

## ECONOMIC IMPACT OF MOBILE PHONES IN LOW AND MIDDLE INCOME COUNTRIES

POLICY BRIEF

Rural areas are less connected than the urban, and are “information-poor.” There is a high demand for information in rural areas but considerable costs are associated with information search. For example, some of the costs incurred are transport costs to seek information.

Information and communication technologies (ICTs) help bridge distance. Mobile phones are among the fastest diffusing ICTs of all time. Particularly in Low and Middle Income Countries (LMICs), they are the most used ICT. A systematic review was conducted to isolate the economic impact of mobile phones in rural areas by looking at the most robust quantitative studies available. The systematic review assessed the impacts of the following:

- increased coverage or availability of mobile signals
- use of mobile phones or Subscriber Interface Modules (SIMs)
- use of mobile based services and/or applications

### KEY FINDINGS

- 1. Mobile coverage in rural areas makes markets more efficient** by matching demand and supply better, leading to both consumer and producer welfare gains, by reducing price dispersion and subsequently leading to reduced waste of perishable agricultural produce and fish.
- 2. Mobile coverage in rural areas contributes to economic development.** Mobile coverage leads to increased likelihood of being employed, increases disposable income and thereby expenditure.
- 3. Push services had a lesser impact than pull.** Impacts were seen more in the instances where the users actively used the mobile phone to “pull” and obtain the information as opposed to when providers “pushed” the information to the users.

### THE RESEARCH

#### ABOUT THE SYSTEMATIC REVIEW

Systematic reviews use rigorous methods to identify, select, and critically appraise the most methodologically robust evidence pertaining to a precisely defined research question. They seek to provide unbiased assessments of what works and why.

This systematic review examined 9,082 studies and selected the most robust quantitative studies for synthesis.

#### IMPACTS OF INCREASED COVERAGE

Mobile coverage in rural areas makes markets more efficient by matching demand and supply across a

larger geographical space. This results in benefits to consumers as well as to producers. In the case of perishable agricultural produce such as fish, there is a significant reduction in waste as the markets clear. Mobile coverage in rural areas improves direct and indirect access to employment. In the case of rural South Africa, mobile coverage increased the likelihood of a person being employed by 33.7 percent within one year. The contribution made by mobile coverage of rural areas is reflected in increased disposable income and thereby of expenditure. Expenditure increased by nearly 44.6 percent, six years after study

areas in Peru were covered by signals from mobile networks.

### IMPACTS OF INCREASED COVERAGE

Examining the use of mobile phones and/or SIM cards purchased by the user or provided by a third party did not produce findings as robust as those from coverage.

One study provided credible evidence of impact of mobile adoption: the purchase of a mobile phone led to an increased growth rate of between 11-17 percent of per capita consumption. This indicates that the mobile phone contributes to higher incomes and thus higher consumption. However, this study was of poor farm households in the Philippines. While the direction of impact will be similar across the globe and various population segments, the magnitude is likely to be different.

### IMPACTS OF THE USE OF MOBILE SERVICES AND APPLICATIONS

The evidence of impact from mobile phone based services and applications were weak. The studies looked at services such as those providing information about prices or agricultural advice made available free or at a charge. Of the studies that made it to the final level of analysis, only one showed clear evidence of positive impact. This study benefited from a serendipitous suspension of bulk SMS. Price dispersion increased during that period. The randomized controlled trials within the set showed no impacts. The limited duration of the studies and the fact that the services were provided free for short periods militated against demonstration of benefits.

### CONCLUSIONS

Overall, the evidence indicates that extending mobile coverage to areas where none existed before yields positive economic impacts. The findings of benefits from use of mobile phones /SIMS and use of mobile

phone based services and applications are less robust.

The systematic review complements other macro-level studies that show positive economic contributions from the introduction of mobile networks. It shows that the possibility of communicating and coordinating activities across space offered by the extension of networks yields economic benefits even without subsidized provision of access devices and specially designed information services. It is not that the devices and services do not have impact, but these impacts are difficult to demonstrate.

In conjunction with other macro studies, the conclusions of the meta-analysis show mobile service have positive economic impacts. This supports policy recommendations to desist from subjecting mobile services to additional taxes and facilitate network investments in rural areas through efficient spectrum management and access to land for the construction of base stations. They also provide a basis to calculate the benefits of rural subsidy schemes

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