

# WSIS and ICTs: what contributions to Development and SDG?

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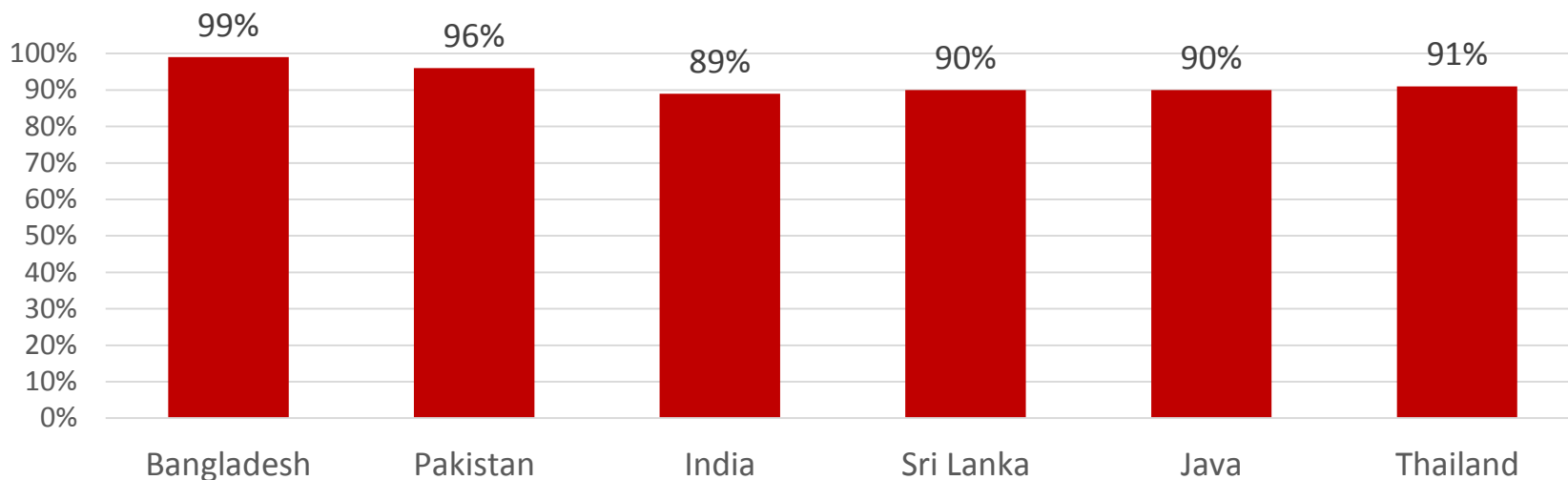


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# Investment + reforms connected billions in Asia. Even the poorest (those at the bottom of the pyramid, BOP) were making calls & texting

Used a phone in the last 3 months (% of BOP)



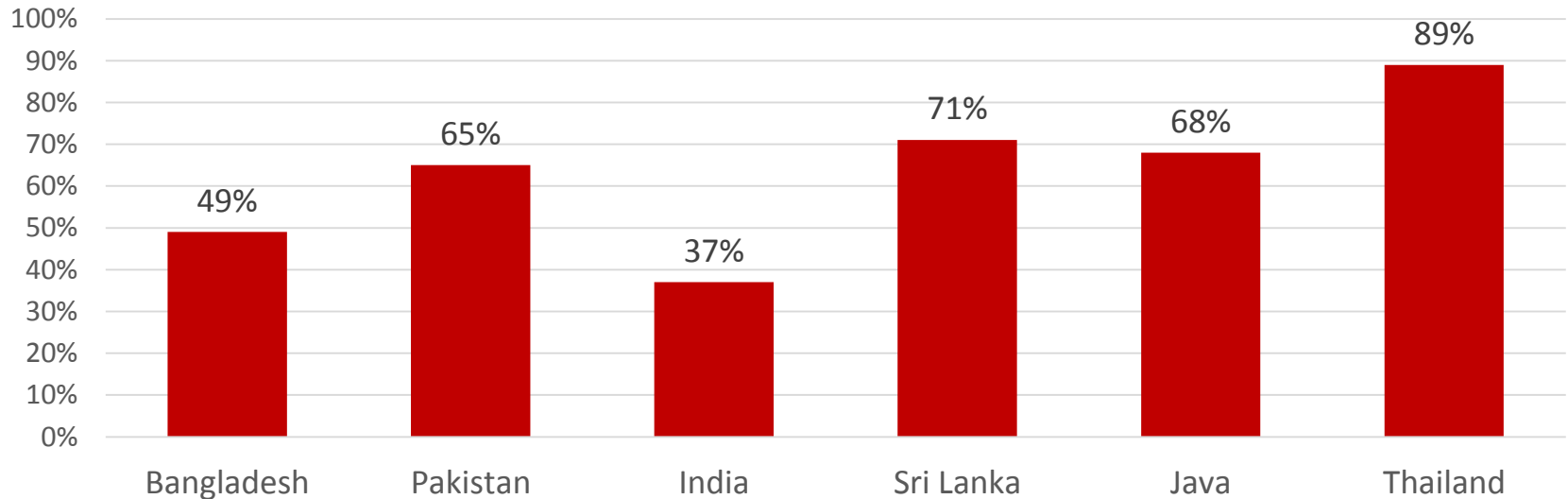
Q: Did you use a mobile in the past three months to make/receive a call/SMS/MMS?

Base: All BOP Respondents 10,154 (6 Countries)  
BOP = Bottom of the Pyramid = Socio Economic Classifications D and E

Source: LIRNEasia 2011 survey representative of Bottom of the Pyramid population in each country and of Java Island in Indonesia (that has ~ 70% of the population of Indonesia). Bottom of the Pyramid = BOP = those belonging to socio economic classification (SEC) D and E.

# ...even when they didn't own a phone individually (shared use)

Mobile phone ownership 2011 - individual (% of BOP teleusers)



Q: Do you own a mobile phone?

