

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

by

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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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### **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.

## TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	4
ABSTRACT.....	6
LIST OF TABLES .....	12
LIST OF FIGURES .....	14
ACRONYMS AND ABBREVIATIONS .....	15
CHAPTER 1: INTRODUCTION .....	<b>Error! Bookmark not defined.</b>
1.1. Background .....	<b>Error! Bookmark not defined.</b>
1.2. Statement of the research problem .....	<b>Error! Bookmark not defined.</b>
1.3. Objectives of the study .....	<b>Error! Bookmark not defined.</b>
1.4. Hypotheses .....	<b>Error! Bookmark not defined.</b>
1.5. Organization of the dissertation.....	<b>Error! Bookmark not defined.</b>
CHAPTER 2: BANANA PRODUCTION AND ITS ECONOMIC IMPORTANCE IN UGANDA .....	<b>Error! Bookmark not defined.</b>
2.1 The economic importance of bananas ...	<b>Error! Bookmark not defined.</b>
2.2. Banana production .....	<b>Error! Bookmark not defined.</b>
2.3 Banana production management technology .....	16
2.4. Dissemination of banana management practices.	<b>Error! Bookmark not defined.</b>
2.5. Factors affecting banana production .....	<b>Error! Bookmark not defined.</b>
2.5.1. Characteristics of improved banana management technology....	<b>Error! Bookmark not defined.</b>
2.5.2. Socio-economic factors.....	<b>Error! Bookmark not defined.</b>
2.6. Summary .....	<b>Error! Bookmark not defined.</b>
CHAPTER 3: DETERMINANTS OF TECHNOLOGY ADOPTION .....	<b>Error! Bookmark not defined.</b>
3.1. Determinants of farm-level adoption behaviour in the literature ....	<b>Error! Bookmark not defined.</b>
3.2. Determinants of the adoption of low external input crop management technologies .....	<b>Error! Bookmark not defined.</b>
3.3. The role of institutions and social networks in adoption decisions.	<b>Error! Bookmark not defined.</b>
3.4. Agricultural household models and technology adoption .....	<b>Error! Bookmark not defined.</b>



3.5. Summary .....	<b>Error! Bookmark not defined.</b>
CHAPTER 4: SOCIAL CAPITAL AND TECHNOLOGY ADOPTION .....	<b>Error!</b>
<b>Bookmark not defined.</b>	
4.1. Manifestations and definitions of social capital in the literature .....	<b>Error!</b>
<b>Bookmark not defined.</b>	
4.1.1. Manifestations of social capital .....	<b>Error! Bookmark not defined.</b>
4.1.2. Social network definition of social capital.....	<b>Error! Bookmark not defined.</b>
4.2. Social networks and technology adoption .....	<b>Error! Bookmark not defined.</b>
<b>defined.</b>	
4.2.1. Social network and information accumulation .....	<b>Error! Bookmark not defined.</b>
4.2.2. Social networks, bilateral transfers and technology adoption.....	<b>Error! Bookmark not defined.</b>
<b>not defined.</b>	
4.3. Overview of the literature on the determinants of social capital.....	<b>Error!</b>
<b>Bookmark not defined.</b>	
4.3.1. Determinants of participation in associations .....	<b>Error! Bookmark not defined.</b>
4.3.2. Determinants of private social networks .....	<b>Error! Bookmark not defined.</b>
4.4. Summary .....	<b>Error! Bookmark not defined.</b>
CHAPTER 5: CONCEPTUAL FRAMEWORK: CHOICE OF A CROP MANAGEMENT TECHNOLOGY IN AN AGRICULTURAL HOUSEHOLD MODEL WITH SOCIAL CAPITAL.....	<b>Error! Bookmark not defined.</b>
5.1. Choice of a crop management technology under incomplete markets .....	<b>Error! Bookmark not defined.</b>
5.2. Choice of a crop management technology when markets are complete .....	<b>Error! Bookmark not defined.</b>
5.3. Choice of a crop management technology under technology relevance uncertainty.....	<b>Error! Bookmark not defined.</b>
5.4. A summary of the household choice of a crop management technology .....	<b>Error! Bookmark not defined.</b>
5.5. Concluding remarks .....	<b>Error! Bookmark not defined.</b>
CHAPTER 6: DATA SOURCES AND SAMPLE CHARACTERISTICS .....	<b>Error!</b>
<b>Bookmark not defined.</b>	
6.1. Data sources .....	<b>Error! Bookmark not defined.</b>
6.2. Sampling frame .....	<b>Error! Bookmark not defined.</b>
6.3. Selection of the sub-samples for the present study....	<b>Error! Bookmark not defined.</b>
<b>not defined.</b>	
6.4. Data collection methods .....	<b>Error! Bookmark not defined.</b>
6.5. Basic characteristics of the sample .....	<b>Error! Bookmark not defined.</b>
6.6. Summary .....	<b>Error! Bookmark not defined.</b>
CHAPTER 7: MEASUREMENT AND ESTIMATION PROCEDURES.....	<b>Error!</b>
<b>Bookmark not defined.</b>	

