

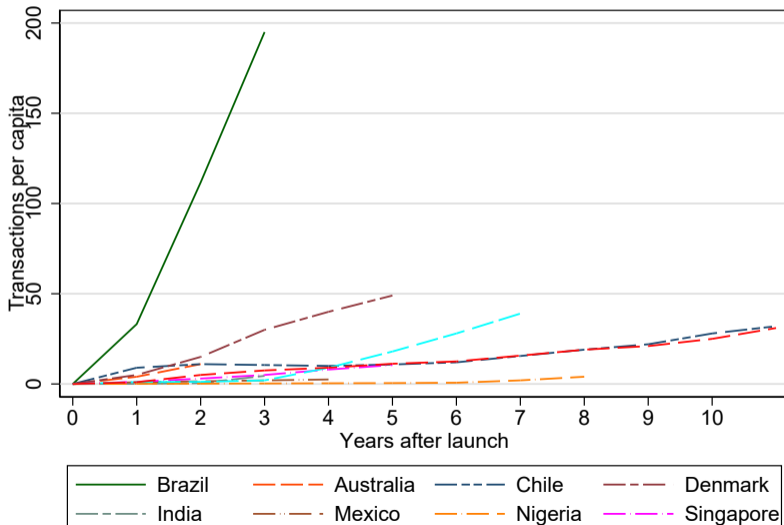
# Demographics and Technology Diffusion: Evidence from Mobile Payments

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# Development of payment systems



# Background on UPI

- Instant payment system developed in India
- Fast adoption and positive effects on economic growth
- More successful than many other IPS around the world (including in the US)

## This paper

- Does age structure matter for UPI adoption?
  - Yes, older people are less likely to use UPI
- Are there broader consequences?
  - Yes, merchants adopt UPI less in areas with older people

## Paper's contribution

- Determinants of IPS adoption are not well understood
  - Including how demographics influence the adoption
- User-level data allows to convincingly answer the question
- Interesting broad consequences
- Can help with development of payment systems in the US

## Overview of the comments

- Very convincing paper
- We learn a lot from it even without identification discussions
- Main comments:
  1. External validity
  2. Impact of urbanization
  3. Merchants' willingness to accept UPI

## Comment 1: external validity

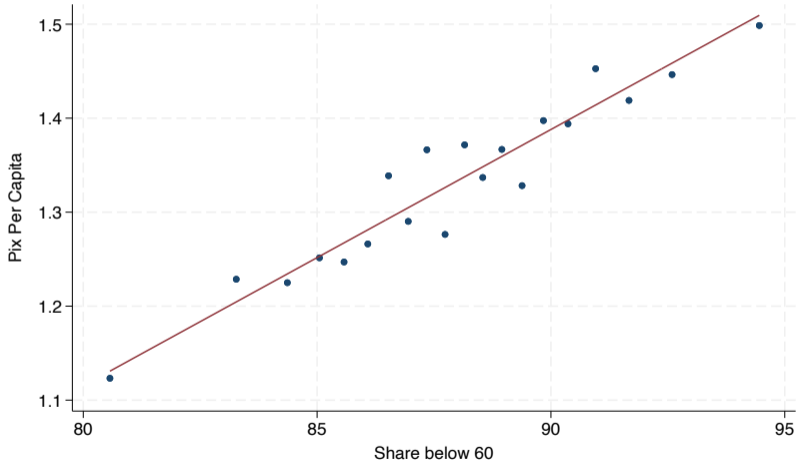
- The paper focuses on India
- Can the statements be applied to other payment systems?
- Authors can provide more non-causal evidence

## Comment 1: external validity

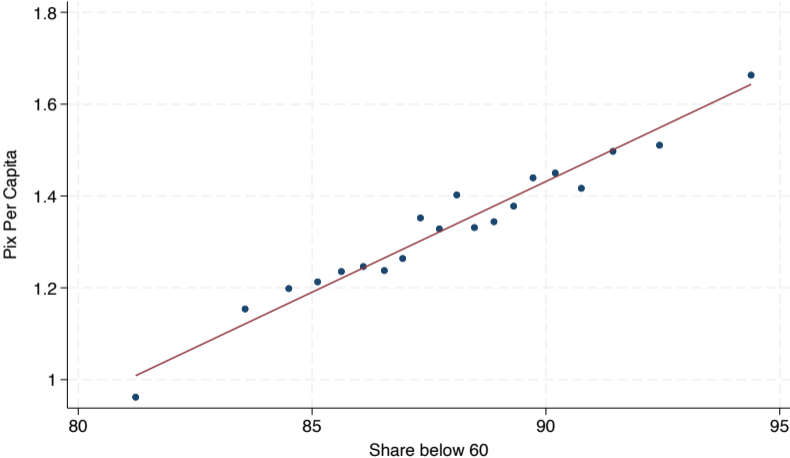
- The paper focuses on India
- Can the statements be applied to other payment systems?
- Authors can provide more non-causal evidence
- I did some replications



# Pix usage is higher in younger areas



# Including baseline controls



## Variance decomposition

	(1)	(2)	(3)	(4)
Age	79.14	48.1	42.71	28.6
Sex	20.86	13.17	12.81	8.37
Income		38.73	34.41	19.17
Literacy			10.07	5.75
Area				38.11

- Age is the most important factor, not counting the area
- The importance is slightly lower than for UPI
- **Suggestion:** consider showing some results for other countries

## Comment 2: impact of urbanization

- The paper adds a lot of controls and has identification strategy
- The fertility instrument is likely correlated with levels of urbanization and healthcare development
- Urban population might be willing to use UPI more regardless of age

## Urbanization matters for Pix

	(1)	(2)	(3)	(4)	(5)
Age	79.14	48.1	42.71	28.6	15.26
Sex	20.86	13.17	12.81	8.37	3.08
Income		38.73	34.41	19.17	10.91
Literacy			10.07	5.75	3.54
Area				38.11	18.65
Urban					48.57

- **Suggestion:** show the results for urban vs rural areas separately
- Try to consider different instruments such as COVID restrictions

## Comment 3: merchants' incentives

- Merchants adopt UPI less in older areas
- Would government programs help?
- Example: debit card distribution in Mexico (Higgins (2024))
- **Suggestion:** provide more details and discussion about this

## Minor comments

- Including controls helps but there are unobservables (political beliefs, etc) – identification threats
- What happens to Apple Pay (or other mobile payments) in India?
  - More evidence on why people like UPI
- Credit card *benefits* can matter, not just access to them – try to distinguish
- Should taste shifters add linearly or depend on consumption?
- Fintech company works among many other – how big are aggregate effects? Important for relevance

# Summary

- Compelling and important paper
- More discussion about external validity will help
- Regulators in the US must read this paper

Good luck!