An Assessment of Small-Scale Farmers' Entrepreneurship Skills in Zambia's Chongwe District

A Research Report Presented to the Department of Agricultural Economics and Extension Education of the University of Zambia.

BY

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ABSTRACT

An Assessment of Small-Scale Farmers' Entrepreneurship Skills in Zambia's Chongwe District

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The main objective of this study was to determine entrepreneurship skills and development levels among small scale farmers. It is based on sample survey data from Chongwe district of Lusaka Province of Zambia. Collected data was analyzed in Statistical Package for Social Sciences (SPSS) to generate descriptive statistics. Frequency distribution tables were generated to calculate each response as a percentage of the total responses available for a particular question. The study considered characteristics of the beneficiaries such as the level of education, experience in farming, gender and age.

In terms of the entrepreneurship skills that were used to assess the farmers' entrepreneurship skill development level, most farmers considered themselves that they were moderately skilled in networking and utilising contacts (47.8%) followed by creating and evaluating a business strategy (46.7%). Recognizing and realizing opportunities was the least among the three listed entrepreneurial skill that farmers (27.2%) indicated were moderately skilled. However, indications were also that majority (41.3%) farmers considered themselves being somewhat skilled in recognizing and realizing opportunities. when asked how important they considered these skills. The highest responses were obtained with regard to skills pertaining to both networking and utilising contacts; and creating and evaluating a business strategy. Each of which was rated very important by majority farmers (46.7% i.e. for each one)

In view of the findings, it is recommended that government should introduce direct incentives in order to encourage farmers to take advantage of existing education and extension offers or participate in projects for youth entrepreneurs. Furthermore, offer more entrepreneurship skills promotional activities aimed at enhancing existing skills

CHAPTER ONE
INTRODUCTION

1.1 Background

In agricultural economics, it has not been very popular to view farming from the perspective of entrepreneurship (Knudson et al., 2004), even though the development of farm businesses in terms of economic rationality has been a major concern in these disciplines (Gasson & Errington 1993). However in the farm management research, the issues of strategic management and competitive advantage are obviously relevant for the entrepreneurship concept. For example, in the studies reviewed by Poppe and Mejl (2004), considerable differences in economic performance between farms have been observed. Following Porter (1980), these differences may be may be attributed to the use of strategies which generate competitive advantage, either in terms of low costs or differentiation. The resource-based theory of competitive advantage emphasises tangible and intangible resources as crucial strategic factors. Viewed from these perspectives, the role of an individual farmer as an entrepreneur who uses the strategies and the resources, as well as above-normal profits as an objective of the farm, appears as essential elements in farming (Poppe & Mejl).

In social sciences, it has been common to approach farming as family business which does not conform to the image of market driven, profit seeking enterprise. According to Gasson and Errington (1993, 37) "the primary aim of many family businesses is not to maximise profits but to maintain control and pass a secure and sound business to the next generation." Farmers are said to have been detached from the market logic, and for this reason they have been identified as peasants rather than entrepreneurs (Ploeg 2003). Further, it has been claimed that the self-identity of farmers is firmly and persistently based on the role of a producer, rather than on the role of an entrepreneur (Burton & Wilson 2006).

In agricultural and rural sociology, entrepreneurship has normally been associated with risk-taking and profit maximising orientation. Salamon (1982), for example, noted the existence of such an orientation among Midwest farmers in 1980's. According to her, the entrepreneurial farmers "energetically devise strategies, driven to expand, innovate, increase profits, or improve the family's social standing" (1992, 98). Similarly Ploeg (2003) connects entrepreneurship to the profit maximisation and the scale enlargement, which according to him has been a key trend in the structural development in many Midwest countries. Ploeg is

critical towards this trend, which he claims is based on an erroneous and virtual idea of an entrepreneur farmer.

This type of emphasis on the profit maximisation through scale enlargement, and the risk-taking related to it, is one possible way to define entrepreneurship in the farm business. There are alternative view points. However, worth an immediate notice is that ploeg (2003) and Salamon (1992) equate farming the agricultural primary production, when they associate entrepreneurship to increasing profits through expanding the farm. This is noteworthy, because the conventional primary production implies, typically that the business is based on the bulk production and the farm is positioned at the bottom of a vertical commodity chain in the food industry.

Alternative way to approach entrepreneurship on farms would be to put emphasis on the value adding activities, such as processing food or direct sales, and developing niche products. Unlike mere scale enlargement in the bulk production, the value adding activities are tailor-made for changing the position of the farm in relation to the commodity chains and the processes in which the value is generated. In many countries, regions, and sectors, the value adding activities have not been conventional on the farms; in this respect they can be viewed as novelties or innovations. Thus, if one accepts innovation as a key element in entrepreneurship, it seems feasible to associate entrepreneurship on farms especially with the value adding activities (Knudson et al., 2004).

