

**Social Capital and Technology Adoption on Small Farms: The Case  
of Banana Production Technology in Uganda.**

by

**Enid Mbabazi Katungi**

Submitted In partial fulfilment of the requirements for the Degree of

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## **DECLARATION**

I declare that the dissertation, which I hereby submit for the degree of Doctor of Philosophy in Agricultural Economics at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other University.

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**DEDICATION**

To: Stephen, Davis, Daphine and my parents

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**Degree:** Doctor of Philosophy (Agricultural Economics)  
**Department:** Agricultural Economics, Extension and Rural Development, University of Pretoria  
**Supervisor:** Professor Charles L Machethe  
**Co-supervisor:** Dr Melinda Smale

### **ABSTRACT**

In recent years, development practitioners and policy makers have increasingly become interested in social capital as an additional instrument for economic development. However, within the applied economics literature on the adoption of agricultural technologies, research on the role of social capital in adoption decision-making is scant. Furthermore, there is a paucity of information regarding the determinants of social capital accumulation among rural households in developing economies. This study examines the nature of the relationship between social capital and crop management decisions of Ugandan banana farmers.

This dissertation develops a model of technology adoption that incorporates social capital and offers two explicit mechanisms through which social capital may influence technology adoption. A model of the agricultural household, which considers the effects of incomplete markets in farm production decisions, provided the theoretical framework for an econometric analysis to predict the choice and demand of improved banana management technology. The core theoretical framework was extended by explicitly incorporating social capital as a component of exogenous income and information accumulation processes.

Empirical analysis was based on the primary data collected in a survey of 400 banana-producing households in Uganda through face-to-face interviews with the primary production decision makers. The households were selected from the three major banana-producing regions of Uganda using multi-stage random sampling methods.

A combination of econometric methods was employed. A Probit model was used to estimate the probability of using an improved banana management practice and participation in an association. The extent of use of improved banana management practices was estimated by two methods, namely, ordinary least squares (OLS) and the Heckman procedure to account for sample selection in some equations. Intensity of participation in associations was estimated with a Poisson model. A negative binomial model that allows for over dispersion in the data was employed to identify the determinants of the intensity of participation in private social networks.

The results of the study indicate that different aspects of social capital shape the decision to use and the extent of use of an improved management practice, but the nature of effect is specific to the practice as well as the form of social capital. Participation in associations and the characteristics of those associations are important determinants of banana production management decisions. Participation in associations and private social networks is, in turn, influenced by household wealth, education, institutional environment, and social heterogeneity of the community. Aside from social capital, other factors that are significant in explaining variation in use of improved crop management practices among farmers have been identified. Market incentives and household factor endowments were the most important of these factors in decisions regarding use of improved banana management practices. The existence of separability between consumption and production decisions, a major analytical feature of the model of the agricultural household, also appears to be practice-specific, which suggests that production orientation is associated with the use of practices.

Key words: Social capital, technology adoption, Bananas, Uganda.

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## ACRONYMS AND ABBREVIATIONS

BBW	Banana Bacterial Wilt
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
IFPRI	International Food Policy Research Institute
INIBAP	International Network for the Improvement of Banana and Plantain
Km	Kilometre
LC	Local Council
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MFEPD	Ministry of Finance, Economic Planning and Development
NARO	National Agricultural Research Organization
NGO	Non-governmental Organization
R&D	Research and Development
SD	Standard Deviation
SWC	Soil and Water Conservation
UBOS	Uganda Bureau of Statistics
Ugsh	Uganda Shilling