

Regional Variations of Banking Services and Poverty Reduction: Evidence from Sub-district Level Data of Bangladesh

Kazi Iqbal, BIDS
Paritosh K. Roy, ISRT
Shamsul Alam, GED



**BIDS RESEARCH
ALMANAC**

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Motivation

- ▶ Cross country evidences → financial development, growth, income inequality and poverty (Beck et al., 2000; Beck et al., 2004, Levine, 2005).
- ▶ Impact of financial inclusion on poverty reduction → both growth (60%) and income inequality (40%) channels
- ▶ The growth effect of financial development becomes pro-poor → financial system is inclusive
- ▶ Less understood → within country variations → spatial aspect
→ policy and customized interventions
- ▶ Country specific study remains incomplete → without **spatial aspect** of financial inclusion
- ▶ Aggregate data mask regional reality



This study

- Unique administrative data of banking variables at the sub-district level
- Two aspects of financial inclusion:
 - ➔ outreach (branch density, number of accounts)
 - ➔ use (deposit and credit)

Two issues:

- ➔ Uncover regional variations of banking variables by creating maps at the sub-district level
- ➔ Relate regional variations of banking services to regional poverty



Data

- ▶ Banking sector data

The Statistical Division of the Bangladesh Bank: 2008-2010 and 2015

- ▶ Poverty data

Sub-district level poverty data of 2010 generated by WFP-BBS

- ▶ Population data

Age-group wise total population for all sub-districts from the Population Census 2011 → adult person in a sub-district

- ▶ Data on other control variables

Sub-district level rural roads, cropping intensity, river erosion → District Statistics 2011, BBS

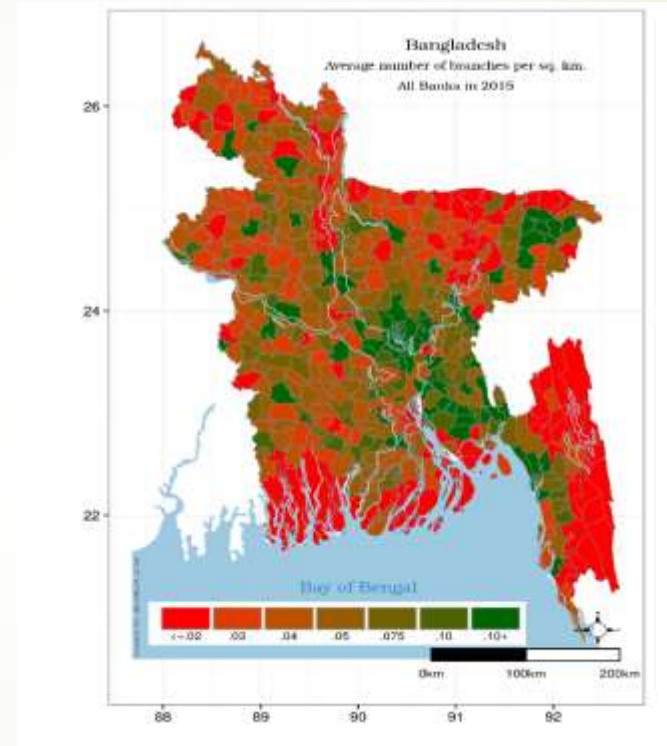
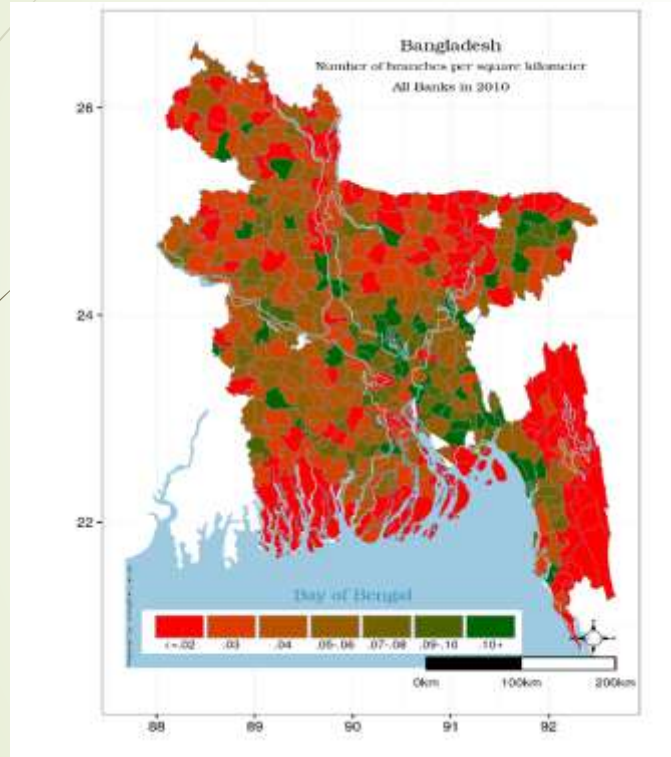
- ▶ Top ten remittance recipient districts → HIES 2010