Still another way would be to switch the attention to the non-farm business diversification: the engagement in the non-food business activities, such as tourism, care, or machine contracting. Again, these could be viewed as innovations simply because they deviate from conventional farming, i.e. from the agricultural primary production. In addition to the aspect of innovation, the start-up and the development of the new non-food business as such could be based used as a justification to view business diversification as entrepreneurship. This applies, of course, to such business activities which add value in the food production. Indeed, a wide definition of the on-farm business diversification covers also, for example, the farms with food processing and direct selling businesses.

Thus, in addition to the profit maximization through scale enlargement, it is possible to define entrepreneurship in the farm business, for example, as innovation which is manifested in the value adding activities in the food sector and more generally in the business diversification on farms. Ploeg (2003, 339-341), as a matter of fact, draws also attention to the value adding

activities and the business diversification on farms, and stresses that these represent a new but increasingly important current in the development of farms. However, Ploeg does not associate these activities with entrepreneurship. Instead, he frames them as rural development practices, and suggests that the farms which are engaged in these activities represent multifunctional or multipurpose enterprises.

Turning to the multidisciplinary study of entrepreneurship, it must be stated that farming has not been a popular context for studying entrepreneurship, until recently. Some studies have dealt with entrepreneurship in the business activities related to processing and marketing the farm products (e.g. Barth 2000; Lindh de Montoya 2000), but the primary production on the farms has been largely invisible. Against this background, it is highly interesting that in recent years several studies have been published on the farm businesses, focussing especially on the business diversification on farms. In most of these studies, the view point of entrepreneurship is explicitly stated and utilised (Carter 2006).

1.2 Problem Statement

However, even though one might detect changes in the farm business and how they are run, a common assumption is that there is not enough entrepreneurship among farmers. By these changes, farmers have the possibility to benefit from market opportunities and to make more responsibility for the success of their businesses. In order to do this, farmers will have to develop their managerial and entrepreneurial abilities and become more businesslike. Unfortunately, in developing countries like Zambia, incentives to farmers such as subsidies have made farmers look towards the state for signals about farm management rather than to anticipate, or to innovate as individual farm business managers. In this respect farmers have become reactive rather than proactive. Additionally, farm associations and other collective bodies have been oriented to administering and lobbying for farmers' incentives rather than to develop capacities of their members in terms of entrepreneurship. The same could be said of farm education institutions, colleges and universities.

The social and economic environment of farming should not be underestimated when studying and promoting the development of entrepreneurship skills. As entrepreneurship can be seen as a system of innovation, it can only be improved when the entire agricultural socio-technical network is involved in the process. Thus strategies to stimulate and strengthen the

entrepreneurship culture of the farming business and to contribute to sustainable development in rural areas as needed.

Therefore, the primary concern of this study is to recommend ways how conditions of the social, economic, political and cultural framework can be changed in order to facilitate the adoption of entrepreneurship skills for farmers and how farmers themselves can improve their entrepreneurship skills.

1.3 Objectives

1.3.1 General Objective

The objective of the study is to determine the entrepreneurship skills and development levels among small scale farmers.

1.3.2 Specific Objectives

The specific objectives are;

- To identify various entrepreneurship skills and development levels among small scale farmers.
- To identify factors hindering and/or stimulating development of entrepreneurship skills among small scale farmers.

1.4 Rationale

The rationale for focusing on farm entrepreneurship is that in many instances it is impossible to obtain start-up funds without demonstrating proof of concept together with commensurate abilities required to execute such an initiative. Those who fund entrepreneurs are looking to invest in people with a demonstrated ability to create change, and the factors that matter most are the financial, strategic, managerial, and innovative abilities of farm entrepreneurs. Therefore an investigation into the mix of managerial and entrepreneurship skills associated with successful farm entrepreneurs is of prime importance for the study.

1.5 Organization of the Report

This thesis opens with chapter one which highlights the background information about the subject. It covers the problem statement, objectives, scope of study, and rationale of the study. Chapter two focuses on literature review in which the definitions of entrepreneurship, changing perspectives in the farm business, entrepreneurship skills in the farm business, successful farm entrepreneurship and Opportunity recognition/exploitation in entrepreneurship are discussed. Chapter three looks at the methodology that was used for the study. It encompasses the research design, description of the data collection procedure, sampling design and data analysis. Chapter four highlights the findings and interpretation of the findings of the study, while chapter five looks at conclusion and recommendations based on the findings of the study.

1.6 Hypotheses

a) The mix of skill items required for successful farm entrepreneurs will reflect distinct factor structures.

b) There are significant differences in factor structures for farm entrepreneurs.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter discusses the meaning and definitions of entrepreneurship. It then highlights the changing perspectives on farm entrepreneurship, the entrepreneurship skills in the farm business, the successful farm entrepreneurship and the opportunity recognition/exploitation in entrepreneurship and the conceptual models used to explain the entrepreneurship skills and development levels among small holder farmers.