7.1. Econometric estimation procedure .....	<b>Error! Bookmark not defined.</b>
7.1.1. Data aggregation, reduction and factor analysis ....	<b>Error! Bookmark not defined.</b>
7.1.2. Econometric modeling and estimation of banana production management decisions .....	<b>Error! Bookmark not defined.</b>
7.1.3. Econometric estimation of household participation in associations and private social networks .....	<b>Error! Bookmark not defined.</b>
7.2. Definition and measurement of variables .....	<b>Error! Bookmark not defined.</b>
7.2.1. Econometric approaches in technology adoption studies ....	<b>Error! Bookmark not defined.</b>
7.2.2. Dependent variables for adoption models .....	<b>Error! Bookmark not defined.</b>
7.2.3. Dependent variables for social capital models.....	<b>Error! Bookmark not defined.</b>
7.2.4. Independent variables used in adoption equations.	<b>Error! Bookmark not defined.</b>
7.2.5. Independent variables used in social capital models .....	<b>Error! Bookmark not defined.</b>
7.3. Summary .....	<b>Error! Bookmark not defined.</b>
CHAPTER 8: DESCRIPTIVE STATISTICS ON BANANA MANAGEMENT AND SOCIAL CAPITAL .....	<b>Error! Bookmark not defined.</b>
8.1. Banana management .....	<b>Error! Bookmark not defined.</b>
8.2.1. Local associations .....	<b>Error! Bookmark not defined.</b>
8.2.2. Characteristics of associations .....	133
8.2.3. Household private social networks .....	<b>Error! Bookmark not defined.</b>
8.2.4. Bilateral transfers .....	<b>Error! Bookmark not defined.</b>
8.3. Summary .....	<b>Error! Bookmark not defined.</b>
CHAPTER 9: RESULTS OF THE STUDY .....	<b>Error! Bookmark not defined.</b>
9.1 The decision to use improved management practices	<b>Error! Bookmark not defined.</b>
9.1.1. Effect of household characteristics .....	<b>Error! Bookmark not defined.</b>
9.1.2. Effect of farm characteristics .....	<b>Error! Bookmark not defined.</b>
9.1.3. Effect of market factors and characteristics.....	<b>Error! Bookmark not defined.</b>
9.1.4. Effect of information diffusion parameters.....	<b>Error! Bookmark not defined.</b>
9.1.5. Effect of social capital .....	<b>Error! Bookmark not defined.</b>
9.1.6. Likelihood ratio test of joint significance of groups of factors...	<b>Error! Bookmark not defined.</b>
9.2. Extent of use of management practices	<b>Error! Bookmark not defined.</b>
9.2.1. Effect of household characteristics .....	<b>Error! Bookmark not defined.</b>
9.2.2. Effect of farm characteristics .....	<b>Error! Bookmark not defined.</b>
9.2.3. Effect of market factors and characteristics.....	<b>Error! Bookmark not defined.</b>
9.2.4. Effect of information diffusion parameters.....	<b>Error! Bookmark not defined.</b>
9.2.5. Effect of social capital variables .....	<b>Error! Bookmark not defined.</b>
9.2.6. Joint significance test of a group of factors .....	<b>Error! Bookmark not defined.</b>
9.3 Determinants of household social capital .....	<b>Error! Bookmark not defined.</b>
9.3.1. Membership in associations.....	<b>Error! Bookmark not defined.</b>
9.3.2. Social capital intensity at the household level .....	<b>Error! Bookmark not defined.</b>
CHAPTER 10: SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS .....	<b>Error! Bookmark not defined.</b>