Banking services at sub-district level

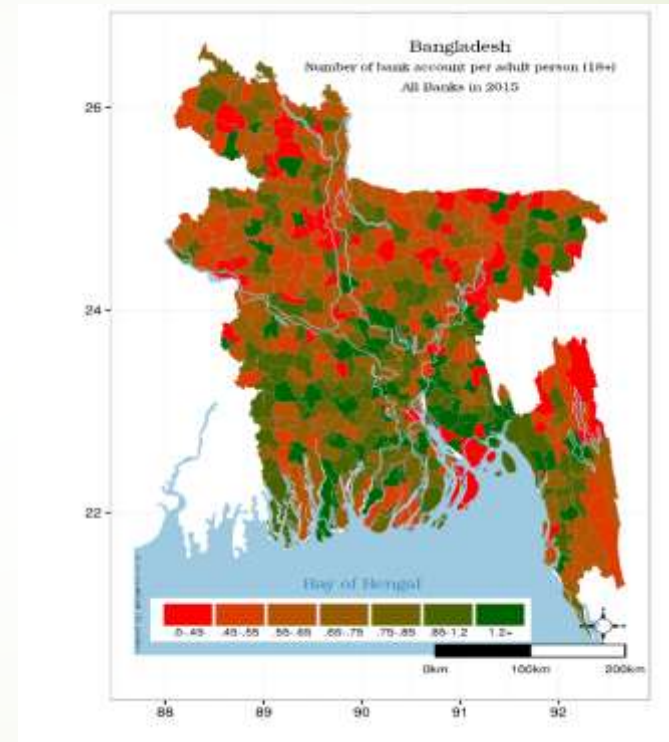
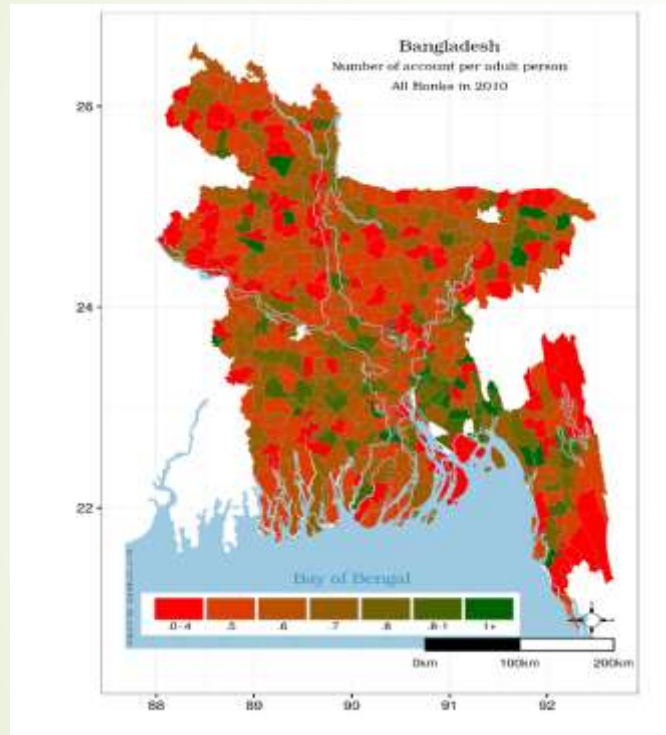
Banking variable per sub-district	Full sample (country)		Rural sample	
	2010	2015	2010	2015
Average number of branches per sq. km.	0.72	0.86	0.04	0.06
Number of bank account per adult person	0.69	1.04	0.53	0.72
Amount of bank deposit per adult person (thousand)	45	118	9	22
Amount of bank credit per adult person (thousand)	34	85	4	8

- Rural areas saw substantial growth of branches and bank accounts
- Growth of deposit is higher than that of credit in rural area