Base: All BOP Respondents 10,154 (6 Countries)

BOP = Bottom of the Pyramid = Socio Economic Classifications D and E

Source: LIRNEasia 2011 survey representative of Bottom of the Pyramid population in each country and of Java Island in Indonesia (that has ~ 70% of the population of Indonesia). Bottom of the Pyramid = BOP = those belonging to socio economic classification (SEC) D and E.

# Has it put money in the pockets of the poor?

## Micro-level results are less stunning than we expected

- A SYSTEMATIC REVIEW of the impact of mobile phones in RURAL livelihoods
- All published and grey literature in English language; Since the year 2000
  - 14,128 results from electronic search
  - 8,981 studies initial title abstract screening
  - 1460 subject to full text screening
  - 28 electronic + 20 grey literature: subject to critical appraisal
- Included/allowed methods: Experimental, quasi-experimental, observational studies, natural experiments:
- Various types of interventions allowed:
  - Infrastructure interventions (mobile coverage reaching people);
  - Device Interventions (mobile handsets/SIMs bought/given);
  - Content and App Application Interventions (providing apps for a particular task or community)

# Intervention = Rollout of mobile phone networks. Result= positive micro level impact. Generalizable results

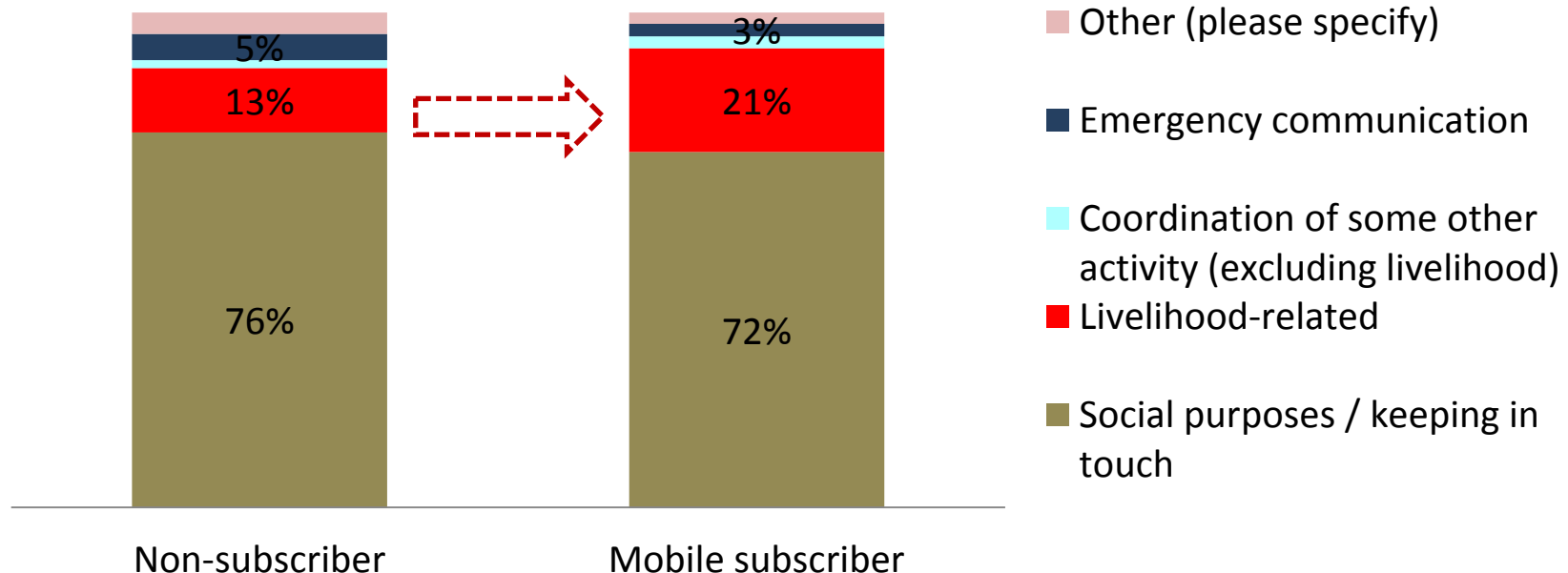
- Markets are better off
  - reduced price variation; reduced waste/increase in proportion of produce sold; increased prices; increased market participation
- Households are better off
  - Wage income increase; profits of home business increase; assets increase; expenditure increase
- Individuals are better off
  - Increase in employment
- All above from **people self-coordinating** themselves/their activities after getting mobile signal.
  - Not being pushed by governments/NGOs/INGOs

# What about urban? Impacts on micro, medium, small enterprises is positive but unimpressive

- A systematic review
  - “impact of business relevant information through networked devices on mobile internal efficiency and business growth of urban medium, small and micro enterprises”
- All published and grey literature in English language; Since the year 2000
  - 23,926 results from electronic search
  - 650 studies initial title abstract screening
  - 30 full screen/appraisal
- Result: Networked devices have a only a small positive effect on the growth of the MSMEs
  - Effect size 0.047 with a confidence interval (-0.513, 0.606)
- Result: Networked devices positive effect on internal efficiency of the MSMEs, but results are not stat. significant
  - Effect size of 0.321 with a confidence interval (-2.740, 3.382)
  - But NOT statistically significant at 5%

# Owning your own phone is important: owners more likely to have made livelihood related calls than non-owners. E.g. Myanmar

Purpose of the last call made or received (% of 15-65 year olds who have used a phone before)

