


Chapter 5

Contemporary Usage of Farm Management Information Systems in Nigeria

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ABSTRACT

Agriculture is a critical sector in the Nigerian economy, contributing significantly to GDP as well as employment generation. Agricultural technology has evolved substantially over the last decade with significant advancements in farm management information systems (FMIS) as well as agricultural information systems (AIS). FMIS have evolved from addressing simple production tasks to handling complex across multifunctional sectors in farming enterprises. However, the adoption rates of FMIS have been low in Nigeria. In this chapter, the contemporary usage of farm management information systems in central Nigeria is examined, and the various constraints leading to the low adoption rates are explored. In this study, the factors impacting the FMIS adoption by rural farmers in central Nigeria were examined. The findings of this study indicated that some of the demographic factors were influencing the FMIS adoption by rural farmers in central Nigeria. The results of this study in this chapter should help policymakers in framing policies intended to improve FMIS adoption rates in Nigeria.

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INTRODUCTION

Sørensen et al. (2010) defined Farm Management Information Systems (FMIS) as a planned system of collecting, processing, storing, and disseminating data in a form needed to carry out farm-related operational functions. FMIS are essential parts of farming enterprises because farming has evolved from simple production tasks to businesses with multifunctional sectors (Paraforos et al., 2017). FMIS assist in the storage and processing of farm data for everyday farm management. Some of the popular FMIS, include 365FarmNet, AgriWebb, AgWorld, and FarmWorks (Paraforos et al., 2017). FMIS support the various domains of the agricultural sector, including dairy farming, crop management, field management, and financial management (Tummers, Kassahun, & Tekinerdogan, 2019). FMIS have evolved in the last decade from simple farm record-keeping into advanced complex systems helping in strategic decision making and handling several essential aspects, including managing production costs, compliance with agricultural standards, offering simulation, and decision-making tools, as well as weather forecasting capabilities (Rupnik et al., 2019). Agriculture contributes to over 24% of the Gross Domestic Product (GDP) in Nigeria. Agriculture also constitutes close to 70% of non-oil exports and employs 68% of the Nigerian labor force. The growth in the agriculture sector is essential for economic growth and development of countries in Sub-Saharan Africa with over 60% of the population in these countries dependent on agriculture (Awotide, Karimov, & Diagne, 2016). However, after the discovery of Petroleum in the 1970s, there has been a gradual decline in agricultural productivity resulting in lower-income to farmers, unemployment, and a rise in food prices. A significant problem is farmers are not adopting FMIS to improve agricultural productivity (Aker, 2011), which is the problem we examine in this chapter.

BACKGROUND

Farm management is also challenging and time-consuming task taking into consideration problems, such as complex in-field monitoring tasks, finances, climate-monitoring, subsidies, and cultivation area per farmer (Paraforos et al., 2017). Agriculture is a data-intensive business with data collected from a range of sources, including ecological, nutritional, economic, and market-presence (Junior, Oliveira, & Yanaze, 2019). Modern agriculture requires a complex administrative environment requiring information systems developed to meet strict requirements (Junior et al., 2019). According to Tummers et al. (2019), most of the FMIS offer varying combinations of the significant features, including field operations management, financial management, inventory control, reporting, quality assurance, human resource management, insight to best practices, sales management, machinery management, and site-specific functions. FMIS address most of these concerns by addressing these challenges and helping farmers improve agricultural productivity and efficiency.

While there have been several studies on the adoption and use of agricultural technology, including FMIS in Europe and the USA, the findings of these studies need not necessarily be replicable in Asian and African countries. Using the examples from successful implementation and adoption of FMIS in European countries, Sørensen et al. (2010) emphasize on the importance of accommodating the geographical and cultural differences while designing new FMIS. Shiferaw, Kebede, Kassie, and Fisher (2015) state that most of the studies on the adoption of agricultural technology in Europe and the USA assume that farmers have complete information and unconstrained access to the technology. However, this is not the case in most of the developing countries in Asia and Africa. There is a need to examine the

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