

# Social Influence in Mobile Phone Adoption

evidence from the BOP in emerging asia

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Mobile 2.0: Beyond Voice?

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# T@BOP series

how does the BOP interact with ICTs (telephones)

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- Since 2005
  - LIRNEasia
  - Almost 20,000 interviews in 6 emerging Asian countries; 2005, 2006, 2008-09
  - Funded by IDRC
    - 2008-09: Contributions from Telenor

# T@BOP3

representative BOP sample<sub>2</sub>

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## □ BOP

- SEC groups D+E; age 15-60
- Maps well with < USD 2/day

## □ 2008-09

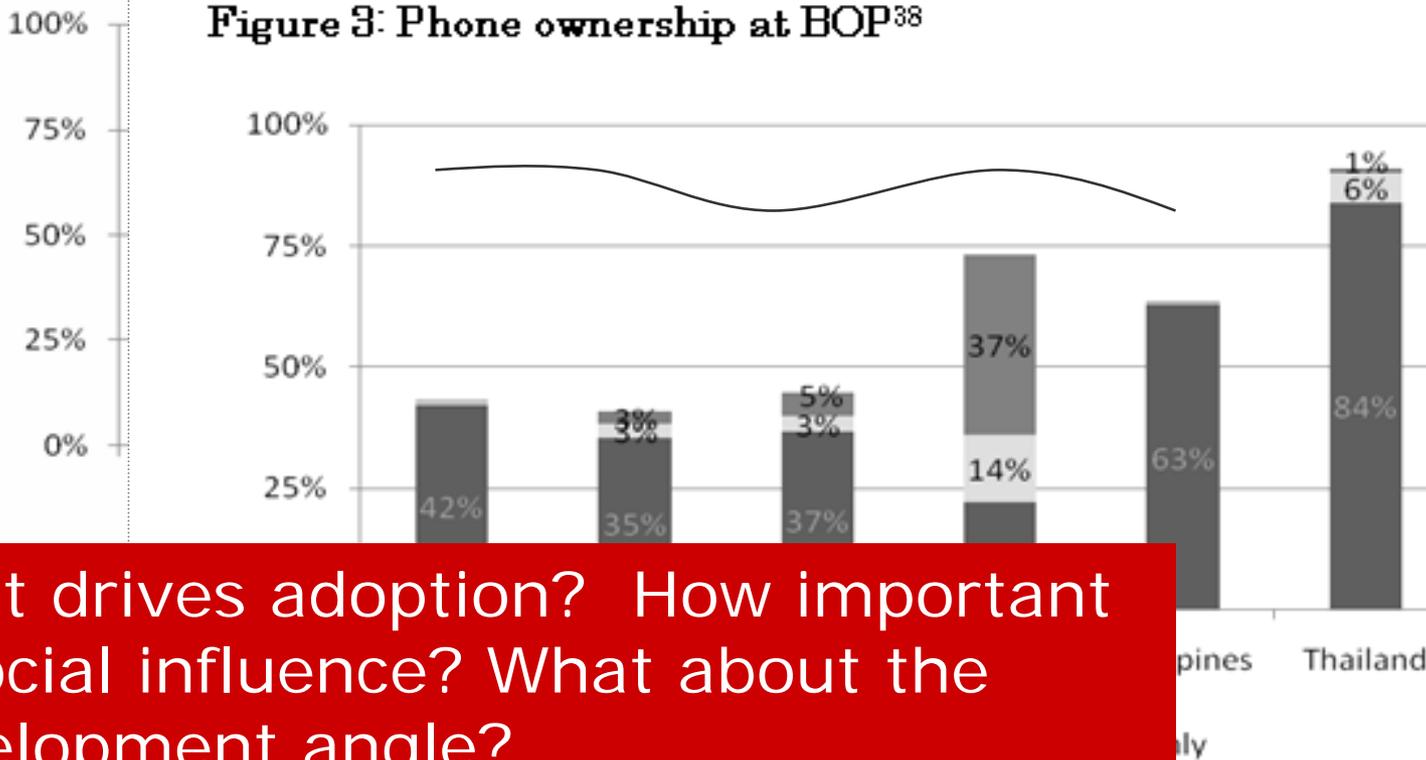
- QN: Sep. 2008; 9,950 BOP representative sample; 50% 1-week diary
  - BN 2,050; PK 1,814; IN 3,152; LK 924; PH 800; TH 800
  - Fieldwork → The Nielsen Company
- QL: Feb-Mar 2009; FGD, UME, DI
  - With CKS, Bangalore

# Background to the findings

'almost universal' access...<sup>2</sup>

Figure 1: Phone use by the BOP<sup>7</sup>

...low but growing adoption



What drives adoption? How important is social influence? What about the development angle?