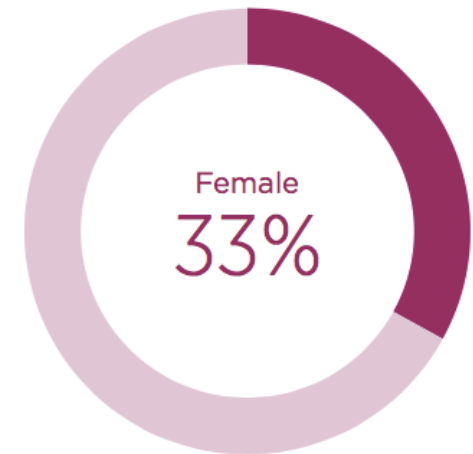
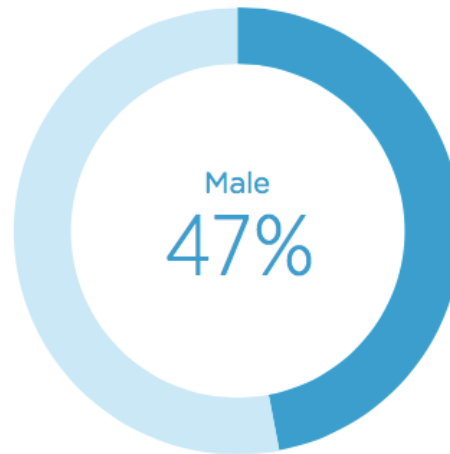
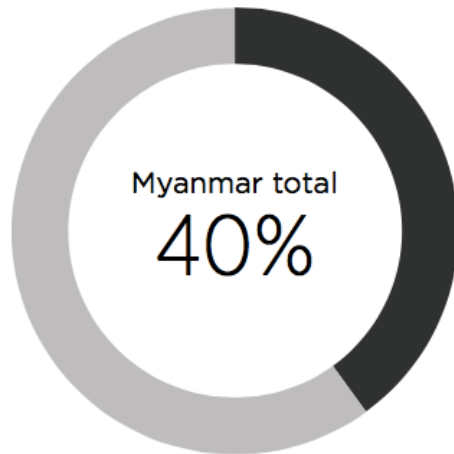


Q: Can you tell us the purpose of your call?

# But, there is a gender gap in mobile ownership. 39% gender gap in Myanmar

Mobile ownership

% of Myanmar's population aged 15-65



Base: Myanmar population 15-65 living in accessible areas  
Source: LIRNEasia Baseline Survey (2015)

Gender gap in  
ownership (%)

=

Male phone owners  
(% of male population)

-

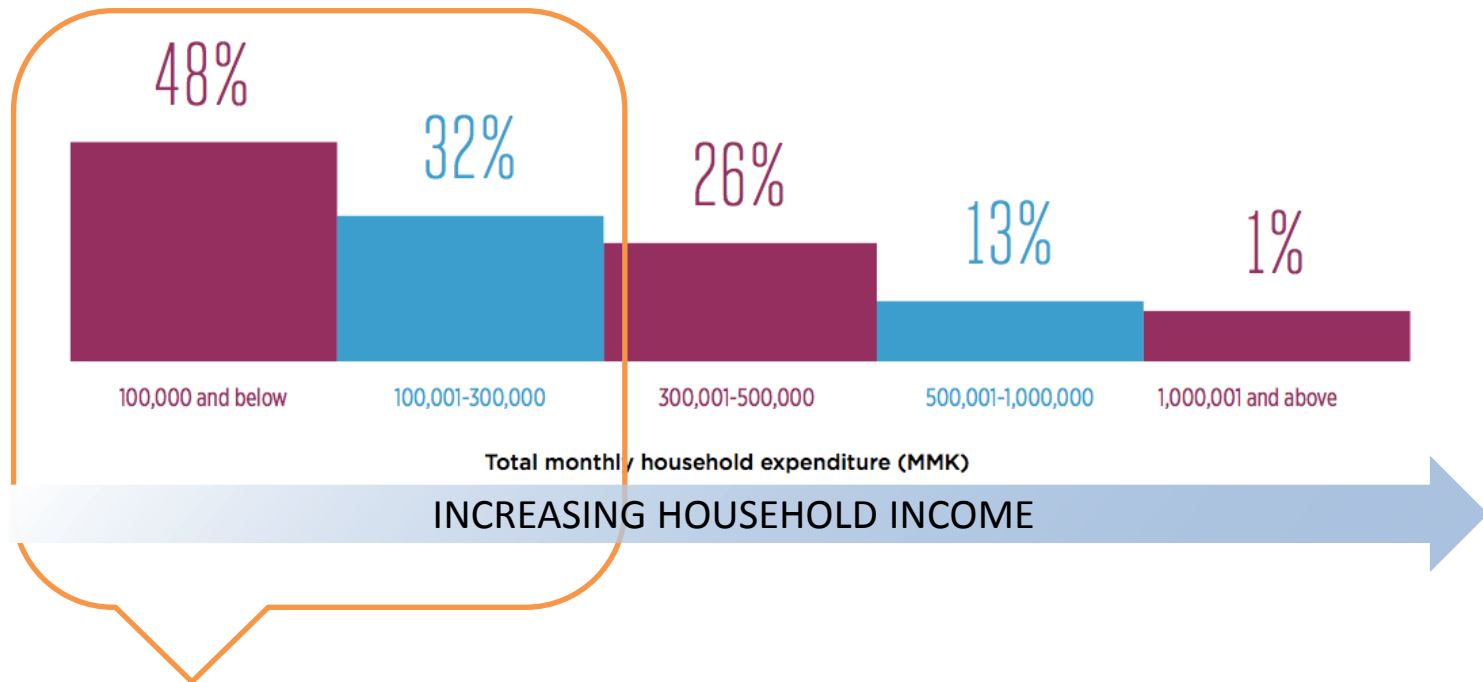
Female phone owners  
(% of male population)

Male phone owners  
(% of male population)



