

Mobile Phones and Farmers' Marketing Decisions in Ethiopia

GETAW TADESSE and GODFREY BAHIGWA*

International Food Policy Research Institute, Addis Ababa, Ethiopia

Summary. — This paper examines the impact of mobile phones on farmers' marketing decisions and prices they receive based on household- and village-level information collected from rural Ethiopia. It explains the reason for the weak impact of mobile phones observed in this study as well as in previous studies in Africa. We argue that even though many farmers participate in information searching, the number of farmers who use mobile phones for information searching is very small. The reason for such low use of mobile phones for information searching seems to be lack of relevant information that can be accessed through mobile phones.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Key words — mobile phones, information searching, agricultural marketing, smallholder farmers, Ethiopia

1. INTRODUCTION

Access to information, an important input for making agricultural decisions in production, marketing, and finance, has historically been very costly in Africa South of the Sahara. Farmers who want to sell their products have to search for the right price, the right buyer, the right standards and grades of the product. All these searches are costly. Farmers need to do frequent travel, repeated loading and unloading to showcase their produce to buyers and brokers. Typical farmers in Ethiopia sell produce to traders either in their village or in distant markets which entails substantial transportation and labor costs. The village markets are characterized by asymmetric information in which traders are more informed than farmers about the prices in the central or regional markets (Tadesse & Shively, 2013) that makes information searching very costly. Besides the searching cost for price information from the central market, farmers have to incur substantial searching cost to compare prices of different buyers in local markets. Prices also vary within days and weeks which forces farmers to search for information every time they want to sell.

Excessive market searching cost causes smallholders to produce very limited range of goods and services. In the extreme case, it leads to households to produce only for home consumption. It also constrains them to apply low levels of external input and become less responsive to market changes (Holden, Shiferaw, & Pender, 2001; Sadoulet & Janvry, 1995). Hence, farmers do not realize the gains from trade and are unable maximize annual farm income through specialization according to long-term comparative advantages.

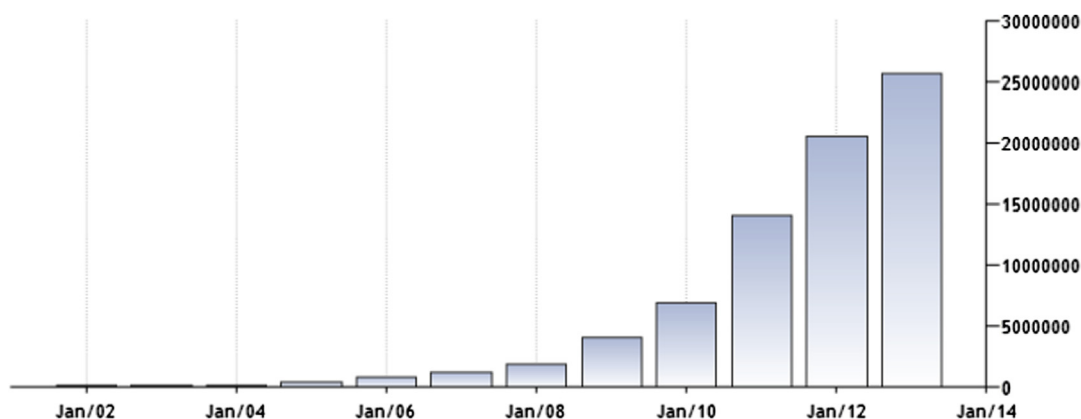
Expansion of mobile phones' coverage is considered one of the remedies for such an information problem. The percentage of the world's population with mobile phone coverage rose from around 12% in 1999 to around 76% in 2009. Almost three-fourths of the world's mobile phones in 2010 were in developing countries (Donovan, 2011). In many developing countries, more people have access to mobile phones than to older technologies like telephone landlines, newspapers, and radio (Aker, 2011), though significant spatial disparity is observed (Buys, Dasgupta, Thomas, & Wheeler, 2009). Improved regulatory environments, technological innovations, and payment options attractive to poor people such as pre-pay plans have all enabled the rapid uptake of mobile phones (Donovan, 2011; Haward & Mazaheri, 2009). As a

result, mobile phone coverage is widely expanding in Africa (Aker & Mbiti, 2010). For example, Ethiopia, one of the lowest ICT penetrated countries in Africa, had more than 25 million mobile subscribers in 2013 (TradingEconomics, 2014). Although many of the subscribers are in urban centers and small towns, the penetration to rural areas is also remarkable and growing very fast over time (Figure 1). According to Minten, Stifel, and Tamru (2012), in 2005 almost all rural agricultural wholesale markets had access to mobile phones. With the expansion of rural electrification, many farmers have got access to mobile telephone services in recent periods although the network coverage is still very poor.

Many studies, with few exceptions, have confirmed that mobile phones are indeed improving farmers' production practices and adoption of new practices. Lio and Liu (2006) found that the adoption of new ICTs increases overall agricultural productivity, perhaps because ICT infrastructure facilitates the adoption of modern agricultural inputs. Mittal, Gandhi, and Tripathi (2010) interviewed Indian farmers and fisherman who stated that information delivered via mobile phone allowed them to increase yields. However, an experiment on the effect of the Reuters Market Light (RML) information service in India failed to find significant effects of the information service on crop varieties grown or on production practices (Fafchamps & Minten, 2012).