# Gist

social influence is key in mobile adoption

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- Clear evidence that social influence is key in mobile phone adoption at BOP in the selected emerging Asian countries

# Theoretical framework

long history; several angles<sub>1</sub>

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## □ Social influence

- Original 'subjective norm' [TRA; Fishbein and Ajzen, 1975 → ... → Venkatesh, 2003 → ... → van Biljon and Kotze, 2008 'human nature' + 'cultural' = social influence

- Social pressure exerted by others

- Social coercion, imitation and normalization [Chen and Sutano, 2007]

## □ Perceived [social] benefit

- Extension of TAM [Davis et al., 1989]

- Social + economic benefit

- T@BOP2; 'blurring lives and livelihoods' Donner, 2009

# Empirical work

## social influence<sub>1</sub>

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- Rice and Katz, 2003; 1,800 US sample
  - Logistic regression model digital divides in phone and Internet use
    - owner vs. non-owner divide, veteran vs. recent divide and continuing vs. dropout divide.
  - **Social influence [implied]**
    - “General social involvement” → belonging to religious, leisure, community organizations
- Chabossou et al., 2009; 22,000 African sample
  - Probit model to analyse factors that contribute to the probability of mobile adoption
  - **Social influence [implied]**
    - Belonging to ‘any’ social organization

# Innovation → social influence

## measuring social pressure

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### Passive

- Belonging to social group

### Active

- How many in closest network of 5 people own a mobile phone
- 0, 1, 2, 3, 4 or all 5
- If more people own a phone, then the pressure to own will be more
- Social pressure argument of Chen and Sutano, 2007; Von Bijon & Kotze, 2008; Mark & Poltrok, 2001; de Vos et al., 2004 etc.

# Characteristics of adopters

strong link with adoption among network<sub>2</sub>

Table 5: Mobile adopters vs. non-adopters

	Mobile adopter, %	Non adopter, %
Overall	45.9	54.1
N	4,382	5,158
No. of top 5 contacts with mobiles (Chi-Square=801.52)***		
0	0.9	2.7
1	6.4	11.9
2	12.2	23.5
3	15.3	24.0
4	14.7	13.1
5	50.5	24.8
N	4,381	5,155

# Likelihood of adoption

increases with more in network adopting

Table 6: Logit model results

Variable	Coefficient	Odds Ratio	P-value
Number of top five contacts having a mobile phone	0.32	1.37	0.00

- Odds ratio
  - [prob. of adoption] / [prob. of not adoption]
- Odds of adoption increases by 37%; i.e., 1.37 to 1, with each member in network adopting
- Odds of adoption is 4.86 when none of the members adopting to all members adopting

# Innovation → social benefit

## measuring social benefit

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### Aggregated

- Benefit from adoption or usage
- Early work on TAM extended by many; Venkatesh et al., 2003; VB&K, 2008 etc.

### Disaggregated

- Emergency-related benefits
- Social benefits
- Economic benefits
  - de Silva & Zainudeen, 2007