# The gender gap is even higher in the lower income groups

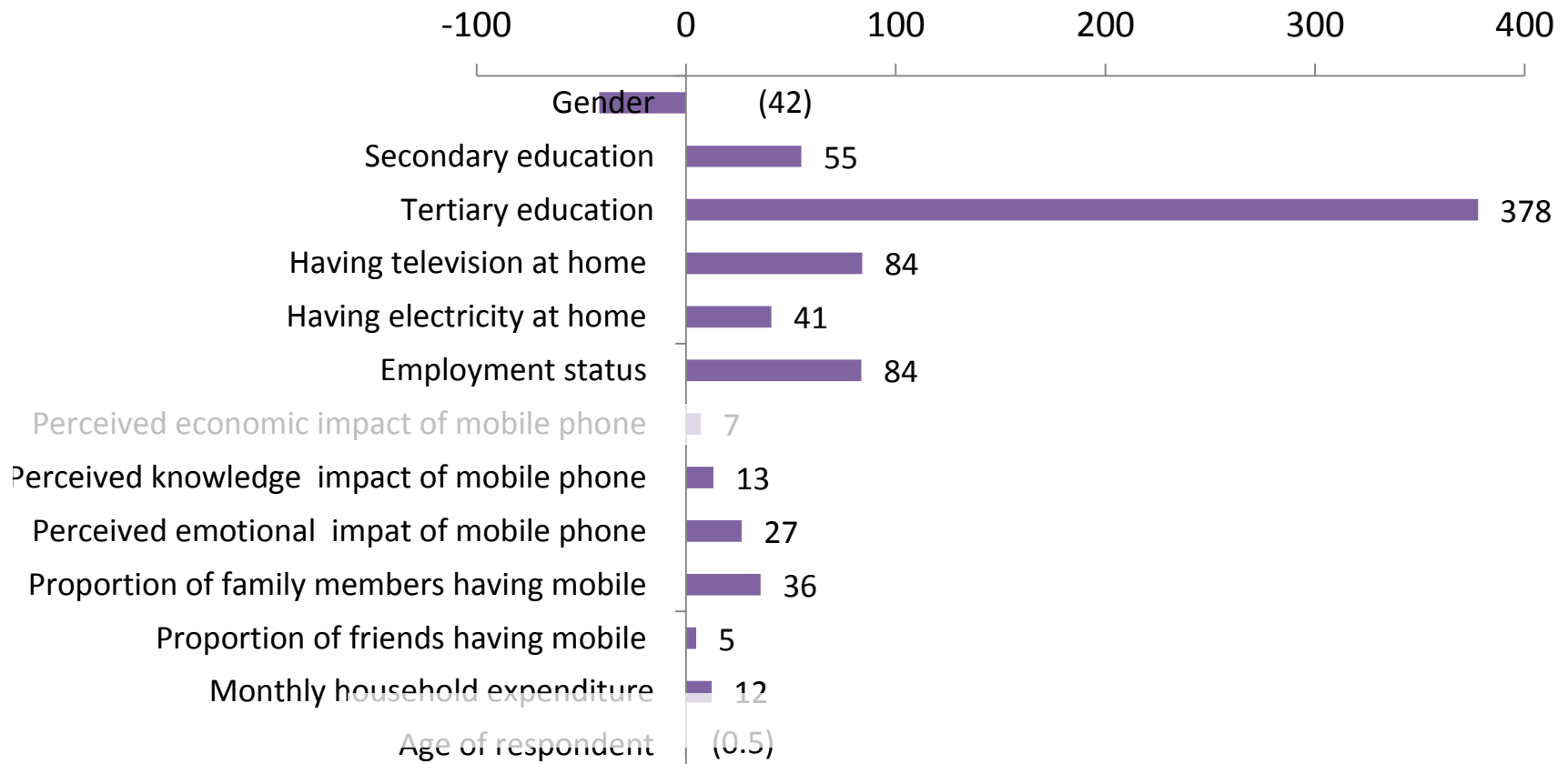
Gender gap (%) in mobile ownership in Myanmar



**BOP/Below MMK300,000: 34%**

# Being a woman reduces the likelihood of mobile ownership by 42%, after differences in other factors are taken into account

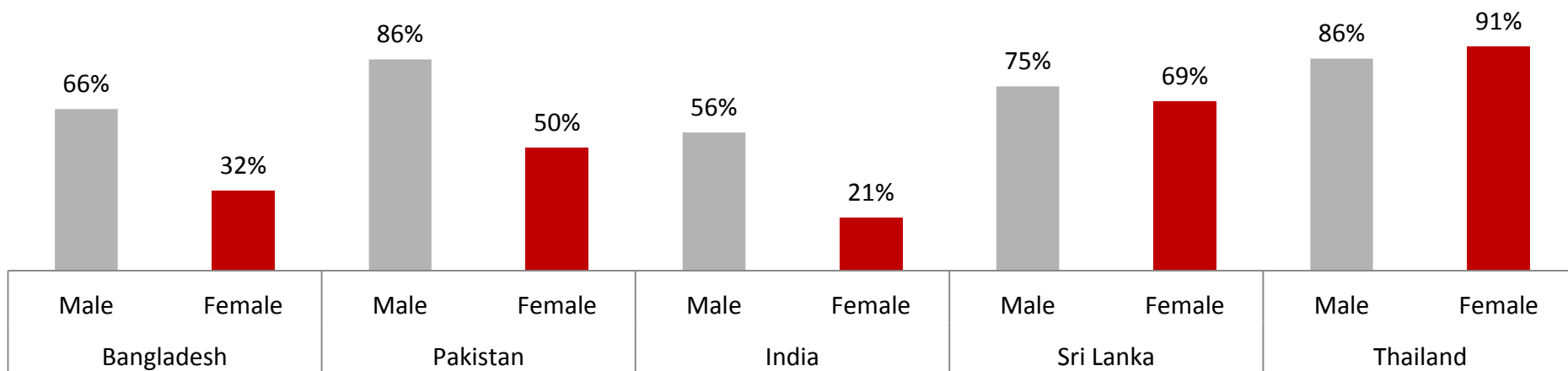
% Change in odds of mobile adoption (i.e. ownership) due to 1 unit increase in explanatory variable



# Across South Asia mobile gender divide exists

➤ A phone in the hands of the poor AND (poor) women is important

Mobile phone ownership (% of BOP teleusers)