2.2 Definitions of Entrepreneurship

The problem of definition is not confined to entrepreneurship for there are also issues of conceptualisation when terms such as 'farms' or 'the farm' are used. Furthermore, argue, Beedeli and Rehman (2000) to understand the phenomenon necessitates understanding farmer's attitudes and motivation in an environmental/conservation awareness context.
For Dollinger (2004) entrepreneurship is the creation of an innovative economic organization (or network of organizations) for the purpose of gain or growth under conditions of risk and uncertainty. The definition however assumes that all farmers are engaged in the farm business for financial gain or growth.

According to Gray (2002.61), entrepreneurs are individuals who manage a business with the intention of expanding that business and with the leadership and managerial capabilities for achieving their goals.

What is clear is that many small business owners perceive themselves as entrepreneurs, running a small business and being an entrepreneur is not the same thing. For Corman and Lussier (1996) the ability to operate an organization requires different skills and abilities than those required for being an entrepreneur. For example, successful long term operation of a business requires managerial skills, while being an entrepreneur requires innovative skills.
According to the EU Green Paper, Entrepreneurship is the mindset and process to create and develop economic activity by blending risk-taking, creativity and/or innovation with sound management, within a new or existing organization'(ibid.7).

For de lauwwere, Verhaar, and Dost (2002) the definition of entrepreneurship in agriculture has changed during over the years. In the past being a good entrepreneur was being a good craftman, whilst striving for a high level of production and product quality and making efficient use of inputs (labour, nutrients, crop protection and energy). The focus on craftsmanship to be cost efficient need now to be combined with the challenge for sustainable production through finding a balance between people, planet and profit. According to Smit, (2004), entrepreneurship has become probably the most important aspect of farming and will increasingly continue to be so.

For Corman and Lussier (1996) the importance of adopting community, ethical and social responsibilities as a way of doing business is becoming increasingly necessary to the success of the farm business.

2.3 Changing Perspectives on Farm Entrepreneurship

For Duczkowska-Malysz (1993) farm entrepreneurship equates to all activities, which help the farmers to adjust to a free market economy. According to Firlej K. (2001) the development of entrepreneurship means also a change of the quality of management in the process of farming. The necessary condition for risk reduction in activities other than farming in rural areas necessitates the organization and support of local community government. For Zmija (2001) entrepreneurial development in rural areas has been connected with multifunctional rural development. The aims of entrepreneurial development in agribusiness are modernization and reconstruction of fragmented agriculture, building an agriculture environment and creating new jobs in rural areas.

Effective diversification does not specifically depend on the farms external environment and the threats and opportunities which that environment offers; to diversify farmers need to be externally aware and have the capacity and capability to diversify. Diversification should improve the economic viability of the farm business and reduce the dependence on the production of primary subsidized agricultural commodities.

2.4 Entrepreneurship Skills in the Farm Business

Some studies have focused on the question of entrepreneurship skills in the farm business. Kodithuwakku and Rosa (2002) conducted an in-depth study on 49 small-scale farmers in Sri

Lanka. They observed clear differences in the economic success among farmers, generated during a period of twelve years. According to their results, the successful famers were better able to mobilize resources through social networks and they were pursuing multiple opportunities. As a rule, they had started additional business to complement the paddy cultivation. Further, they had good management skills as well as entrepreneurship skills, and they were able to combine these skills.

Most of the unsuccessful commercial farmers were found to be lacking essential managerial skills (particularly marketing skills). These farmers had all the entrepreneurship qualities of the successful farmers (strategic and focused pursuit of opportunities, the creative means to mobilize resources, the ability to diversify and become pluriactive). However, they sooner or later failed, largely through mismanagement caused by the inability to deal with efficient resource allocation.

According to these authors, especially in a constrained environment, where the resources are scarce, the importance of the entrepreneurship opportunity skills is emphasized. Anyhow, they stress that management skills and entrepreneurship skills and interdependent.

2.5 Successful Farm Entrepreneurship

Schiebel (2002) showed that successful entrepreneurs differ in terms of three personality traits (success factors):

- Locus of control of reinforcement (belief in the ability to control events)
- Problem solving abilities social initiative (the construct is a measure of thee socialization process and acts as a second estimate of control of reinforcement);
- Social initiative is expressed through a person's dominance, liveliness, social boldness and abstractedness.

However, this position of management and business capability and the extent to which farmers are entrepreneurs namely by Carter (1998), Carter and Rosa (1998), McNally (2001) and Borsch and Forsman (2001) who suggest that the methods used to analyze business entrepreneurs in other sectors can be applied to farmers. In essence for carter (1998) farmers have traditionally been entrepreneurs. Indeed Carter and Rosa argue that farmers are primarily business owner managers and that farms can be characterized as businesses. Carter draws parallels between portfolio entrepreneurship in non-farm (business) sectors and farm pluriactivity. She suggests that farmers have multiple business interests and these (whilst

counted alongside the central farm aspect) offer a lot to farm employment creation and rural economic development.. Eilkeland and Lie (1999) argue that pluriactive farmers are entrepreneurship, but as Alsos *et al.*, (2003) acknowledge 'there is still a paucity of knowledge about which factors trigger the start-up of entrepreneurship activities among farmers'.

