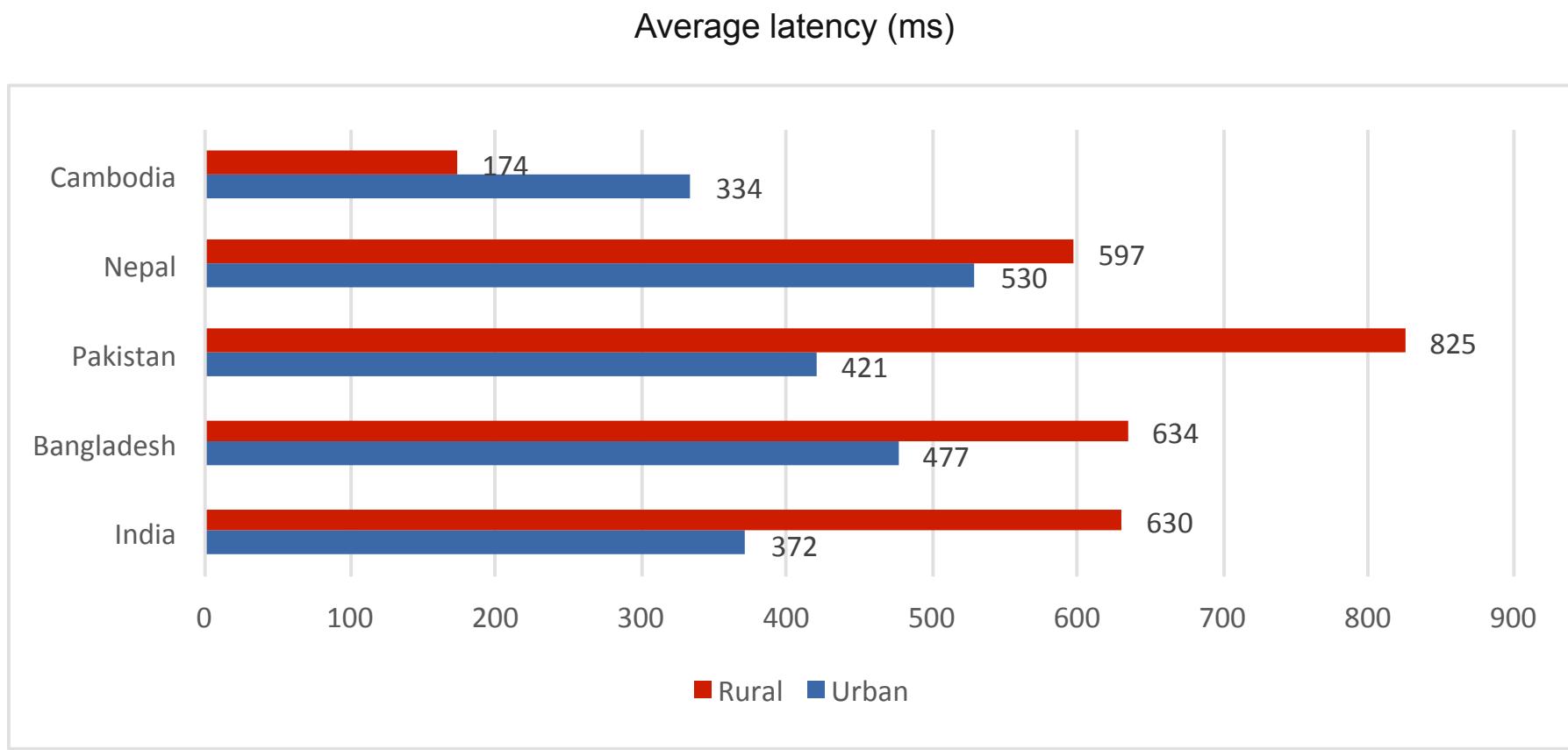
BD - Bangladesh ~ 2,000 sessions
 IN - India ~ 24,000 sessions
 KH - Cambodia ~ 17,000 sessions
 NP - Nepal ~ 16,000 sessions
 PK - Pakistan ~ 100,000 sessions

Urban-Rural disparities evident in QoSE

Average Download speed (Mbps)



Urban-Rural disparities evident in QoSE



India: rural locations faced 15% network errors vs. 5% in urban

