

## Chapter 24

# Factors Influencing Acceptance and Use of ICT Innovations by Agribusinesses: A Conceptual Framework

**Adamkolo Mohammed Ibrahim**

*Universiti Putra Malaysia, Malaysia & University of Maiduguri, Nigeria*

**Md. Salleh Hj. Hassan**

*Universiti Putra Malaysia, Malaysia*

**Sarina Yusuf**

*Universiti Putra Malaysia, Malaysia*

### ABSTRACT

*This chapter proposes a modified conceptual framework for investigating the influence of cognitive, management characteristics and organizational size factors on information and communication technology (ICT) adoption by agribusinesses. Agro-based small and medium-scale enterprises (SMEs) often deal in commodities that have shorter shelf life. Given that, researchers often face challenges determining the appropriate conceptual framework to adopt, which yields results that proffer both practical and theoretical solutions to business problems, hence, it is imperative for agripreneurs to harness technology for maximum profit and food security. The unified theory of use and acceptance of technology (UTAUT) model, which has four key predictors, was adopted with the integration of two external variables: SME Managerial Characteristics and SME Organizational Size. Factor analysis shows that five out of the six predictors loaded strongly. The study concludes that researchers in technology adoption should consider integrating organization and management quality variables into their research frameworks.*

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## **INTRODUCTION**

### **Background**

The literature has identified Information and Communication Technology (ICT) as consisting of a wide range of technological applications: telecommunications technologies, digital broadcast technologies and electronic information facilities (Chitura, Mupemhi, Dube & Bolongkikit 2008). ICT, therefore, encompasses a range of technologies, information and resources. Furthermore, ICTs have been identified as having the potential to boost small and medium-scale enterprises (SMEs) (Ismail, Jeffery & Van Belle 2011). However, SMEs are often reluctant to relinquish the traditional approaches and means of conducting business and firm operation and embrace technological change. For SMEs to be able to compete favorably in the modern market that is driven by technological innovations the numerous benefits of ICT should be taken into consideration. There is also the need for more awareness creation on the benefits of ICT to SMEs (Chitura, et al. 2008).

This study was conducted to satisfy the urge to determine the agro-based firms' organizational expectancy of ICT use in business based on the UTAUT model perspective. The data was collected from employees of small and medium agribusinesses that are based in Selangor using a survey questionnaire. The theoretical perspective of the Unified Theory of Acceptance and Use of Technology (UTAUT) model formulated by Venkatesh, Morris, Davis and Davis (2003) was adopted. Even though the model seeks to understand organizational employees' technology adoption behavior, it focuses on the cognitive perspective and downplays or ignores possible influence organizational size and management characteristics could have on the organizations ICT adoption drive. This study seeks to understand the correlation between organizational and managerial characteristics alongside the four key predictors of the model of ICT adoption.

ICT use being the criterion variable, the four key predictors of the model (performance expectancy, effort expectancy, social influence and facilitating conditions in) in addition to aforementioned two integrated predictors that were derived from the SME size and SME management characteristics literature were applied to predict ICT use. The model has been a comprehensive theme in ICT adoption studies for over one decade due to its parsimonious power to explain a range of organizational and individual ICT adoption expectations and use behavior (Ahmad, Tarmidi, Ridzwan, Abdul Hamid & Abdul Roni 2014; Taiwo & Downe 2013).

Although the literature has widely documented that the UTAUT model explains many organizational and individual ICT adoption issues, its application in the study of Malaysian agro-based SMEs that are based in Selangor is limited. Hence, this study was conducted to reveal the critical factors that influence ICT use behavior among Malaysian agro-based firms. Moreover, this study is expected to be of immediate importance to the developing SME sub-sector in Malaysia's economy and to contribute to the current literature of ICT and (agro-based) SMEs in the country.

Meanwhile, SMEs have been identified as a major business sector across the world, covering a wide range of industries, such as agro-based or farm-based, metal-based, cosmetic-based, garment-based, etc. In most countries, the number of SMEs tremendously exceeds the number of large enterprises and companies. One of the advantages of SMEs is that they contribute strongly to the gross domestic products

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