

## Chapter 4


# The Adoption of Digital Technologies for Sharing Information on Agriculture Among Farmers: Towards an Integrated Rural Technology Acceptance Model

**Elisha Mupaikwa**

 <https://orcid.org/0000-0002-0313-7139>

*National University of Science and Technology, Zimbabwe*

**Kelvib Joseph Bwalya**

 <https://orcid.org/0000-0003-0509-5515>

*University of Johannesburg, South Africa*

### ABSTRACT

*The use of information and communication technologies for agricultural communication has become dominant among farmers across the globe. However, literature shows some differential usage of these technologies among farmers. While research has utilised various theories to study the adoption and acceptance of technologies, it seems no single theory has been found to reliably explain the usage of ICTs for agricultural communication. This study sought to provide a comparative analysis of various theories in their applications in the use of ICTs for agricultural communication. This study developed an integrated model based on these theories with the variables extracted from the livelihoods framework and the agricultural knowledge and innovation systems. The study then recommended further tests on the validity of this model to determine the reliability of the model across cultures.*

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## INTRODUCTION

The use of ICTs has eased agricultural information communication among farmers but research suggests that there is low uptake of these technologies among farmers. This has resulted in limited access to information on the agricultural production process and early warning information on weather, markets, credit facilities, climate and pests and animal diseases. The limited access to information on agriculture has compromised farmers’ decision-making process resulting in poor yields among farmers. Limited usage of ICTs for agricultural communication has been a subject of research for many years and researchers have mostly used theories on technology acceptance. These researchers have often relied on contemporary technology acceptance theories and models and few have attempted to integrate these models and theories to develop a theory that can be used to study rural farmers’ acceptance of ICTs in agricultural communication. Among several models and theories that have been used to study technology acceptances are: Diffusion of Innovation model; Theory of Reasoned Action; Technology Acceptance Model, Theory of Planned Behaviour, Social Cognitive Theory, Motivational Model, Combined TAM and TPB, Model of PC utilization and The Unified Theory of Acceptance and Use of Technology. However, an examination of these theories and models generally reveals that none of these theories adequately addresses the factors that influence farmers’ acceptance and use of ICTs to share information on agriculture. This chapter seeks to develop an integrated model to study the acceptance and usage of ICTs among rural farmers. The chapter will review the above-mentioned contemporary technology acceptance models in rural agricultural environments. It further suggests how different models may then be integrated.

*Table 1. Article distribution*

Database	Number of articles
Elsevier	15
EmeraldInsight	6
Frontiers	6
MDPI	22
Taylor and Francis	90
Heliyon	4
Jstor	8
<b>Total</b>	<b>151</b>

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