

Mobile phones → Economic impact in rural areas

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This work was carried out with the aid of a grant from the International Initiative for Impact Evaluations (3ie)

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
 - Market price dispersion or volatility

What did we do?

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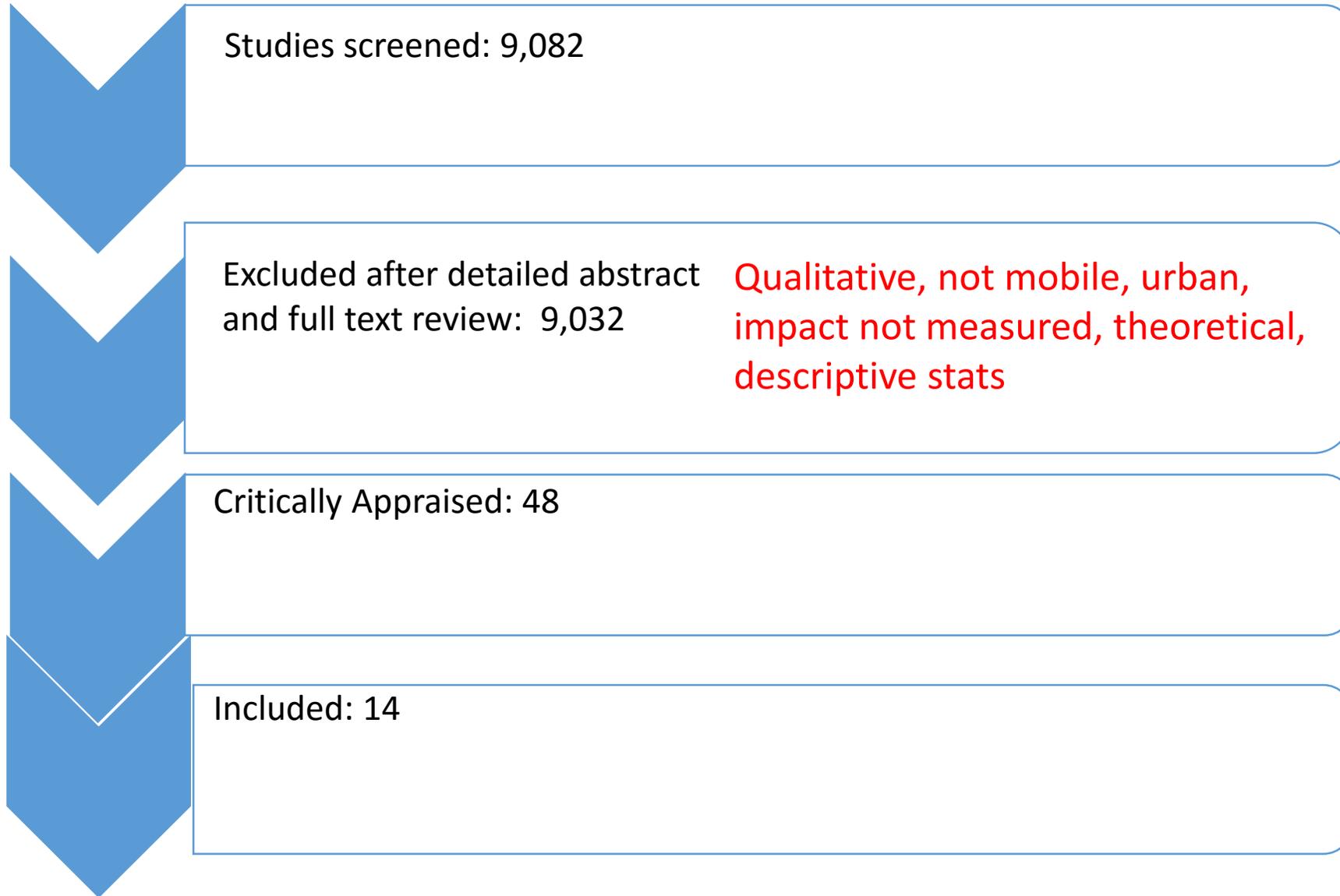
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Articles (include patents) Case law

New! 2014 Scholar Metrics released

Stand on the shoulders of giants

What did we do?



What did we find?

THE
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OF ECONOMIC

Vol. CXXII August 2007

Does ICT Benefit the Evidence from South

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 Niger

By IENNY C. AKER

THE DIGITAL
MARKET

When information
arbitrage is
allocated efficiently,
performance is
improved. Using
micro data from
fishermen, the
dispersion of
prices (i.e.
Law of One

Public Disclosure Authorized

How does
information
affect market
performance?
First, we
provide an
example of
information
equilibrium
(LOP) (i.e.