Mobile phone coverage has also improved market efficiency and reduced consumer prices for certain commodities. According to Jensen (2007) mobile phone coverage improved market functioning in Kerala, India. Aker and Fafchamps (2013) assessed the impact of mobile phones on agricultural price dispersions in Niger. The study found that while mobile phone coverage reduced the spatial dispersion of producer prices for semi perishable commodities like cowpeas; it had

*The authors are grateful for the financial support received from the Netherlands Governments through WOTRO as part of a project that aims at evaluating the impact of establishing and empowering farmers' marketing organizations in Ethiopia. Data for this paper are extracted from a bigger dataset collected for this purpose. We are also highly indebted to the International Food Policy Research Institute, which hosted the entire study and funded authors' expenses. However, the views and opinions expressed in this paper are that of the authors and do not reflect the views and stands of the institutions. Final revision accepted: December 14, 2014.



Source: TradingEconomics (2014)

Figure 1. *Mobile cellular subscribers in Ethiopia both rural and urban.*

no impact on non-perishable commodities such as millet and sorghum. The study further found that farmers owning mobile phones obtained more price information but did not receive higher prices. The explanation given was non-participation of farmers in spatial arbitrage. In Ethiopia, access to mobile phones has improved traders and brokers' business communication for negotiating prices and settling payments (Minten *et al.*, 2012).

However, studies assessing the impact of cell phone on producers' marketing decisions are few. The existing studies that assessed the link between ICT and farmer's market participation have found that access to mobile phone did not significantly improve farmers' market participation and spatial arbitrage (Alene *et al.*, 2008; Fafchamps & Minten, 2012; Muto & Yamano, 2009). The reason for such insignificant impact is not yet well explained. For mobile phones to influence farmers' decision and generate economic benefits, farmers' marketing decision should first be guided by market information. Smallholders may sell when they are in need of cash or when they have surplus output beyond their home consumption irrespective of what is going on in the market. In this case, having a mobile phone may not necessarily matter for farmers' marketing decisions. Second, farmers must use mobile phones for information searching. This is contingent upon the presence of an information source that can deliver reliable, trusted, and understandable information to address specific needs and create awareness on different uses of mobile phones including call-in and SMS-services. Third, the cost of using mobile phones should be within the capacity of smallholders who have limited access to electricity and air-time credits.

The objective of this paper is to examine the effect of mobile phones' expansion in rural Ethiopia on farmers' marketing decisions and prices they receive. It is aimed at providing farm-level evidence to translate technological opportunities into economic benefits. Specifically, the paper responds to the following research questions: (1) Do farmers with mobile phones make different marketing decisions (place of selling (spatial arbitrage), frequency of selling and quantity of selling) than those who do not have access to mobile phones? (2) Do farmers with mobile phone access receive higher prices than those who have no access to mobile phones? (3) Do smallholder farmers really search information before making marketing decisions? (4) Do farmers use mobile phone for searching information? By addressing these questions, the

paper contributes to the growing literature on the impact of mobile phones on smallholders' marketing decision and the price they receive. It also presents new insights into why mobile phone impact is weak in farm households' marketing decisions in Africa.

These insights are derived from a series of econometric models estimated using household survey data collected from central and southern Ethiopia. The first model estimated the effect of mobile phone access on the probability of selling to different market places including village market, district market, and central market. The second model estimated the impact of mobile phone access on frequency and quantity of output sold and price received by farmers. We also studied whether farmers really use mobile phones for information searching or not. We found that the impact of mobile phone access on farmers' marketing decision (market arbitrage) and the price they receive is very weak, which is similar to the findings of previous studies in other countries (Aker & Fafchamps, 2013; Fafchamps & Minten, 2012). However, the explanation is less likely to relate to non-participation of farmers in spatial or temporal arbitrage at least in the Ethiopian context. Even though many farmers participate in information searching (and market arbitrage), the number of farmers who use mobile phones for information searching is very small. The reason for such low use of mobile phones for information searching seems to be lack of relevant information that can be accessed through mobile phones. The results are further discussed to shed light on the need for well-organized and trusted institutions that can deliver information to farmers through ICT.

The paper is organized as follows. The next section presents the conceptual framework, which lays the theoretical foundation of the paper. This section is followed by a brief explanation of the data used to test the hypotheses presented in the conceptual framework. The third section presents the empirical models used to test the research questions stated above. Then, the fourth section presents the results and discusses the main findings of the paper. The last section highlights the major findings and key policy and research recommendations.

2. CONCEPTUAL FRAMEWORK

To ascertain the importance of mobile phones for smallholder farmers, we must first understand how farmers make

Download English Version:

<https://daneshyari.com/en/article/7394096>

Download Persian Version:

<https://daneshyari.com/article/7394096>

[Daneshyari.com](https://daneshyari.com)