2.7 Opportunity Recognition/Exploitation in Entrepreneurship

Man et al., (2002) categorized entrepreneurship competences in six key areas of related competences. The key clusters are opportunity, relationship, conceptual, organizing, and strategic and commitment competences. Opportunity competences can be described as competences related to recognizing and developing market opportunities through various means. In a recent review on entrepreneurship research Busenitz et al., (2003) conclude that research at the boundary of constructs of individuals, opportunities, modes of organizing and the environment will present important areas for entrepreneurship research. Others argue that the domain of discovering and pursuing opportunities is one of the most promising candidates for a new framework of entrepreneurship competences. Moreover, most research on entrepreneurship investigates the entrepreneurship progress after opportunities have been discovered, and do not include the learning process that underlines this process (Shane, 2000).

2.7 Conceptual Framework

Most of the time, the data obtained from surveys like Entrepreneurship Skills are ordered with more than two categories. In such cases, the respondents are asked questions according to some scale of a multiple category (polychotomous rather than dichotomous) outcome which is not nominal but ordinal. It is well known that the Multinomial Logistic Model (MLM), or frequently called as the baseline logit model would not consider the ordinal nature of the outcome and hence the estimated odds ratios may not interpret the analysis properly (Hosmer and Lemeshow (2000)). Nor would the Linear Probability Model (LPM) be appropriate, because the predictions using the ordinary least squares would not look like true probabilities due to the difficulty, among others, of constraining them to the 0-1 interval. In this paper, we use the Ordinal Logistic Model (OLM) which takes into account the rank ordering of the outcome in terms of cumulative logits while preserving the proportional odds (PO) assumption. This amounts to asserting that the effect of each independent variable is

identical for all relative cumulative probabilities. To prove this, Zwan, Thurik and Grilo (2007) used OLM to interpret the results of the Flash Eurobarometer Survey on Entrepreneurship.

Therefore, a natural order may exist for some polychotomous dependent variables. Unlike the multinomial model, the ordered version takes into account the categories having a natural ranking which may in turn be interpreted as showing the magnitude of some underlying continuous latent (unobserved) index. The OLM specifies the entrepreneurship skills aspirations of entrepreneurs to be a linear function of the characteristics of the respondents in the survey, and an error term.

Each expected level of entrepreneurship possessed by entrepreneurs corresponds to a particular range of entrepreneurship skills index, whose limits are determined by some threshold (intercept) values with higher expected level of entrepreneurship corresponding to a higher range entrepreneurship skills of entrepreneurs. Consider for example the case of an entrepreneur whose current expected level of entrepreneurship falls in the first category. If his/her entrepreneurship skills index were to increase, it would eventually exceed the value of the expected level of entrepreneurship possessed by the entrepreneur that determines the boundary between the first and the second category, and the entrepreneur would therefore choose the second category (Becker and Kennedy ,1992).

Estimation of Ordered Logit Model

A motivation for the proportional odds structure of OLM has therefore reference to a model with an underlying continuous latent regression $yi^* = \alpha + \Sigma\beta k_x k+\varepsilon_i$ (1) where yi^* is the unobservable Entrepreneurship skills (Ents) index of a given entrepreneur in our case, $i=1,2,...N$, α is the constant term, ε_i is an error term whose distribution is assumed to be logistic (rather than normal (probit) or extreme value), and the summation is over $k=1,2,...K$ independent variables or covariates xk's with coefficients βk's in a sample of size N. The entrepreneurs have their own intensity of feelings of entrepreneurship skills depending on such measurable factors, xk's, and a certain error term, εi, describing some additional factors showing their encouragement or discouragement to affect the skill index.

Suppose the underlying process to be characterized is

$$y* = x'\beta + \epsilon,$$

Where y^* is the exact but unobserved dependent variable (perhaps the exact level of agreement with the statement proposed by the pollster); **x** is the vector of independent

variables, and β is the vector of regression coefficients which we wish to estimate. Further suppose that while we cannot observe y^*, we instead can only observe the categories of response

$$y = \begin{cases} 0 \text{ if } y^* \leq \mu_1, \\ 1 \text{ if } \mu_1 < y^* \leq \mu_2, \\ 2 \text{ if } \mu_2 < y^* \leq \mu_3 \\ \vdots \\ N \text{ if } \mu_N < y^*. \end{cases}$$

Then the ordered logit technique will use the observations on y, which are a form of censored data on y^*, to fit the parameter vector β.

