

INFLUENCE OF DIGITAL INNOVATION SYSTEMS ON PERCEIVED
AGRICULTURAL PRODUCTIVITY: A CASE OF iShamba IN KENYA.

by

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APPROVAL

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DECLARATION

INFLUENCE OF DIGITAL INNOVATION SYSTEMS ON PERCEIVED
AGRICULTURAL PRODUCTIVITY: A CASE OF iShamba IN KENYA.

I declare that this thesis is my original work and has not been submitted to any
other college or university for academic credit.

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ABBREVIATIONS AND ACRONYMS

Agri-tech	Agricultural Technology(-ies)
AgriFin	Agricultural Finance
Agritips	Agricultural Tips
ASCU	Agricultural Sector Coordination Unit
Agrovisory	Agricultural Advisory
CGIAR	Consultative Group for International Agricultural Research
E-science	Electronic Science
ERB	Ethics Review Board
DU-ERB	Daystar University – Ethics Review Board
FAO	Food and Agriculture Organisation of the United Nations
FFS	Farmer Field Schools
GDP	Gross Domestic Product
GPS	Global Positioning System
ICTs	Information and Communication Technologies
IVR	Interactive Voice Response
NACOSTI	National Commission for Science, Technology, and Innovation
SDGs	Sustainable Development Goals
SMS	Short Message Service

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ABSTRACT

Digital technologies are transforming agricultural extension services by expanding accessibility to agricultural information ranging from plant variety selection to harvests, marketplaces, and weather forecasts. Agricultural extension services in Kenya's Nyeri county, in particular, have been lacking, prompting the growth of digital innovation systems such as iShamba to provide farmers with the agricultural information they require. iShamba, as a case study of an agricultural innovation system, functions as an agricultural extension service. Given this, the study proposes that digital innovation systems, through agricultural information dissemination and interactive capacities, have a significant impact on agricultural output. A telephone interview survey of 77 iShamba customers in Nyeri was undertaken. The sample size for this study was determined using non-probability convenience sampling, and data was input into Microsoft Excel and Google Spreadsheets. Thematic analysis was used to code and analyse the data collected. The findings of the study demonstrated how digital innovation platforms facilitate a participatory approach in agricultural extension services. Furthermore, the research showed that agricultural information from iShamba has benefited 94% of farmers and there was perceived productivity among 37% of farmers in Nyeri. The findings indicate how agricultural digital innovation platforms, specifically iShamba, have influenced Nyeri farming practices. However, 6% did not benefit, demonstrating how digital innovation must produce precise, comprehensive, innovative, and localised agricultural information to effectively replace traditional agricultural extension services, which are increasingly insufficient.

DEDICATION

I dedicate this thesis study to my family, who have continued to sacrifice much for me to be where I am now and complete my studies. This is also a dedication to organisations whose goal is to aid farmers with agricultural information in every manner feasible to increase productivity and hence ensure food security.

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