

## Chapter 61

# An Analysis of Mobile Phone Use in Nigerian Agricultural Development

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### ABSTRACT

*This study used 328 smallholder farmer respondents to investigate its objectives of how farmers use mobile phone technology, what benefits they have gained from the use, and the constraints encountered during the process. The quantitative data collected through a process of questionnaire administration were analysed using Stata 12 software. The results indicate that mobile phone usage for farm and other social purposes has increased with farmers. The farmers also spend almost 40% of their phone bills on farm-related activities and that seeking market information represented 17.32% of the total phone bill in a month. Increased efficiency in input delivery, market access, and output distribution were reported as some of the advantages of using mobile phones. This study was conducted in a region where its general characteristics may not reflect that of the entire country thus generalisation of the study may be limited, so the data should be cautiously use.*

### INTRODUCTION

Sub-Saharan Africa's rural economy remains agriculture dependent relative to other regions and it employed 62% of the population in 2005 (Staatz & Dembele, 2007). In Nigeria, agriculture employed 70% of the work force and accounted for more than 40% of the Gross Domestic Product (USAID, 2013). It is mainly characterised by subsistent farming. The efforts at developing agriculture in Nigeria have taken many approaches such as rural development strategies which included formation of cooperative organisations, provision of access to credit and technical information, and others (Ogbeide, 2014).

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The process of actualising rural development has led to the adoption of mobile phone technology as a farming tool for contact and business transactions. This study investigates how much the farmers have taken advantage of this technology and the benefits derived from it. In considering these objectives, the study is to provide answers to such questions as: (1) do farmers practically use mobile phone for agricultural purposes in Nigeria? (2) does mobile phone usage drive improvement in productivity? (3) what benefits do the farmers derive using mobile phone?

This study is important as it will help to capture and evaluate the progress of mobile phone adoption and uses and also identify, assess, and judge the benefits the smallholder farmers obtain with the device. It is critical that the success and use of this device be studied for improvement and adaptation purposes. The background to the study approach was to explore the three main interdependent players: the provider of inputs, the converter of inputs, and the users of the output and the relationships that exist among them. An understanding of the relationship amongst these players will help to show how important mobile phone is in the order. The providers of inputs in agriculture are diverse and often time distantly located away from the converters.

Farm input providers such as financial institutions, agribusiness/farm management organisations, technical services, chemical and planting materials suppliers, and donor agencies are often situated in the cities or local government headquarters (Karamagi & Nalumansi, 2009). The physical distance between the input providers and the users creates a gap in access and communication. The input converters are the farmers. Farmers particularly in Nigeria are mainly small-scaled with limited contacts to exchange and share crucial information, knowledge and skills needed for production, processing and marketing (Alleman et al., 2002; FAO, 2005). Consequently, yields are low, and incomes from agriculture leave little for the farmer to turn over. Access to crucial inputs is poor or denied due to difficulty in information flow either from the provider of inputs or the users of output (FAO, 2005).

The users of outputs include manufacturers that represent the secondary inputs providers and the final consumers of farm produce. The users of agricultural outputs in like manner to the input converters are most times geographically located far away from the farmers. The road network is poor and the distance from the farm to the market towns and other service providers is very long. The result of these slack relationships is high production cost, inefficiency, non-competitiveness, and corruption (Sebastian, 2008; Dorosh, 2009; WDI, 2010; Livingston et al., 2011).

For example, fertilizer distribution to farmers in Nigeria was hijacked by middle men with no farming interest who either divert them to un-intended markets or resell to the farmers at exorbitant prices (Al-lafira, 2013). The diversion results in farmers not receiving the fertilizer at all or on time, and in most cases at a higher price. The delay in getting the inputs, the corruption in the process, and the increase in cost creates inefficiency in the supply chain and causes production to be uncompetitive (Chorn, Sisco, & Pruzan-Jorgensen, 2010; Livingston et al., 2011).

## **LITERATURE REVIEW**

This study assumes readers have prior knowledge of the underlying theory of diffusion of innovation that defined how innovation is adopted by a social group with the result that the innovation becomes part of the existing social system. Adoption of a new technology does not happen instantaneously in a social system; instead, it is a process whereby some individuals are quicker to adopt the technology than others. However, innovation must have the capacity to improve and create better social economic

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