- Dependent variable (y)= entrepreneurial skills (ENTS)
- Independent variables:
    1. Male – Indicator coded 1 for males and 0 for females
    2. Age – Continuous variable giving respondents age in year.
    3. Educ – Continuous variable giving the number of years of schooling completed.
    4. Experience

Ordered Logistic Regression Model

Latent continuous variable model specification (logistic error term)

$Yi^* = \beta_o + \beta_1 x_{1j} + ... + \beta_p x_{pi} + \varepsilon_i$

Entrepreneurial Skills $= \beta_o + \beta_1$ (MALE)$+ \beta_2$ (AGE) $+ \beta_3$ (EDUC) $+ \beta_4$ (EXP)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methods and procedures used to achieve the stated goals. It gives information on the area of study, research design, sampling procedure, data collection and data analysis tools that were used in the study.

3.2 Area of Study

The study was undertaken in Chongwe district of Lusaka province. It covered five agricultural villages namely I, J, K, A and B Villages in Kanakantapa Resettlement Scheme. It is situated in Lusaka Province of Zambia, Southern Africa. It is located 45 kilometres and 20-30 minutes drive from Lusaka, the capital city of Zambia. It lies in the medium rainfall belt of the country (region ii). The area has great agriculture potential and the indigenous people are called the Soli People. The area has over 5,000 peasant and small scale farmers whose main livelihood is agriculture. It is traditionally governed by senior chieftainess Nkomesha with the assistance of sub chiefs.

3.3 Research Design

The research design that was used is a case study under non experimental research design. A non experimental research design was selected because farmers in the target Villages were not divided into groups based on their similarities i.e. control and target groups but rather were considered as being part of one group. A case study was used so as to have a deeper understanding and knowledge of entrepreneurship skills and their development levels among small holder farmers.

3.4 Study Population and Sampling Procedure

A sample of 92 households was both randomly and purposively selected from the villages in the resettlement scheme. Random sampling was done using village registers and in instances

where village registers were missing, respondents were purposively sampled. A farm household was used as a sampling unit.

3.5 Data Sources and Collection Techniques

In this study, both primary and secondary data were collected. Primary data was collected from small scale farmers using structured questionnaires. This technique was selected because of the researcher's desire for quantitative data, which were analyzed statistically using computers. Besides a relatively good number of the farmers were illiterate. Secondary data was collected from various internet, final year university reports and relevant publications.

3.6 Data Analysis

The field data was analyzed in SPSS to produce descriptive statistics and the output was organized using Excel.

3.7 Limitations of the Study

In this research, a sample size of 145 small scale farmers was supposed to be sampled. Covering all sampled farmers was not possible because of the resources that were limited. Secondly, the gathering of information from some farmers was difficult using structured questionnaires because of illiteracy. This affected the interviewing process with farmers especially among households with no common language with the researcher. In such cases, an interpreter was used and this meant more time for data collection.

CHAPTER FOUR

STUDY FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the study findings. It begins with a presentation and discussion of the demographic characteristics. The knowledge the farmers have on entrepreneurship are presented and include recognising and realizing opportunities, networking and utilizing contacts and creating and evaluating business strategy marketing. The Ordinal Logistic Model regression estimates are also discussed.

4.2 Demographic Characteristics of the Farmers

Table 1 below shows that the majority of the farmers (58%) were males while (42%) were females. This situation arose due to the fact that there more of the male- headed household compared to female headed households interviewed in the survey areas. This finding is not very different from other rural farming communities in Zambia that are known to be headed more by males.

Table 1: Distribution of Farmers by Sex

Sex	Numbers	Percentage
Female	39	42
Male	53	58
Total	92	100

The results on distribution of farmers by age in table 2 below revealed that majority (62%) farmers ages ranged between 25 and 50 years. About 37% constituted those that were above 50 years while only 1% were below 25years. This implies that there are more employable farmers in surveyed communities to engage in various farm enterprises.

Table 2: Distribution of Farmers by Age

Age Group	Numbers	Percentage
Below 25 years	1	1.1
25 to 50 years	57	62.0
Above 50 years	34	37.0
Total	92	100

In terms of education, 65.2% of the farmers have been shown to have reached up to secondary education level, 12% attained a primary education level, 22.8 % attained up to tertiary education level as shown in Table 3 below. These statistics indicate that majority farmers in surveyed communities are literate to extent of being able to understand, learn and appreciate entrepreneurship skills in the farming business.

Table3: Distribution of Farmers by Education Level

Level of Qualification	Frequency	percentage
Primary	11	12.0
Secondary	60	65.2
Tertiary	21	22.8
Total	92	100

4.3 Occupation Prior to Farming and Position on the Farm.

Over one-third (i.e. 38%) of the interviewees as shown in the (table 4) appendix 1 indicated that they had worked in a non-agricultural occupation prior to farming. About 35% and 17.4% of the other interviewees indicated had no other occupation before farming and had worked in another agricultural occupation prior to taking responsibility of their farm, respectively. This result clearly demonstrates that majority (73.9%) farmers have had no prior experience with agricultural related activities.

