

Mobile phones... Economic impact?

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Myanmar



What is a systematic review?

- Uses ***explicit methods*** to ***identify, select,*** and ***critically appraise*** relevant research and ***summarise*** data from those studies that are included in the review
- Originally from the field of medicine, now includes social sciences (e.g. Development)
- Used extensively for policymaking in the health sector

About the review

- What did we study?
 - Mobile phone interventions for improving **economic and productive outcomes** in **rural areas** in low and middle-income countries (LMICs)
- Economic and productive outcomes = changes in:
 - Individual income/savings/wages/expenditure
 - Household income/savings/expenditure
 - Business profit/productivity
 - Wastage



What did we do?

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New! 2014 Scholar Metrics released

Stand on the shoulders of giants

What did we do?

Studies screened: 8671

Excluded: 8630 **Qualitative, not mobile, urban, impact not measured, theoretical, descriptive stats**

Critically Appraised: 41

Included: 14

What did we find?

THE
QUARTERLY JOURNAL
OF ECONOMIC

Vol. CXXII August 2007

Does ICT Benefit the Poor?
Evidence from South Africa

Stefan Klöpper, Cornell University and J. W. C.

American Economic Journal: Applied Economics 2 (July 2010): 46–59
<http://www.aeaweb.org/articles.php?doi=10.1257/app.2.3.46>

Information from Markets Near and Far:
Mobile Phones and Agricultural Markets in Nigeria

By JENNIFER C. AKER*

POLICY RESEARCH WORKING PAPER 4996

Is IT Enough? Evidence from a Natural Experiment
in India's Agriculture Markets

Chris Parker, Kamalini Ramdas, Nicos Savva
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...developing countries.
...provides estimates of
...dispersion across
...mobile phone service
...cent reduction in
...market pairs with

IMPACT EVALUATION SERIES No. 33

The Power of Information

The Impact of Mobile Phones on Farmers' Welfare
in the Philippines

Julien Labonne
Robert S. Chase

Access to information and communication technologies (ICTs) such as mobile phone networks is widely known to improve market efficiency. In this paper, we examine whether access to timely and accurate information provided through ICT applications has any additional impact. Using a detailed dataset from Reuters Market Light (RML), a text message service in India that provides daily price information to farmers, we find that this information reduces geographic price dispersion of crops in rural communities by as much as 5.2% (std. error 2.6%, p-value 4.5%), over and above access to mobile phone technology and other means of communication. To identify the effect of information on price dispersion we exploit a natural experiment where bulk text messages were banned unexpectedly across India for twelve days in 2010. We find that access to RML information has the highest impact in areas where RML has the largest number of subscribers. Also, the effect is largest for perishable crops. RML thus reduces the higher risk associated with high value perishable crops. We discuss implications for development organizations and for information providers.

Key words: price dispersion, information and communication technology, natural experiment, supply chains

...of information from
...in Magaria, Nigeria

...market agents have sufficed that this information is
...less or symmetric. Due to
...ss markets is a common
...l Austan Goolsbee 2002
...nsen 2007). In this context
...important implications
...nascent markets.

1. Introduction

The rapid and widespread growth of information and communication infrastructure such as mobile phone networks in Africa and Asia has created a number of opportunities for economic growth

Public Disclosure Authorized
THE DIGITAL MARKET
When information is
arbitrage. Efficient
allocated efficiently
performance
was introduced
Using micro
fishermen
dispersion, the
Law of One

How to
manage an
information
example,
First Fundamental
equilibrium
(LOP) (i.e.