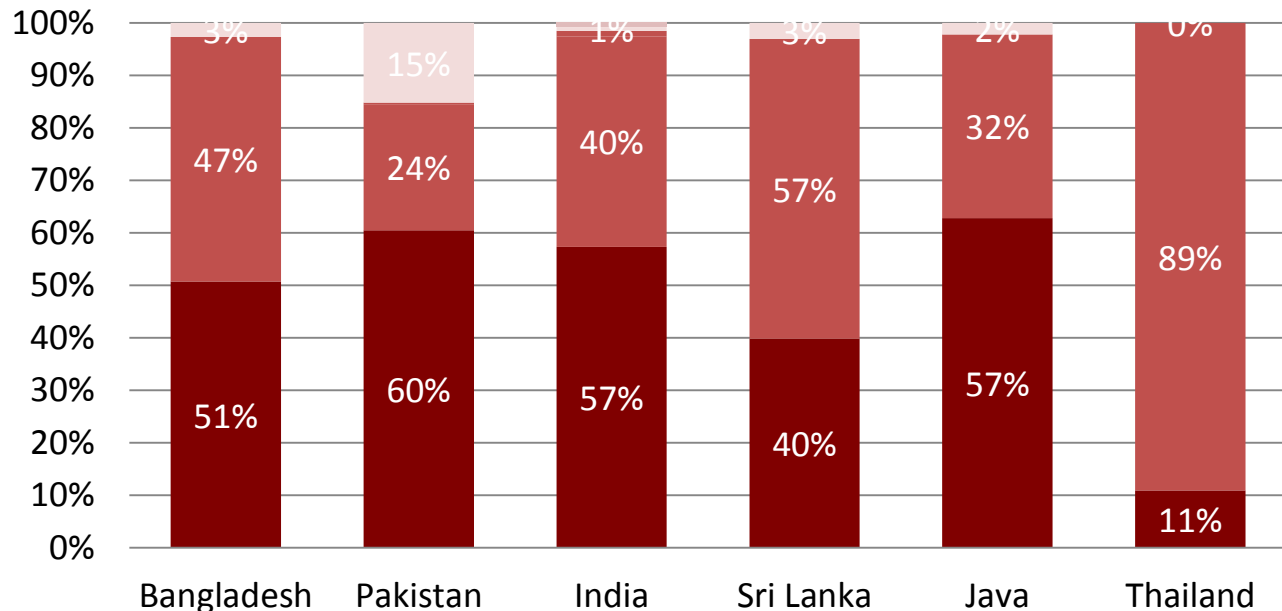


Ratio of mobile phone ownership (male : female)

Country	Ratio (male : female)
Bangladesh	2.03
Pakistan	1.72
India	2.63
Sri Lanka	1.09
Thailand	0.80

# Why don't BoP in emerging Asia not own a phone? in 2011, ~60% cited low affordability; ~40% didn't see the need

Main reason for not owning a phone (% BOP who do not own phone)



- Don't know to operator
- I am restricted from purchasing a phone by a particular pers
- It is too expensive for me to afford
- Can't get a connection where I live (service not available)
- I don't see a need to have my own phone

Q: Can you tell us main reason why you do not own a phone?

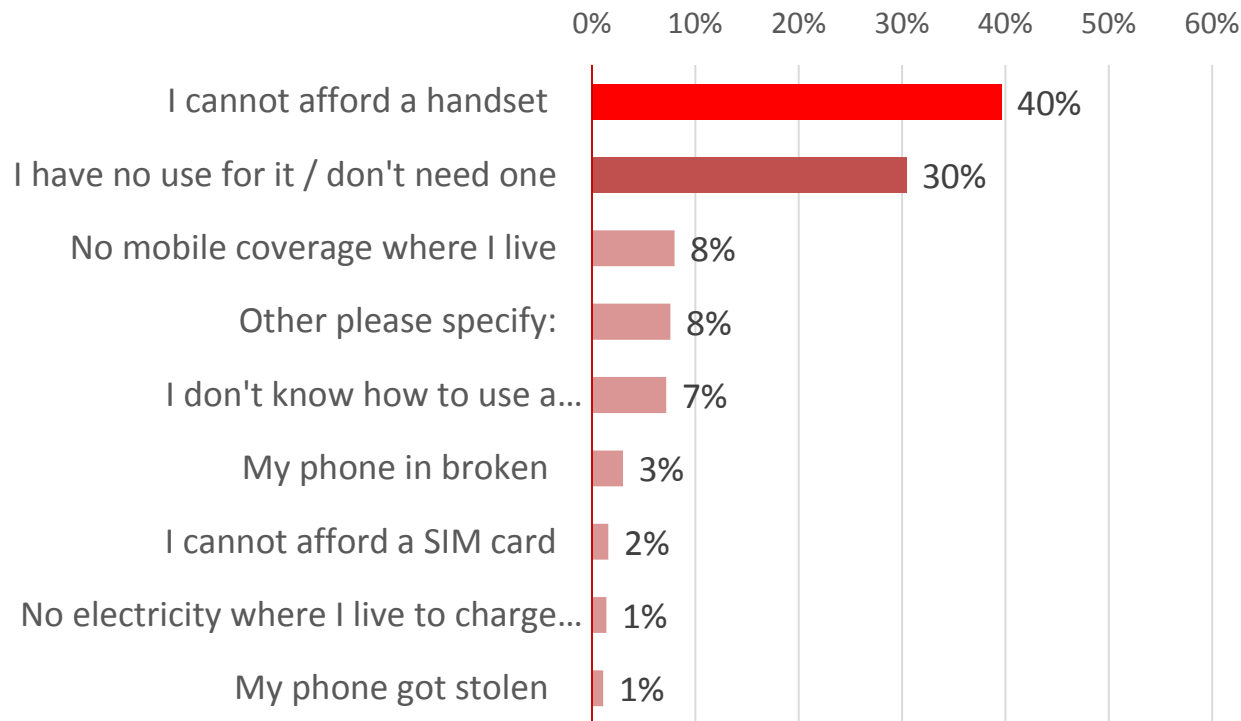
Base : Among BOP who don't own a phone

Source: LIRNEasia 2011 survey representative of Bottom of the Pyramid population in each country and of Java Island in Indonesia (that has ~ 70% of the population of Indonesia). Bottom of the Pyramid = BOP = those belonging to socio economic classification (SEC) D and E.