Based on the options that interviewees had to select to indicate their position on the farm, majority (65%) farmers indicated that they were managing the farm on behalf of the owners who in most cases settled in town doing businesses and/or in formal employment. Those who indicated that they owned farms constituted 26.3% while the other 8.7% were renting pieces of land for their farming activities. See appendix 1(Table 4 & 5 below) provides a break of findings on interviewees occupation prior to farming and their position on the farm.

4.4 Skills Determination

Self assessment results for possessing the various entrepreneurship skills as presented in table 6 below reveal that most farmers consider themselves that they were moderately skilled in

networking and utilising contacts (47.8%) followed by creating and evaluating a business strategy (46.7%). Recognizing and realizing opportunities was the least among the three listed entrepreneurship skill that farmers (27.2%) indicated were moderately skilled. However, indications were also that majority (41.3%) farmers considered themselves being somewhat skilled in recognizing and realizing opportunities.

In addition, when asked how important they considered these skills. The highest responses were obtained with regard to skills pertaining to both networking and utilising contacts; and creating and evaluating a business strategy. Each of which was rated very important by majority farmers (46.7% i.e. for each one) as shown (in Table 6 &7) appendix1. These findings therefore illustrates that though respondents entrepreneurship skills exist, they remain relatively low as most consider themselves moderately skilled.

4.5 Ordered Logistic Regression Model

Based on the use of Ordered Logistic Regression Model, it is required that an interpretation of variables is made. In this case, for covariates such as age, the positive (negative) coefficients indicate positive (inverse) relationships between predictors and outcome. An increasing value of a covariate with a positive coefficient corresponds to an increasing probability of being in one of the "higher" cumulative outcome categories.

For factors such as education, gender, experience in farming, and entrepreneurship in this instance, a factor level with a greater coefficient indicates a greater probability of being in one of the "higher" cumulative outcome categories. The sign of a coefficient for a factor level is dependent upon that factor level's effect relative to the reference category.

With the aid of the regression model employed to test the factors that influence entrepreneurship skills of small scale farmers, the following results as shown in Table 12 below were obtained.

Table 8: Ordered Logistic Regression Model Results.

	Estimate	Standard Error	Significance test.
Constant =2	-3.973	1.238	0.001
Constant=3	-0.956	1.020	0.348
Constant=4	2.215	0.982	0.024
Age	0.025	0.014	0.04
Gender (male)	-0.077	0.330	0.816
Education (primary)	-1.432	0.711	0.044
Education (Secondary)	-1.579	0.574	0.006
Experience (5 years	0.051	0.805	0.549
Experince (10 years)	0.435	0.943	0.184
Experience (15 years)	-0.722	1.618	0.063

Age

The significance of the test for age in years was found to be (0.04) which is less than 0.05, suggesting that age effect is in this case significant. . Since its coefficient is positive (0.04), as age increases, so does the probability of being in one of the higher categories of entrepreneurship skills. The implication being that older farmers are more able to act in a more entrepreneurial manner, because of the life cycle of their farm organizations and their experience in business.

Gender

By contrast, Gender (with significance of the test = 0.816 which is less than 0.05) adds little to the model.

Experience in Farming

While there is no single category of experience in farming that is significant on its own, there are three that are marginally significant. Usually, it is worth keeping such a variable in the model, since the small effects of each category accumulate and provide useful information to the model. Interestingly, while those farmers with 15 years of farming experience are more likely to be in the lower outcome categories than those with less experience in farming, those with 5 years are less likely to be in the lower outcome categories. This entails that those farmers have more experience in farming increase their chances of being in one of the higher categories of entrepreneurship skills. The opposite is also true. Less experience reduces one's probability.

Education

Education also seems to be an important predictor on the model outcomes. Higher education has a positive effect on entrepreneurship qualities. The farmers who have attended higher education (i.e. tertiary education) or (i.e. secondary school education) stand a better chance of possessing entrepreneurship skills than those who have attended lower education (i.e. secondary school education) or (i.e. primary school education) respectively. Although agricultural education may mainly focus on professional and management skills, the training establishment is sufficient to teach and develop entrepreneurship skills. Innovative education and training concepts are necessary.

Factors Hindering/Stimulating Development of Entrepreneurship Skills

The questions in this study concerned the development of entrepreneurship skills. Respondents were asked to identify factors that hinder and/or stimulate the development of entrepreneurial skills in the case study.

The results showed that the entrepreneurship skills of a farmer do contribute to a success of a business. However, the skills explained only part of the variation in the success. This is matching with the view that in addition to skills, success is determined by situational factors, as well as by other individual factors such as certain attitudes and values (e.g. Pyysiainen et al. 2006). Individual factors that determine success were emphasised by the respondents.