10.1. Summary of the study .....	<b>Error! Bookmark not defined.</b>
10.1.1 Background.....	<b>Error! Bookmark not defined.</b>
10.1.2. Purpose of the study.....	<b>Error! Bookmark not defined.</b>
10.1.3. Research methods .....	<b>Error! Bookmark not defined.</b>
10.2 Major findings of the study.....	<b>Error! Bookmark not defined.</b>
10.2.1 Use of banana management practices .....	<b>Error! Bookmark not defined.</b>
10.2.2 Determinants of use of banana management practices .....	<b>Error! Bookmark not defined.</b>
10.2.3 Social capital in the banana-growing areas.....	<b>Error! Bookmark not defined.</b>
10.2.4 Determinants of social capital.....	<b>Error! Bookmark not defined.</b>
10.3. Implications for policy .....	<b>Error! Bookmark not defined.</b>
10.3.1. Implications of social capital as an asset in agricultural development .....	<b>Error! Bookmark not defined.</b>
10.3.2 Improving the smallholder access to markets.....	<b>Error! Bookmark not defined.</b>
10.3.3 Implications for banana production management technology ..	<b>Error! Bookmark not defined.</b>
10.4. Limitations of the study and recommendations for future research .....	<b>Error! Bookmark not defined.</b>
10.4.1 Additional mechanisms through which social capital influences the adoption of management technologies.....	<b>Error! Bookmark not defined.</b>
10.4.2 Gender and social capital formation .....	<b>Error! Bookmark not defined.</b>
10.4.3 Measurement of social capital .....	<b>Error! Bookmark not defined.</b>
10.4.4 Scale of the data used to analyse the determinants of social capital.....	<b>Error! Bookmark not defined.</b>
10.4.5 Modeling and estimation approaches .....	<b>Error! Bookmark not defined.</b>
Appendix A. Farmer classification as of banana management practices according to whether the practice is considered to be ancestral or introduced.....	<b>Error! Bookmark not defined.</b>
Appendix B. Correlation matrix of explanatory variables used in the analysis...	<b>Error! Bookmark not defined.</b>
Appendix C. Estimation results for factors affecting use of improved banana management practices .....	<b>Error! Bookmark not defined.</b>
Appendix D: Estimation results of factors influencing social capital accumulation .....	<b>Error! Bookmark not defined.</b>

## LIST OF TABLES

- Table 1. “Head count” percentage of the Ugandan population living in households with a real private consumption per adult equivalent below the poverty line for their region ..... **Error! Bookmark not defined.**
- Table 2. Sources of information on banana management practices. **Error! Bookmark not defined.**
- Table 3. Selected indicators of social homogeneity in the rural villages of Uganda ..... **Error! Bookmark not defined.**
- Table 4. Sampling fractions for primary sampling units (PSUs) in the survey domain ..... **Error! Bookmark not defined.**
- Table 5. Survey sites (primary sampling units) as represented by elevation and diffusion status in Uganda ..... **Error! Bookmark not defined.**
- Table 6. Descriptive statistics of the surveyed sample **Error! Bookmark not defined.**
- Table 7. Rotated factor loadings of the soil fertility management practices on the four latent variables (indices)\* ..... **Error! Bookmark not defined.**
- Table 8. A likelihood ratio test for the null hypothesis that the coefficients on the two management decisions are the same ..... **Error! Bookmark not defined.**
- Table 9. Summary statistics of the adoption-dependent variables.. **Error! Bookmark not defined.**
- Table 10. Descriptive statistics of the social capital dependent variables ..... **Error! Bookmark not defined.**
- Table 11. Descriptive statistics of household characteristics ( $\Omega_{HH}$ )..... **Error! Bookmark not defined.**
- Table 12. Descriptive statistics of farm characteristics ( $\Omega_F$ ) ...**Error! Bookmark not defined.**
- Table 13. Descriptive statistics of market characteristics.....**Error! Bookmark not defined.**
- Table 14. Descriptive statistics of the parameters of information diffusion..... **Error! Bookmark not defined.**
- Table 15. Descriptive statistics of social capital variables ( $\Omega_{SS}$ ) ... **Error! Bookmark not defined.**
- Table 16. Household-level factors hypothesized to influence social capital ..... **Error! Bookmark not defined.**