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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

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

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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

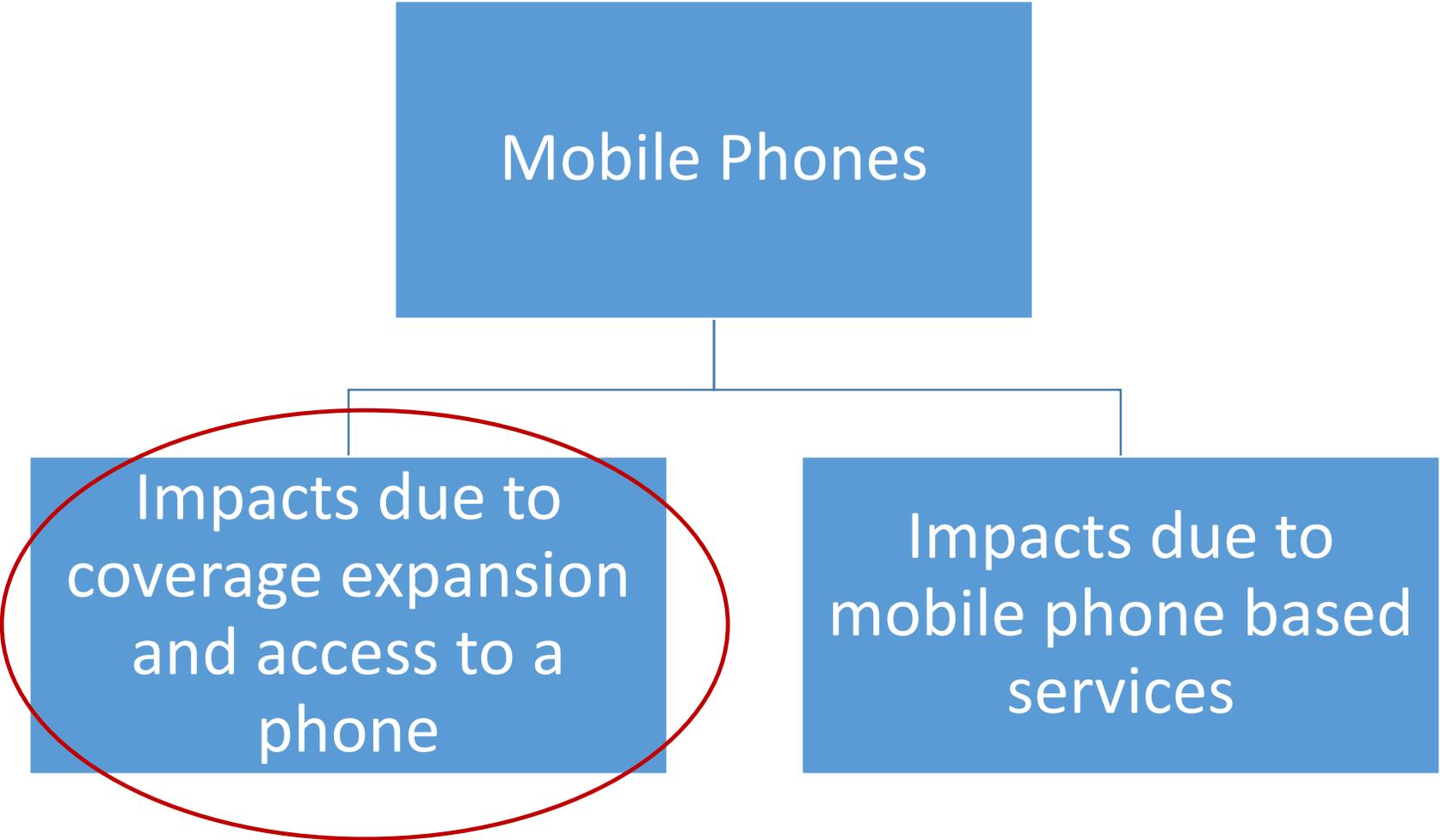
developing countries.
This paper provides
evidence on the
impact of mobile
phone service
reduction in
market pairs with

of information from
in Magaria, Niger

market agents have
found that this
information is
less or symmetric.
Due to
as markets are
common
(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