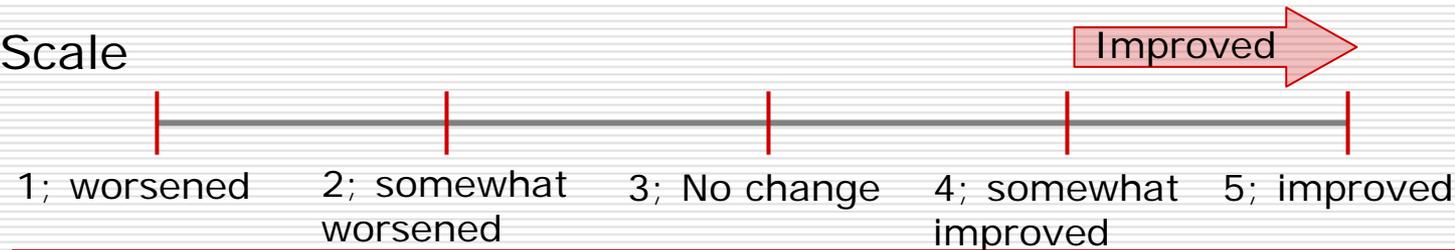
# Benefit categories

## emergency, social and economic

**Table 4: Perceived Benefits**

Category	Disaggregated benefit aspects
Emergency	<ol style="list-style-type: none"> <li>1. Ability to act in an emergency</li> <li>2. Ability to contact others in an emergency</li> </ol>
Social	<ol style="list-style-type: none"> <li>1. Relationships with family and friends</li> <li>2. Social status/ recognition in the community</li> </ol>
Economic	<ol style="list-style-type: none"> <li>1. Ability to make more money (generally, and not via sale of talk time)</li> <li>2. Ability to make more money through the sale of calls</li> <li>3. Ability to find out about employment/work opportunities</li> <li>4. Ability to access price or market information</li> <li>5. Ability to save money</li> <li>6. Ability to save on travel cost</li> <li>7. The efficiency of your day to day work</li> </ol>

Scale



# Characteristics of adopters

benefits appreciated either way<sub>3</sub>

**Table 5: Mobile adopters vs. non-adopters**

	Mobile adopter. %	Non adopter. %
<b>Emergency Perceived Benefit Index (PBI) (Chi-Square=20.49)***</b>		
0	2.5	3.0
1	9.9	12.6
2	87.6	84.3
N	4,318	4,800
<b>Social PBI (Chi-Square=176.15)***</b>		
0	4.0	6.2
1	30.9	46.2
2	65.1	51.3
N	4,230	4,720
<b>Economic PBI (Chi-Square=197.76)***</b>		
1	10.1	18.1
2	27.6	33.1
3	30.8	23.4
4	31.5	25.4
N	4,256	4,693

# Likelihood of adoption

Increases with greater perceived benefit

**Table 6: Logit model results**

Variable	Coefficient	Odds Ratio	P-value
Emergency Perceived Benefits Index (PBI)	0.20	1.22	0.07
Social PBI	0.16	1.18	0.01
Economic PBI	0.10	1.10	0.00

- Perceived increase in social benefit has **significant positive impact** on adoption
  - Linked to emergency benefit
  - Linked to economic benefit

# Mediating factors in adoption

reiterating previous findings for the most part

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## □ Demographics

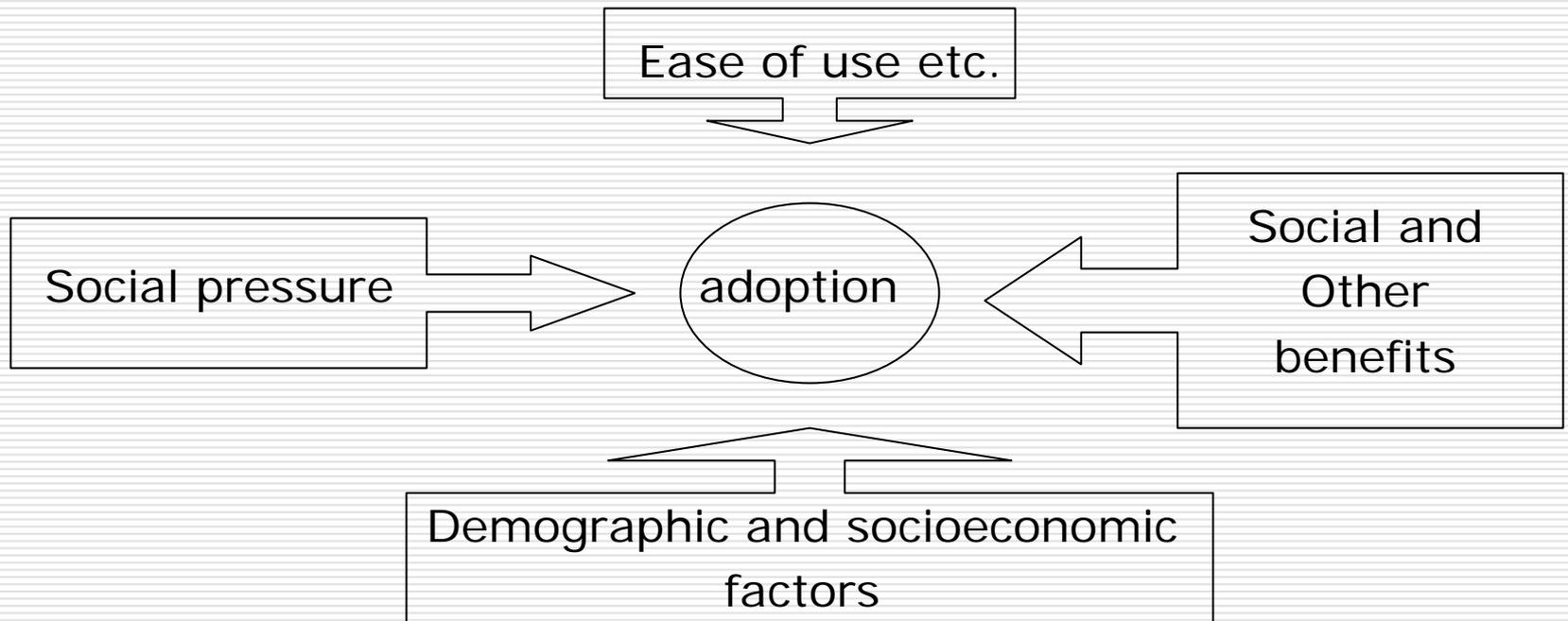
- Age; younger → higher odds
- Gender; male → higher
- Education; more → higher
- Location → not necessarily urban [walk-time proxy] is higher