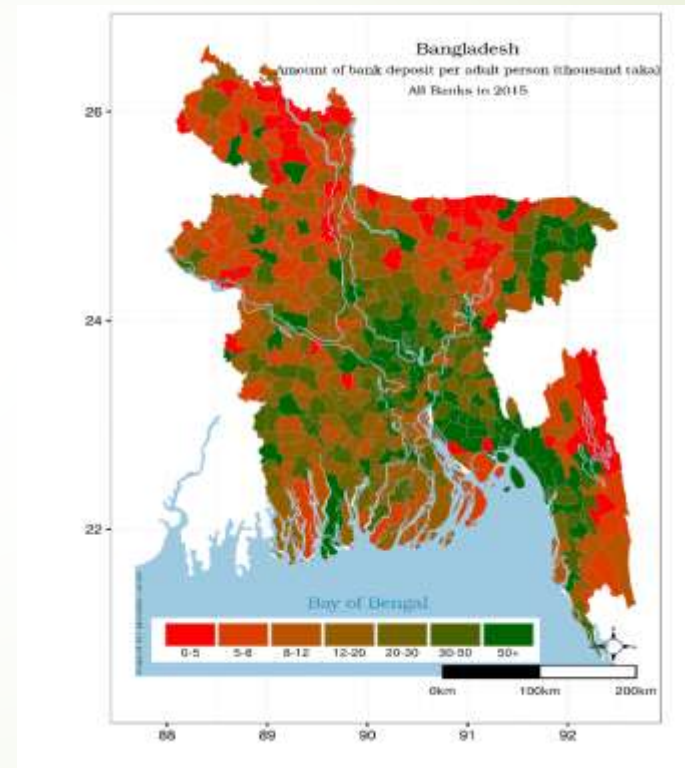
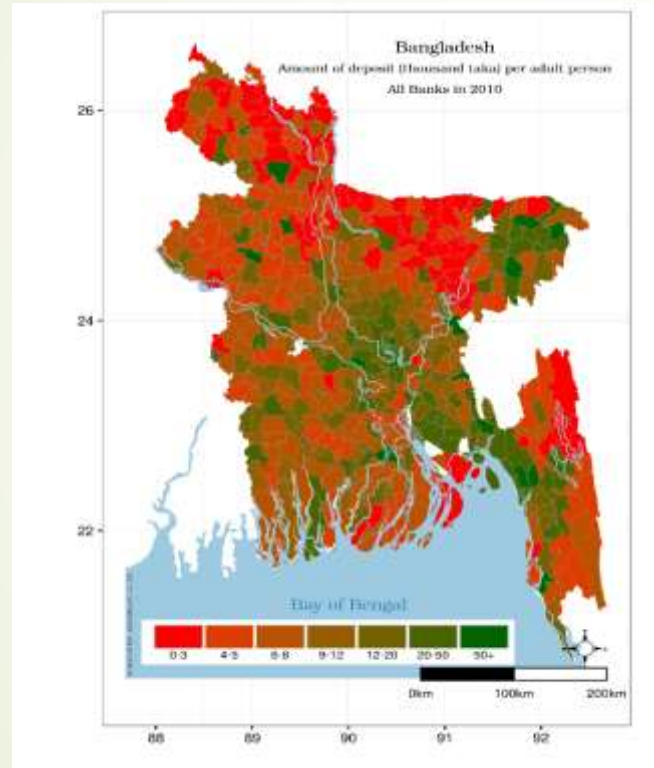
Banking maps: Number of branch per sq. kilometer (2010 and 2015)