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

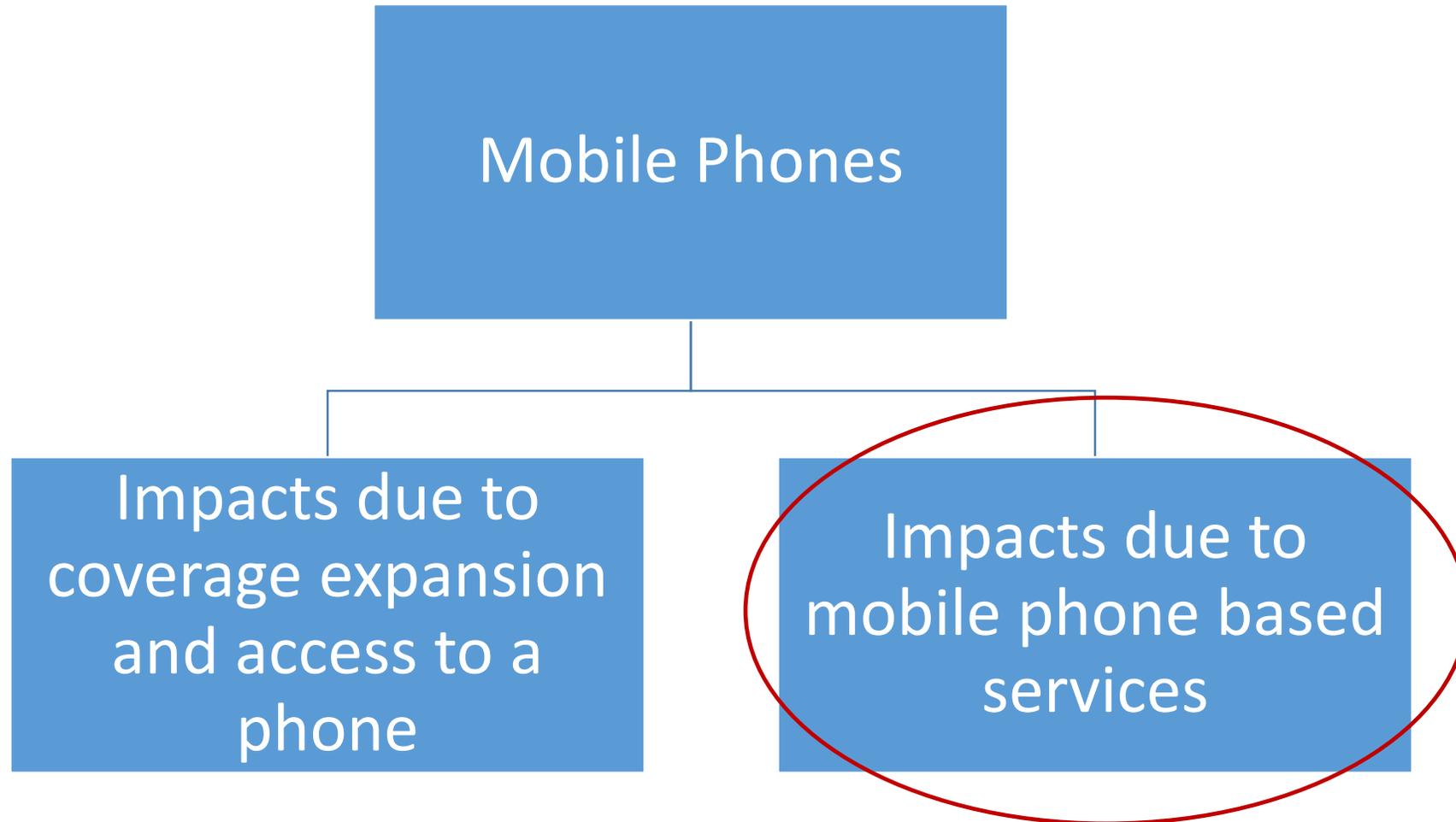
Author	Findings
Jensen (2007)	INR 5 reduction in Max-Min spread of prices between market
	fishermen's profits increased on average by 8%
	consumer price reduced by 4%
Aker (2010)	5-8% waste reduced to almost 0
	10%-16% reduction in grain price dispersion. The effect is stronger for market pairs with 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.

Mobile network expansion has impact

- Causal mechanism
 - Improves coordination between buyers and sellers in hitherto separate agricultural markets, in effect merging them into a bigger market
 - Reduces price dispersion (Law of One Price) and aligns supply and demand (Say's Law)
 - Has similar effect on labor markets
 - Indirect effects too
 - In South Africa mobile coverage increased likelihood of someone being employed by 33.7%
 - Economic improvements were reflected in rising disposable income, household assets and thus expenditure (easier to measure)
 - Expenditure increased by 44.6%, six years after coverage arrived in Peru
 - Resulted in increased growth of consumption (about 15%) among farmers in Philippines, excluding communication-related consumption
- But enabling conditions (which vary even within countries) must exist, e.g.,
 - Even if price/demand information available from new location through mobile communication, it must be possible for the supplier/trader to take commodity to that place: physical transport
 - The institutional conditions must permit the action. If the fisher/trader is not empowered to sell in new location by owner of boat/grain, information by itself will not improve outcomes



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 generalizable

Reasons for impact (or inability to find impact)

- Too short a time to find effects
- 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

Causal mechanism & enabling conditions

- Causal mechanism same as with network extension (difference being proactive supply of information)
 - Hitherto separate markets consolidated through ICTs
- Information services reduced price dispersion but the desired impacts were not seen
- Same qualifications re enabling conditions