# Affordability and perceived lack of usefulness still problems: e.g. Myanmar, telecoms latest frontier in 2015

Myanmar

## Reasons for not owning a phone

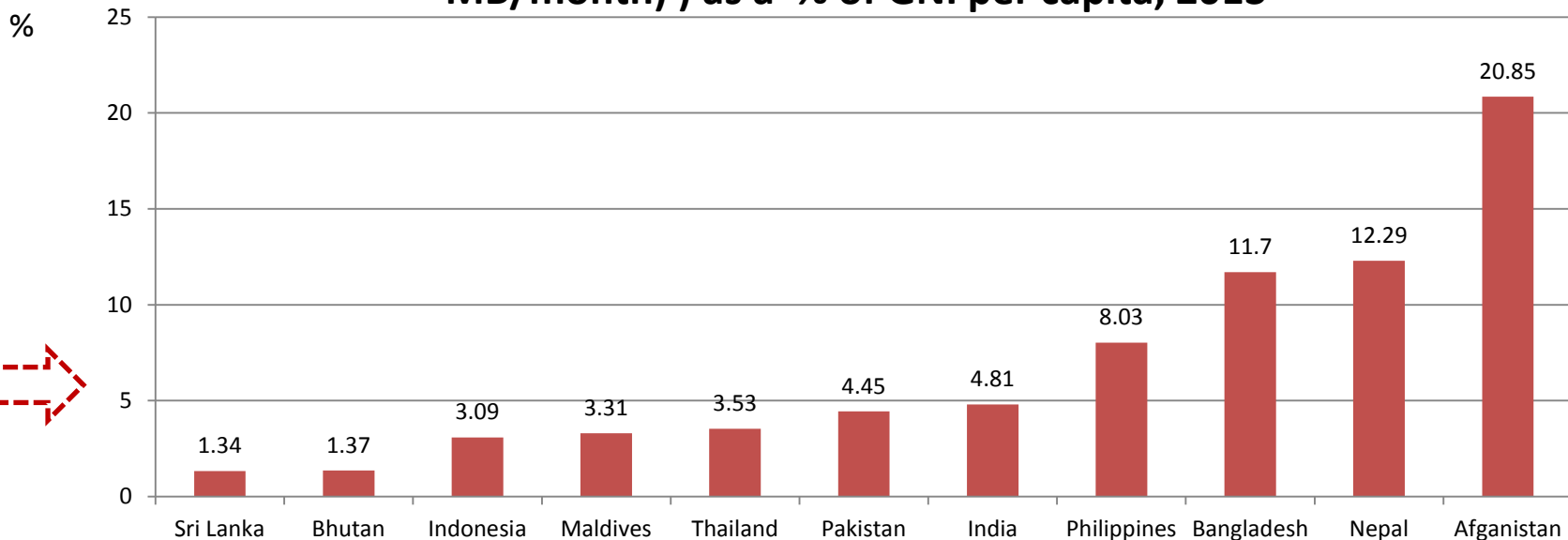


Q: Why don't you have a mobile phone connection? ?

Base : Respondents who don't own a phone

# Many Asian countries have entry-level broadband packages under 5% of income (meeting “<5%” target of the UN BB Commission)

Price of (Mobile-cellular + Prepaid handset-based mobile-broadband (500 MB/month) ) as a % of GNI per capita, 2013



➤ How much data is sufficient (for video, for example?)

Notes: 1) GNI per capita (Atlas method) in 2013 or latest available year adjusted with the international inflation rates used; 2) Mobile-cellular = price of standard basket of mobile monthly usage for 30 outgoing calls+ 100 SMS. It's based on prepaid prices. Largest operator's cheapest calling plan is used. Data volume allowance of a minimum of 500 MB for handset-based subscriptions is used. The selected plan is not the one with the cap closest to 500 MB, but include a minimum of 500 MB. This means, for example, if an operator offers a 300 MB and an 800 MB plan, the 800 MB plan or twice the 300 MB plan (if the package can be purchased twice for a monthly capacity of 600 MB) is selected for the 500 MB price basket. The cheapest option of these two is selected. The plans of a validity period of 30 days are chosen.