- Table 17. Village-level factors hypothesized to influence social capital..... **Error! Bookmark not defined.**
- Table 18. Percentage of farmers using selected banana management practices, by elevation and exposure..... **Error! Bookmark not defined.**
- Table 19. Percentage of farmers using selected management practices by landholding size and infrastructure development..... **Error! Bookmark not defined.**
- Table 20. Share of banana mats managed with recommended practices among users ..... **Error! Bookmark not defined.**
- Table 21. Percentage of farmers who know about and use the recommended banana management practices..... **Error! Bookmark not defined.**
- Table 22. Percentage of households belonging to associations by elevation and infrastructure development ..... **Error! Bookmark not defined.**
- Table 23. Household membership in associations by region (%).... **Error! Bookmark not defined.**
- Table 24. Distribution of households by intensity of membership in associations (%) ..... **Error! Bookmark not defined.**
- Table 25. Percentage of households giving the major reasons for joining informal associations\* ..... **Error! Bookmark not defined.**
- Table 26. Average number of associations in a village by elevation and infrastructure development ..... **Error! Bookmark not defined.**
- Table 27. Percentage of households belonging to village informal associations by socio-economic characteristics ..... **Error! Bookmark not defined.**
- Table 28. Households belonging to informal village associations by group functioning (%) ..... **Error! Bookmark not defined.**
- Table 29. Size of the entire social network by relationship and occupation by elevation..... **Error! Bookmark not defined.**
- Table 30. Size of the entire social network by region. **Error! Bookmark not defined.**
- Table 31. Major purpose of transfers accruing to the household from its social network ..... **Error! Bookmark not defined.**
- Table 32. Household participation in bilateral transfers (%)..... **Error! Bookmark not defined.**

- Table 33. Average net transfers and the size of ex ante insurance social networks by elevation..... **Error! Bookmark not defined.**
- Table 34. A summary of the probit estimation of factors affecting the probability of using improved banana management practices.....**Error! Bookmark not defined.**
- Table 35. Results of the likelihood ratio test of the joint significance of hypothesized factors in the decision to use specific management practices..... **Error! Bookmark not defined.**
- Table 36. Estimation of the factors influencing the extent of use of selected banana management practices ..... **Error! Bookmark not defined.**
- Table 37. Results from the F-test of the joint significance of hypothesized factors in the extent of use of management practices **Error! Bookmark not defined.**
- Table 38. Probit estimation of the factors influencing membership in associations (standard errors in parentheses) ..... **Error! Bookmark not defined.**
- Table 39. Factors affecting the intensity of membership in associations and private social networks at the household level..... **Error! Bookmark not defined.**

## LIST OF FIGURES

- Figure 1. Area planted with major food crops in Uganda **Error! Bookmark not defined.**
- Figure 2. Proportion of agricultural households with banana plots in Uganda ..... **Error! Bookmark not defined.**
- Figure 3. Trend in banana production from 1961 to 2003 .....**Error! Bookmark not defined.**
- Figure 4. A socio-economic model of the decision-making process for the use of improved banana management practices ... **Error! Bookmark not defined.**
- Figure 5. Sample Domain: elevation overlaid with exposure/non-exposure ..... **Error! Bookmark not defined.**
- Figure 6. Sites sampled for the first survey ..... **Error! Bookmark not defined.**

## 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