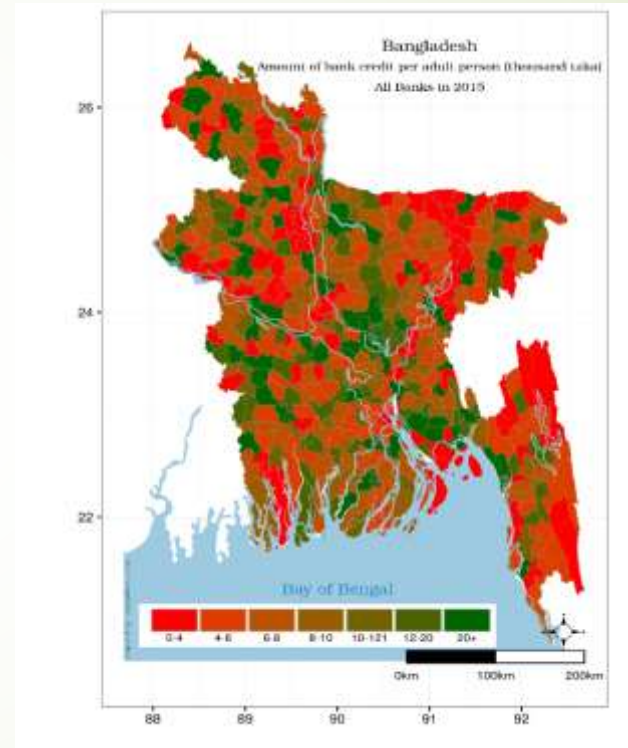
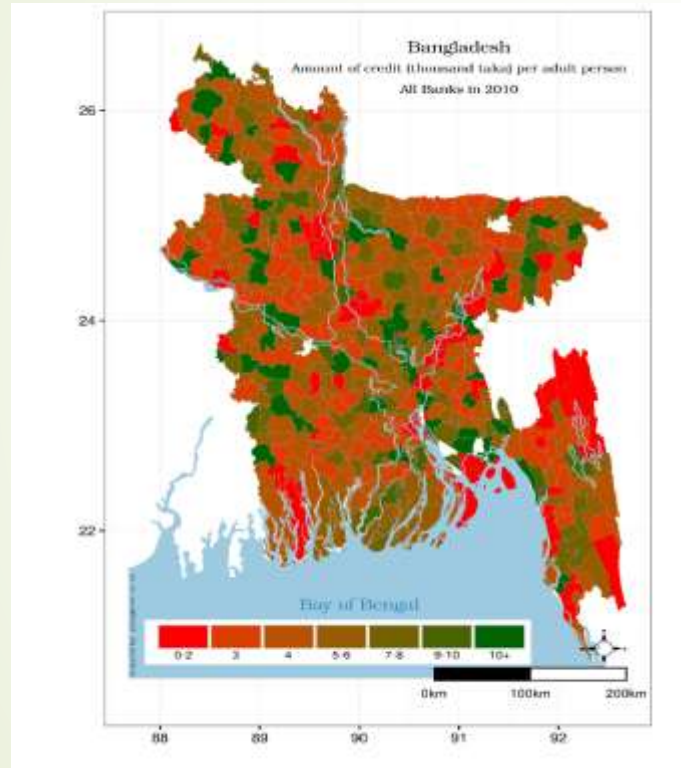
Banking maps: Number of account per adult (2010 and 2015)



Banking maps: Amount of deposit (000) per adult (2010 and 2015)



Banking maps: Amount of credit (000) per adult (2010 and 2015)

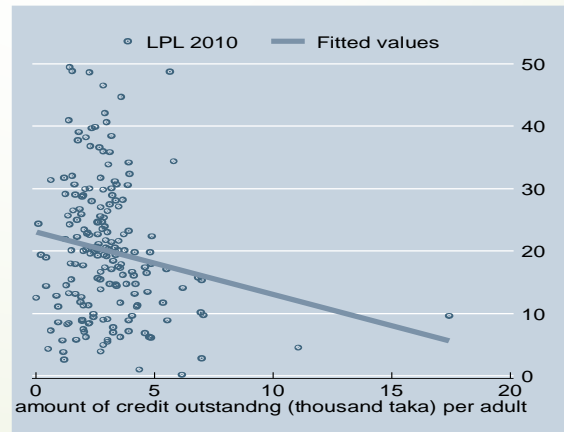
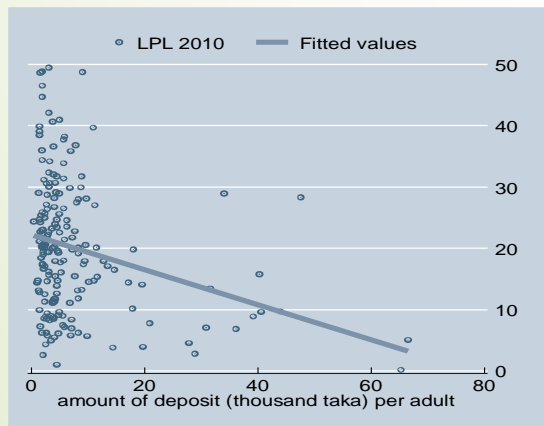
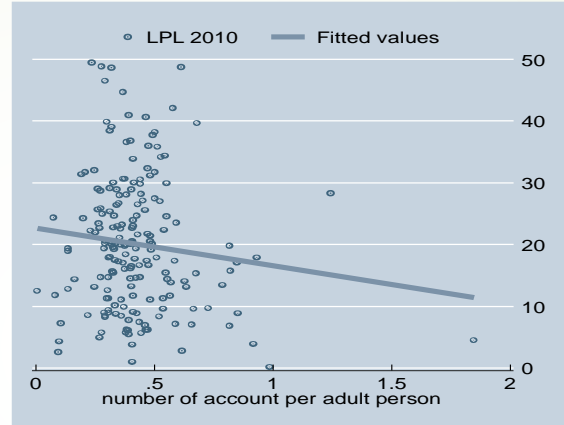
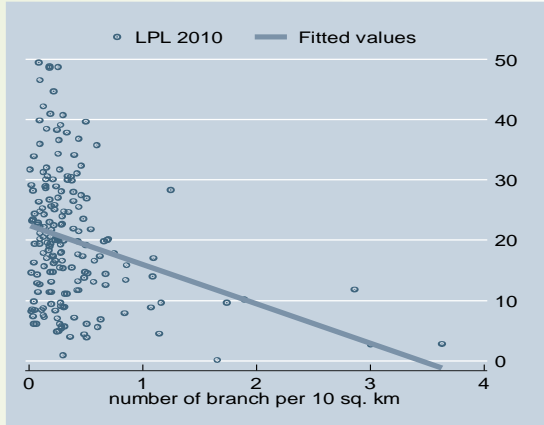