## □ Socioeconomic factors

- Income; higher → higher odds
- TV/radio in household → higher

# Adoption diagram

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# Country-wise breakdown

## network; socio-economic benefits

**Table 10: Country wise analysis of mobile adoption model**

	BN	PK	IN	LK	PH	TH
Nagelkerke R-square	0.32	0.43	0.28	0.31	0.26	0.24
Age <sup>2</sup>	(--)	(-)	(--)	(--)	(--)	.
Gender	(--)	(--)	(--)	.	.	.
Ln (monthly personal income)	(++)	(++)	(++)	(++)	(++)	(++)
Primary Education	(++)	.	.	.	.	(-)
Secondary Education	(++)	.	(++)	.	.	.
Tertiary Education	(++)	(+)	(++)	.	.	(+)
Number of top five contacts having a mobile phone	(++)	(++)	(++)	(++)	(++)	(++)
Emergency PBI	.	(++)	.	.	.	.
Social PBI	.	(++)	.	(++)	.	.
Economical PBI	(++)	.	(++)	(++)	.	(++)
Access to a fixed phone	.	(+)	(--)	(--)	.	.
Walk time to the nearest town	.	(--)	(--)	.	.	(--)
Access to electricity	.	.	(++)	.	.	.
Television in household	(++)	(++)	(++)	.	(++)	.
Radio in household	(++)	.	(++)	.	.	.
Constant	(--)	(--)	(--)	.	.	.

# Social pressure

## qualitative confirmations<sub>1</sub>

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- “Interestingly, these Southeast Asian female respondents had bought mobile phones **because everybody around them owned a mobile phone and they felt pressurized to buy one themselves...**”
- In some South Asian countries “...although youngsters [20-25 age group] may feel the pressure more, **they could not do anything even if their social circles derided them if they could not afford to have a phone**; the moment they could afford to purchase a mobile they would. However, respondents in these countries **did feel some shame but they had no other option...**”

# Social impact and benefit

## qualitative confirmations<sup>1</sup>

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- “Saleem<sup>[1]</sup> and Saeeda Afeez in Bangladesh who are in their late forties have both activated the FnF function in all their SIMs. Having 5 SIMs between 2 of them, they can now call 15 people at 60 paisa per minute instead of 1 taka per minute.”
- “Trust and reliability in people who are close to you along with their good intentions for your business are considered to be very significant factors in leveraging social networks for work related reasons.”

<sup>[1]</sup> Names have been changed to protect privacy of respondents.

# Conclusions<sub>2</sub>

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- Social pressure significant
  - Unique moment in time; closest 5 with phones still ranging from 0-5
- Socio-economic benefits significant
  - “Blurring” of lives and livelihoods
- Getting phones not just because of the (economic) development story; but very much because of the social story