Education, motivation, personality, personal interest and self identity were clearly identified as factors that hinder or stimulate the development of these skills. These factors seem to match well with the general idea that the entrepreneurship skills are learned. Education denotes the process of learning, but it also implies that besides the individual, some outside player are also involved in the development of the skills. Self identity, instead, refers more exclusively to the individual. Since the learning is something that concerns the individual, it seems reasonable to assume that self-identity, among other individual factors, contribute to the process of learning.

CHAPTER FIVE
CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the conclusion and recommendations of the study based on the findings and interpretations of the study.

5.2 Conclusion

A general conclusion on the basis of the results from this study is that while farmers interviewed mostly agree that entrepreneurship skills are important and relevant for their own business activities, there are differences between individual farmers concerning how skilful they are in terms of these skills. The differences, together with the idea that entrepreneurship skills can be learned, imply that it is possible to develop and improve these skills among farmers.

Hence, the development of entrepreneurship skills may be viewed as a learning process. This process is influenced by many factors, some of which are internal to the individual farmer, some external, and some are properly described as constituted by the relation between the individual and other factors. This perspective makes it possible to identify two alternative interpretations concerning the role of an individual in the process of learning skills.
The first alternative is that an individual farmer is a crucial factor (internal factor) that determines the learning process. This means that it is possible to enhance the development of entrepreneurship skills by trying to influence the individual, for example, to change his/her attitudes, motivation, intentions, abilities, values, and so on. The only limitation here is that it may be laborious to try to change the mind sets of individual farmers. Also it is important to note that learning does not occur in a vacuum, one needs a learning situation- a context for learning.

The second alternative is to place the emphasis on the factors that contribute to situations for learning. It is possible to enhance the development of entrepreneurship skills by trying to influence the learning context, for example to try to create situations and opportunities for learning, enhance and promote networks and contacts, and so on.

The results give rise to the level of entrepreneurship skills and about factors hindering and stimulating the development of entrepreneurship skills. Subsidies and extension services from government are some of the factors hindering and stimulating the development of entrepreneurship skills. In addition, some personal characteristics and attitude as well as the age and education level of the farmer are major factors that hinder or stimulate the development of entrepreneurship skills.

On the average, the respondents gave considerably higher scores to the importance of these skills than to their own skill level, implying that the skill level is not at all as high as it could be.

5.3 Recommendations

Based on the findings of the study and conclusions drawn, the following recommendations are in order.

It was observed that education levels are low, therefore, there is need to introduce direct incentives in order to encourage farmers to take advantage of existing education and extension offers or participate in projects for youth entrepreneurs.
In addition, more entrepreneurship skills promotional activities aimed at enhancing existing skills should be offered.

Since this research aimed not to explore all the factors which would possibly influence the development of the entrepreneurship skills, further research should be carried out on the factors determining farmers' motivation to use existing education and extension offers in connection with entrepreneurship and entrepreneurship skills.

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APPENDIX 1: OTHER TABLES EXPLAINING ENTREPRENEURSHIP

Table 4: Occupation Prior to Farming

Occupation Prior to Farming	Numbers	Percentage
No prior occupation	33	35.9
Agricultural related	16	17.4
Non agricultural related	35	38.0
Agricultural and non agric	8	8.7
Total	92	100

Table 5: Interviewees Position on the Farm+

Position on Farm	Numbers	Percentage
Owner	24	26.3
Manager	60	65
Tenant	8	8.7
Total	92	100

Table 6: How Skilful are You?

	In Creating & Evaluating a Business Strategy	In Networking and Utilizing Contacts	In Recognizing and Realizing Opportunities
Not at all skilled	2, 2.2%	1, 1.1%	26, 28.3%
Somewhat skilled	19, 20.7%	19, 20.7%	38, 41.3%
Moderately skilled	43, 46.7%	44, 47.8%	25, 27.2%
Fairly skilled	22, 23.9%	23, 25.0%	3, 3.3%
Very skilled	6, 6.5%	1, 4.3%	1, 1.2%
Total	92, 100%	92, 100%	92, 100%

Table 7: How Important do you Consider these Skills?

	Creating and Evaluating a Business Strategy	Networking and Utilizing Contacts	Recognizing and Realizing Opportunities
Not at all important	1, 1.1%	3, 3.3%	2, 3.1%
Somewhat important	3, 3.3%	3, 3.3%	5, 5.4%
Moderately important	17, 18.5%	19, 20.7%	19, 20.7%
Fairly important	29, 31.5%	27, 28.1%	5, 5.4%
Very important	43, 46.7%	43, 46.7%	19, 20.7%
Mean	4.2	4.20	4.11
Standard deviation	0.888	0.862	0.919

APPENDIX 2: QUESTIONNAIRE

Questionnaire serial number: ☐☐☐

An Assessment of Small-scale Farmers' Entrepreneurship Skills in Zambia's Chongwe District

Survey Instrument

This questionnaire is for academic purpose only. Be assured that all the information you provide will be treated as confidential as possible. Please feel free to answer all the questions honestly. Your cooperation will be highly appreciated.