Source: ITU, 2013/ Telecom Regulatory Bodies

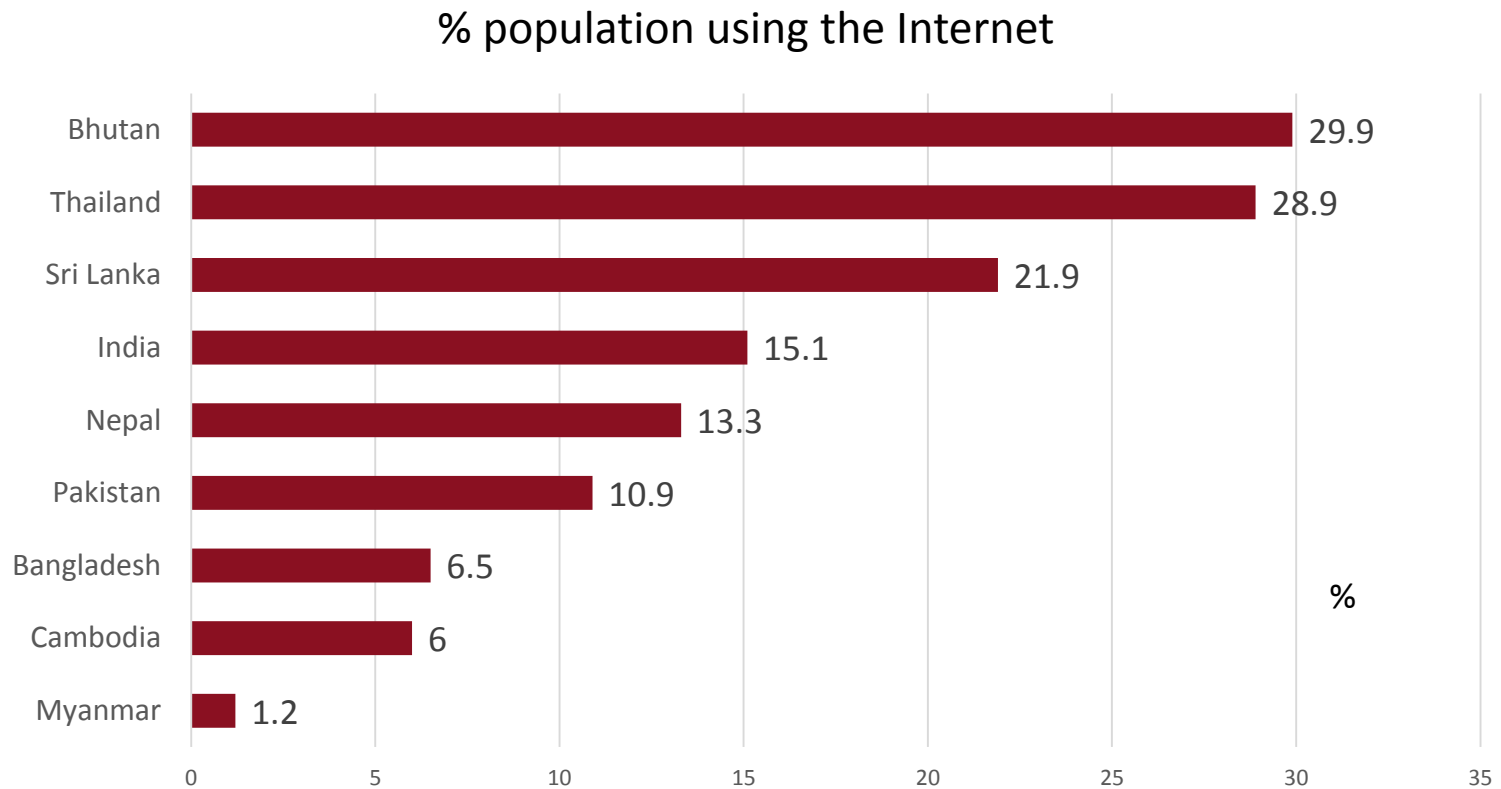
# At times, prices under 5% of income across ALL income deciles. E.g. Sri Lanka

Mobile broadband prices by income decile  
as a % of median income (2014), Sri Lanka

Income decile	Handset based (500 MB)		Computer based (1 GB)	
	Postpaid	Prepaid	Postpaid	Prepaid
1	0.2	0.3	0.3	0.3
2	0.3	0.5	0.6	0.5
3	0.4	0.7	0.8	0.7
4	0.5	0.8	1.0	0.8
5	0.6	1.0	1.2	1.0
6	0.7	1.2	1.4	1.2
7	0.8	1.4	1.6	1.4
8	1.0	1.7	2.0	1.7
9	1.4	2.4	2.8	2.4
10	2.7	4.7	5.5	4.7

Data sources: ITU (2015), HIES (2012/2013)