Public Disclosure Authorized

Mobile Phones

Impacts due to coverage expansion and access to a phone

Impacts due to mobile phone based services

About the studies

Author	Observations	Occupations	Duration	Location
Jensen (2007)	74,700	Fishers, traders	1997-2001	Kerala, India
Aker (2010)	53,820	Traders	1999-2006	Niger
Aker and Fafchamps (2011)	39,120	Traders, farmers	1999-2008	Niger
	2,503			
Labonne and Chase (2009)	2,092	Farmers	2003-2006	Philippines
Beuermann et al. (2012)	40,000	Cross-sectoral	2001-2007	Peru
Klonner and Nolen (2008)	57,486	Cross-sectoral	1996-2001	South Africa

Findings

Author	Findings
Jensen (2007)	INR 5 reduction in Max-Min spread of prices between market
	fishermen's profits increased on average by 8% consumer price reduced by 4%
	5-8% waste reduced to almost 0
Aker (2010)	10%-16% reduction in grain price dispersion. The effect is stronger for market pairs with higher transport costs
Aker and Fafchamps (2011)	50% reduction in the Max-Min price spread of farm-gate prices within a region
	reduces producer price dispersion for cowpeas by 6%. No higher producer prices but lower intra-annual price risk for farmers.
Labonne and Chase (2009)	increase in growth rate of per capita consumption: 15% (excluding communication)

Findings

Author	Findings
Klonner and Nolen (2008)	Employment increases by 15 % when a locality receives complete network coverage (increased employment by women).
Beuermann et al. (2012)	Wage income increases by 15% after 2 years coverage, 34% after 6 years of coverage. Value of household assets increases by 23% 2 years after coverage, and increases to 54% after 6 years of coverage.

Reasons for impact

- Labour markets
 - Access to information
 - Ability to coordinate

- Agricultural and fisheries markets
 - Access to timely and accurate information
 - Ability to exploit the arbitrage between markets
 - Availability of transport
 - Ability to bargain

Mobile Phones

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About the studies

Author	Service Offered	Sample/obs	Duration	Location
Fafchamps and Minten (2011)	Price, weather and crop advisory information via SMS	1,000	12 months	Maharashtra, India
Parker et al. (2012)	Price information via SMS	14,349	12 months (12 days)	India
Camacho and Conover (2011)	Price and weather information via SMS	1,107	26 weeks	Colombia

Findings

Author	Findings	
Fafchamps & Minten (2011)	price dispersion	Not generalizable
	price received by farmers	Not generalizable
	crop loss	Not generalizable
	likelihood of changing crop varieties and cultivation practices	Not generalizable
Parker et al. (2012)	Price dispersion for crops for each state	5.2% higher spatial price dispersion during a bulk SMS ban
Camacho & Conover (2011)	sale price	Not generalizable
	farmers' revenues	Not generalizable
	household expenditures	Not generalizable
	crop loss	Not generalisable

Reasons for impact (or lack thereof)

- Problems with targeting
 - Did the intended beneficiaries get the relevant information at the relevant time?
- Language issues
- Literacy issues – especially with SMS
- Push versus pull service
- Experience in using the service

In summary

- Mobile network expansion and access to a phone
 - Makes previously diffused markets closer to a single market by reducing price dispersion.
 - Contributes to the creation of direct and indirect employment. In South Africa mobile coverage increased likelihood of someone being employed by 33.7%.
 - Economic improvements was reflected in rising disposable income, household assets and thus expenditure. Expenditure increased by 44.6%, six years after coverage arrived in Peru.
 - results in increased the growth rate of consumption by about 15% among farmers in Philippines. This excluded communication related consumption.

Summary contd...

- Access to use of mobile services did reduce price dispersion but the desired impacts were not seen
 - In designing mobile based services it is important to ensure that the intended beneficiaries are being targeted and the services are designed appropriately

More about systematic reviews

- More reviews being done on:
 - What are the impacts of mobile financial services in LMICs?
 - How have young or adult learners in developing Asia benefit from ICTs?
 - Does access to business relevant information through networked devices impact urban MSMEs in LMICs?
 - What has been the efficacy of telecom reform in low and middle income countries?

- More information at:

[http://lirneasia.net/projects/systematic-](http://lirneasia.net/projects/systematic-reviews/)