Instructions: please tick and write the answers in the spaces provided.

Official use only

Section A

Demographic Data

1. Age..... ☐
2. Gender..... ☐
3. Do you consider yourself a manager? ☐
   a) Yes
   b) No
4. If no, why..... ☐
5. What year did you first take responsibility for managing a farm?..... ☐
6. What was your occupation prior to farming..... ☐
7. What is the highest qualification you hold?..... ☐
8. What is your primary position on the farm?..... ☐
9. What is your core farming business?..... ☐
10. What is the size of your farm?
    a) Small
    b) Medium
    c) Large
11. What is the area of your farm?..... ☐
12. On average, what would you say is the maximum yield of your production? ☐
    .....
13. On average, what would you say is the quality of your products?..... ☐
    .....
14. Has there been improvement in the average yield and quality of your products in the past five years from the time you started farming? ☐
    a) Yes
    b) No
15. Do you use a business plan for your farm? ☐

a) Yes
b) No

16. Is it formal, written business plan? ☐
    a) Yes
    b) No
17. Do you use a marketing plan for your farm business? ☐
    a) Yes
    b) No
18. Is a formal, written marketing plan?
    a) Yes
    b) No
19. Have you considered diversifying into any other business activities in addition to your main farming business (if not, please move to question 26) ☐
    a) Considered, but rejected it.
    b) Tried it, but not involved now.
    c) Currently involved.
    d) Currently considering it.
20. What are these diversified activities?..... ☐
    .....
21. Who is responsible for managing these diversified activities?..... ☐
    .....
22. Do you use a business plan for your diversified activities? ☐
    a) Yes
    b) No
23. Is it formal, written business plan? ☐
    a) Yes
    b) No
24. Do you use a marketing plan for your diversified activities? ☐
    a) Yes
    b) No
25. Is it formal, written marketing plan? ☐
    a) Yes
    b) No

Section B

Planning and Marketing activities

26. It is important to use a formal business plan for a farm ☐
    a) Strongly disagree
    b) Disagree
    c) Neither disagree nor agree
    d) Agree
    e) Strongly agree

27. It is important to use a formal marketing plan for a farm ☐
    a) Strongly disagree
    b) Disagree
    c) Neither disagree nor agree
    d) Agree
    e) Strongly agree
28. It is important to use a formal business plan for diversified activities ☐
    a) Strongly disagree
    b) Disagree
    c) Neither disagree nor agree
    d) Agree
    e) Strongly agree
29. It is important to use a formal marketing plan for diversified activities ☐
    a) Strongly disagree
    b) Disagree
    c) Neither disagree nor agree
    d) Agree
    e) Strongly agree

Section C

Questions Regarding Entrepreneurial Skills:

30. How skillful are you in recognizing and realizing opportunities? ☐
    a) Not at all skilled
    b) Somewhat skilled
    c) Moderately skilled
    d) Fairly skilled
    e) Very skilled
31. How skilled are you in networking and utilizing contacts? ☐
    a) Not at all skilled
    b) Somewhat skilled
    c) Moderately skilled
    d) Fairly skilled
    e) Very skilled
32. How skilled are you in creating and evaluating a business strategy? ☐
    a) Not at all skilled
    b) Somewhat skilled
    c) Moderately skilled
    d) Fairly skilled
    e) Very skilled

Questions Regarding the Importance of the Skill:

33. How important do you consider the skill in question 30?
    a) Not at all important
    b) Somewhat important
    c) Moderately important
    d) Fairly important
    e) Very important

34. How important do you consider the skill in question 31?
    a) Not at all important
    b) Somewhat important
    c) Moderately important
    d) Fairly important
    e) Very important

35. How important do you consider the skill in question 32?
    a) Not at all important
    b) Somewhat important
    c) Moderately important
    d) Fairly important
    e) Very important

Section D

Other Questions:

36. Have you received any training on other farming skills?
    a) Yes
    b) No

37. If yes, what skills where you trained?.....
    .....
    .....

38. Please mention any other skills you have apart from the three skills mentioned Above?.....
    .....

39. In your experience, do some farmers have these skills more than others?
    a) Yes
    b) No

40. If so, what causes the differences?.....
    .....
    .....

41. How did you develop your own skills?.....
    .....

42. Why did you develop your own skills?.....
    .....

.....

43. What can be done to develop these skills?..... ☐

.....

.....

44. In your own opinion, what can be done to develop these skills?..... ☐

.....

.....

45. How apt would you say "am an entrepreneur?" ☐

a) Very unlikely
b) Unlikely
c) Not certain
d) Likely
e) Very likely

--- Thank you very much for your time today!!! --