# Yet, most emerging Asia has sub-20% internet penetration

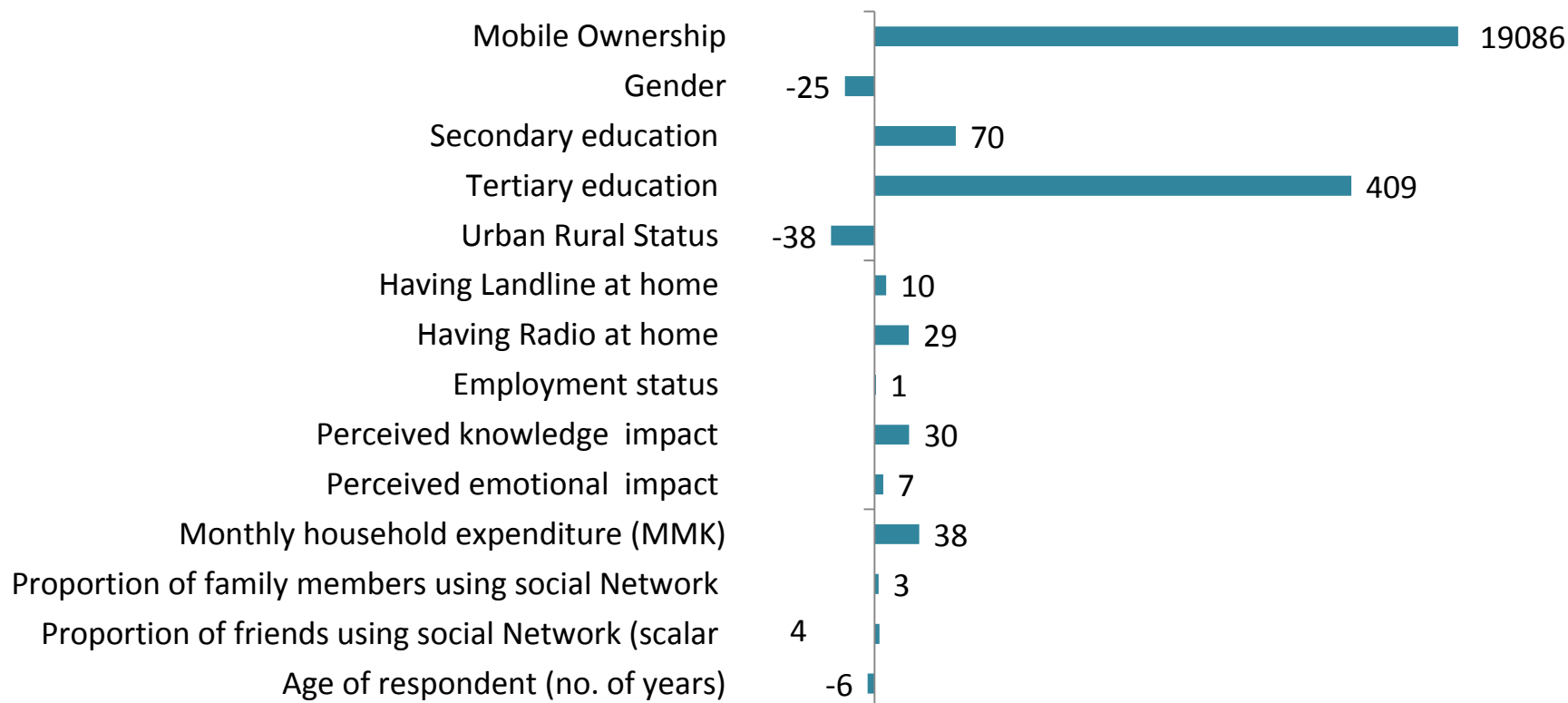


➤ Retail level affordability entry-level data/voice plans (+ falling phone) prices ALONE won't solve our problems



# Mobile ownership is a key driver influencing internet usage

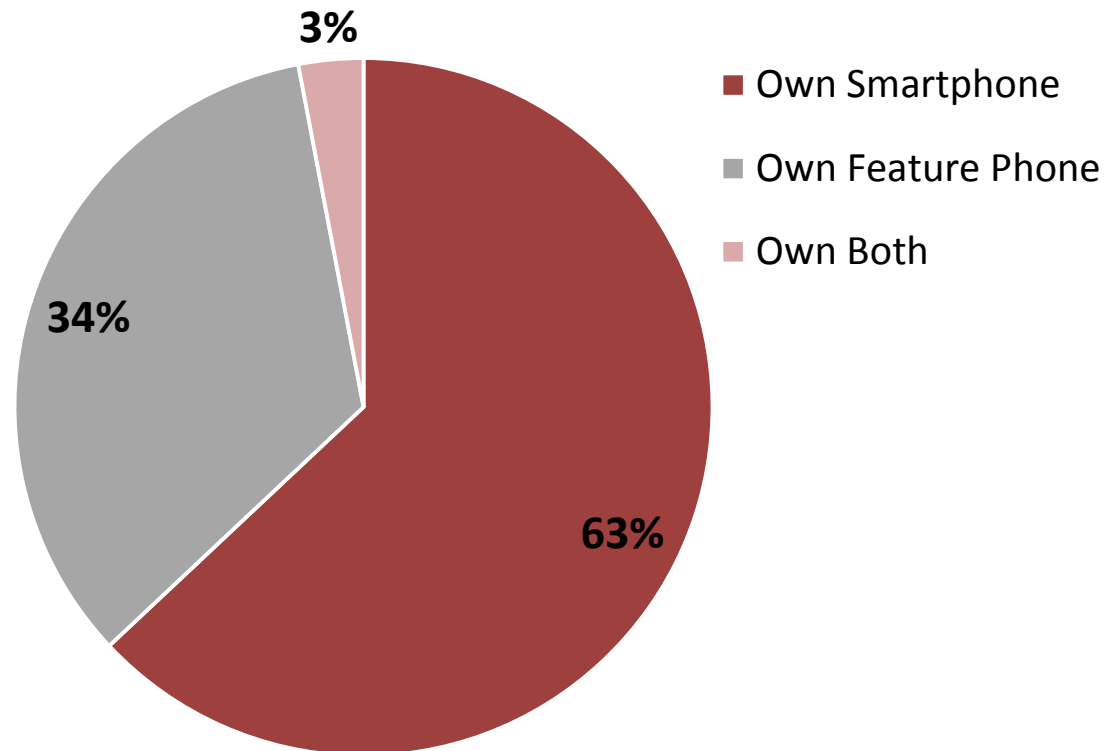
% change in odds of mobile use due to 1 unit increase in explanatory variable  
(output from Binary Logistic Regression). Myanmar



Source: LIRNEasia, 2016. Results above are from a binary logistic regression, using data from the 2015 nationally representative survey of ICT use in Myanmar that was conducted by LIRNEasia

# So is having a smartphone. Myanmar 44% daily active SIMs at time of survey. 63% of owners had a smart phone

Handset Type ( as % of Mobile Subscribers)



# Intervention = Mobile apps (everyone loves doing an app!)

## Result = no significant impacts

- Price and Climate information via SMS to farmers
    - Result: no significant changes between treated vs. untreated farmers users and non users) in sale price, income, crop loss
    - Results are generalizable (study has external validity)
  - SMS based Agri information to farmers
    - No significant impact on price dispersion, crop loss, price received by farmers etc.
    - Results are generalizable
  - Agri extension service via mobile phone
    - Result: very small but positive
    - BUT study has external validity problems & not results generalizable
  - ONLY ONE study results significant, positive impact. Agri information to farmers, observed during and after a period of SMS ban in India
  - Push vs. Pull: how
  - How to design good
    - Today, policy and
- Competing developmental needs reaching into the same, limited pool of money
- Can we afford investments in ICTs without reasonable guarantee of positive impacts on citizens?

# Message

- People in emerging Asia are calling and SMSing
- The economic impacts of these calls/SMSs are positive, when systematically analyzed
  - Through organic behavioral changes by users (not external push)
- People in emerging Asia are calling but they are not online
- Affordability (of data) necessary condition; but not sufficient one
  - Much of Asia has “affordable” data already
- Owning a smart phone key driver internet use
  - Women own fewer phones than men
- But skills and perceived usefulness are big gaps
  - Disproportionately for women
- No evidence (yet) that pushing mobile apps on people changes their lives
  - Need for better data
    - Most government we work with are unprepared
    - To assess the impact of ICTs and course correct
    - To measure most of the SDGs
- ICT4D must be embedded in D, overall
  - Else, Off line inequities move online

## **FURTHER DETAILS & DATA**

- [www.lirneasia.net](http://www.lirneasia.net) for Asia Survey Data. Or email helani[at]lirneasia.net

- [www.researchictafrica.net](http://www.researchictafrica.net) for Africa survey data