Lessons learnt from the maps

- ▶ Maps of banking variables, particularly, number of accounts per adult and amount of deposit per adult match very well with poverty maps
 - Complement survey based poverty maps
- ▶ Some exceptions:
 - Some poverty pockets are not necessarily the areas with very low banking services.
 - High banking density is surrounded by very low penetration
 - Interesting cases → rapid appraisal
- ▶ Growth of bank deposit and number of accounts are higher for southern part (south-west) of the country → not credit

Association between banking services and poverty (Lower poverty line)



Regression model

➤ $Poverty_i = \beta_0 + \beta_1 \cdot Banking\ service_i + \beta_2 \cdot Control_i + u_i \dots (I)$

- Households may go to neighboring sub-districts for banking

$$x_k^n = \frac{\sum_i^n X_i + X_k}{n + 1}$$

➤ $Poverty_k = \beta_0 + \beta_1 \cdot Banking\ service_k^n + \beta_2 \cdot Control_k + u_k (II)$

- 'right' controls:

Level of development → roads, remittance, cropping intensity, river erosion

Regression results

	Upper Poverty Line				Lower Poverty Line			
	Full sample	Rural	sample		Full sample	Rural	Sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bank branch per 10 square km.	-0.11***	-7.49***	-12.79***	-9.57***	-0.07***	-6.53***	-8.38***	-6.65**
	(0.023)	(1.700)	(3.329)	(3.635)	(0.015)	(1.055)	(2.285)	(2.742)
Number of account per adult	-4.83***	-4.42***	-4.42***	-4.28***	-2.96***	-3.02***	-3.22***	-3.14***
	(1.045)	(1.262)	(1.438)	(1.185)	(0.660)	(0.841)	(0.997)	(0.858)
Amount of deposit (000) per adult person	-0.02***	-0.45***	-0.43***	-0.38***	-0.01***	-0.29***	-0.27***	-0.26***
	(0.007)	(0.081)	(0.089)	(0.102)	(0.004)	(0.059)	(0.063)	(0.073)
Amount of credit (000) per adult person	-0.01**	-0.44	-0.45	-0.44	-0.01**	-0.33	-0.35	-0.35
	(0.005)	(0.342)	(0.354)	(0.351)	(0.003)	(0.245)	(0.258)	(0.254)
Observations	535	186	174	172	535	186	174	172



Conclusion and policy implications

- ▶ Access to banking services - deposit services has strong negative association with poverty
- ▶ Experimental evidences → having a bank account itself can promote saving and income
- ▶ Is it a remittance story? → not really ! We net out the direct effect of remittance

Policy

- ▶ Maps help identify the lagging regions
- ▶ Strong association suggests that anti-poverty program must include 'financial inclusion'
- ▶ HIES 2010 is representative at divisional level → regional targeting is a problem → administrative data